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,, elegans
,, Rickerianum splendens
,, vexillarium purpureum
,, ,, splendens
,, ,, variegatum
Dendrobium Falconeri giganteum
,, macrophyllum var. Richardi
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Friday, July 18.

IMPORTED and ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY, July 18, very fine and valuable importations, consisting of CATTLEYA MENDELII, in large masses and most excellent condition; they have been collected in quite a new district, and the collector, who saw many in flower, describes them as being exceptionally rich in colour, and of fine compact form. ODONTOGLOSSUM PESCATOREI, in fine order—bulbs plump and sound. ODONTOGLOSSUM TRIUMPHANS, and O. HASTILABIUM. These are by far the best importations seen for years. Oncidium cucullatum, a few but exceptional Oncidium æmulum, Ada aurantiaca, and a very fine batch of Cypripedium concolor.

On view morning of Sale, and Catalogues had.

Cut Flowers, Plants, and Bulbs.

We hold Sales, several each week. Reference to senders of years standing. Particulars on application.

MESSRS. POPE AND SONS, Sale Rooms, 6, Phillip Street, adjoining Market Hall, Birmingham.

The Nursery, Bracknell, Berks.

TO BE DISPOSED OF (owing to the decease of the Proprietor), this Old-established BUSINESS. Extent about 5 acres; and situated within ½ mile of Bracknell Station, L. & S.W.R. For further particulars, address, FREDK. SAUNDERS, The Nursery, Bracknell, Berks.

East Retford, Notts.

FOR SALE, by Private Treaty, a Freehold NURSERY, in consequence of the death of the proprietor. It comprises 9 Span and Lean-to Houses, in full working order. For full particulars and to view, apply, Mr. HODSON, 8, Market Place, Retford.

West of England.

TO BE LET or SOLD, on exceptionally favourable terms, a very old-established general NURSERY BUSINESS, which has only changed hands three times during the last 150 years. Area about 28 Acres, all in a ring fence, of which 18 are Leasehold, numerous Glasshouses, Dwelling House, Cottage Residence, Manager's House, Labourer's Cottage, Stables, and all necessary offices.

The Land is in a high state of cultivation, and there is a large assortment of general Nursery Stock, including an extensive Collection of Fruit Trees.

A Lease will be granted at a moderate rental, and the vendors will be open to consider any reasonable proposal with regard to the Stock.

Fuller particulars may be had of Messrs. PROTHEROE AND MORRIS, Auctioneers, 67 and 68, Cheapside, London, E.C.

Canterbury. In Main Thoroughfare.

TO LET, at Michaelmas, GREENGROCER'S and MARKET GARDENER'S Business, nearly 2 acres of good GARDEN, well stocked with Fruit Trees, in good state of cultivation. Cucumber pit, 32 feet long, in good working order; with pig-styes, sheds, &c.

G. COURT, 6, St. Peter's Street, Canterbury.

TO BE LET, 1 to 10 acres of GRASS LAND, suitable for Nurserymen and others, on Lease for 7, 14, or 21 years. Rent from £8 to £12 per acre, with the option of purchasing the Freehold within the first seven years. No tithe. Near the main road, Enfield Highway, about nine miles from London.

Apply H. MOORE, 59, Bishopsgate Street Within, E.C.

TO LET, a well-established NURSERY, about 12 acres in extent, well stocked and in fine condition, situated near a large city.—Full particulars on application to A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Gardeners, Fruit, and Flower Growers.

A splendid opportunity to an industrious capable man.

TO LET, within 6 miles of Manchester, Seven Large GREENHOUSES, mostly 60 feet long, heated with 4-inch Hot-water Pipes, on most approved principle. Boilers almost new. Plenty of Water with Land (cheap) if required. Rent £40 per year.

For further particulars, apply to T. LEASON, Acomb Street, Manchester.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL COMPANY
(JOHN COWAN, Limited),

Have just received large and fine Importations of Orchids from India, Mexico, Brazil, Columbia and other countries, and will be glad to send full particulars to anyone favouring them with name and address.

The Company also have an immense stock of Established Orchids, descriptive-priced Catalogue on application to the Company, The Vineyard and Nurseries, Garston, near Liverpool.

NATIONAL CO-OPERATIVE FLOWER SHOW 1890.

FIFTH NATIONAL CO-OPERATIVE FLOWER SHOW, Crystal Palace, AUGUST 16, 1890.

Schedules now ready of over 825 Prizes, comprising Gold, Silver, and Bronze Medals, and £350 in cash; Special Prizes of Goods, Certificates, &c.; post-free on application to

EDWARD OWEN GREENING, Hon. Secretary.

At this Show, the Agricultural and Horticultural Association (Ld.), offer £150 for best produce grown from their reliable One and All Seeds. 3, Agar Street, Strand, W.C., and Creek Road, Deptford, S.E.

THE

GARDENERS' ORPHAN FUND.

NOTICE.

THE ANNUAL GENERAL MEETING of the SUBSCRIBERS to this FUND will be held at the Cannon Street Hotel, on FRIDAY, July 18th next, for the purpose of receiving the Report of the Committee and the Accounts of the Fund for 1889-90, Electing Officers for the ensuing year, and for the ELECTION of TEN CHILDREN to the benefits of the Fund.

The Chair will be taken at 2 o'Clock precisely, and the Ballot will close at 4 o'Clock. The Annual Dinner will be held the same evening at 5 o'Clock. Tickets, 5*s*. each.

A. F. BARRON, Hon. Sec.

Royal Horticultural Society's Gardens, Chiswick, London, W.—June, 1890.

P.S.—The Voting Papers have all been issued; any Subscriber not having received one is requested to communicate with the Honorary Secretary.

A PRIZE of £2 2*s*. for the best PLAN for LAYING OUT HALF AN ACRE of GARDEN and GROUNDS.

Full particulars, S. R., Timson, Berkhamsted.

To Landscape Gardeners.

THE ABERGAVENNY BURIAL BOARD offer a premium of £30 for the best Plan, and a premium of £15 for the second best Plan, for LAYING-OUT THE SITE of their NEW CEMETERY, near Abergavenny. Conditions and Plan of Site may be obtained of the undersigned,

J. T. RUTHERFORD, Clerk to the said Burial Board.

Town Hall, Abergavenny.—June 27, 1890.

BOROUGH of SUNDERLAND. TO ARCHITECTS.

The CORPORATION invite DESIGNS for the ERECTION of PERMANENT BUILDINGS upon the Lower Promenade at Roker, to be used as Cafés, Restaurants, &c.

No premiums are offered, but the successful competitor is to be entrusted with the carrying out of the work, subject to the conditions. A Copy of which, with Lithograph Plan of the site, may be had on application to the Borough Surveyor, East Cross Street, Sunderland.

Designs to be delivered on or before second day of August next.

By order, FRAS. M. BOWEY, Town Clerk.

June 20, 1890.

DAILY PARCELS EXPRESS SERVICE to the CONTINENT, *viâ* Queenborough, Flushing, Kaldenkirchen.

This Parcels Service, in direct connection with the German and Austro-Hungarian Posts, is specially adapted for the rapid and regular despatch of Plants, Bulbs, &c. No Certificate required for Germany. Tariffs free on application. Goods also accepted for Conveyance by *Petite and Grande Vitesse*.

BEST, RYLEY AND CO., 88, Bishopsgate Street, London, E.C.

Receiving Office at Holborn Viaduct Station.

To the Trade.

FERNS!—FERNS!!—FERNS!!!—In twenty most saleable kinds—Adiantums, Polypodiums, Cyrtomiums, Pteris, &c. Adiantum cuneatum, large stuff, ready to pot at once in 5-inch pots, 16*s*. and 20*s*. per 100; Pteris cretica cristata, and a few other kinds, from stores, 6*s*. per 100, 50*s*. per 1000.—J. SMITH, London Fern Nurseries, Loughborough Road, Brixton, S.W.

LOVEL'S Yorkshire STRAWBERRIES.—Strong, healthy, and well-rooted Runners, to fruit next season. Thury, Paxton, President, Noble, and other good varieties. Full Descriptive Price LIST with Testimonials free. Sample Parcel, 3*d*.—W. LOVEL AND SON, Driffield.

MAIDEN HAIR FERN, 25,000 to offer in 4 and 5-inch pots, at £2 per 100; also 100 cut fronds for 1*s*. 3*d*., post free.

TAYLOR AND CO., Timperley, Cheshire. Cash with order.

5/- **All the Undermentioned Plants** 5/-

12 BEST VARIETIES of Cactus and Double DAHLIAS, 4 White Cactus DAHLIA "Constance," 50 White ASTERS "Queen of the Market," 50 Best Mixed ASTERS, and 50 Annual CHRYSANTHEMUMS, including all the newest and best varieties in cultivation.

Address, H. NORTH, Wood Lane, Binfield, Berks.

CUCUMBER PLANTS "RIDGE." Lorendez's best of all. Strong Plants, 2*s*. 4*d*. per doz., free.

H. NORTH, Wood Lane, Binfield, Berks.

EXTRA Strong Tanned NETTING, 50 yards by 4 yards, 8*s*. per net; 100 yards by 2 yards, 8*s*. per net. RAFFIA GRASS, 7*d*. per lb.

J. W. WILLCOCKS, 14, St. Mary's Street, Stamford.

W. H. LASCELLES & CO.,

HORTICULTURAL BUILDERS,

121, BUNHILL ROW,

LONDON, E.C.



CONSERVATORIES,
GREENHOUSES,
ORCHID HOUSES,
VINERIES,
PEACH HOUSES, &c.

Plans and Estimates Free.

GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Raffia, Mats, Bamboo Canes, Rustic Work, Manures, &c. Cheapest Prices of WATSON AND SCULL, 90, Lower Thames Street, London, E.C.

FAWKES' SLOW-COMBUSTION

HEATING APPARATUS.

Most Efficient and Cheapest in Existence.

Requires no sunk stokehole and no brick setting. Will last all night without attention. Will burn house cinders, therefore costs next to nothing for fuel. Any one can fix it. A domestic servant can stoke it.

Complete Apparatus from £4 12s.

SUCCESS GUARANTEED.



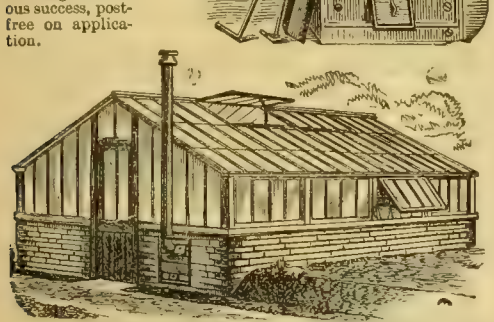
Enormous numbers in use all over the country.

Only Slow Combustion Apparatus of the kind.

CAUTION.

Beware of inefficient incomplete Apparatus, which will not last all night.

Full particulars and Prices of every sized Apparatus, and see numerous Testimonials for the last five seasons, showing enormous success, post-free on application.

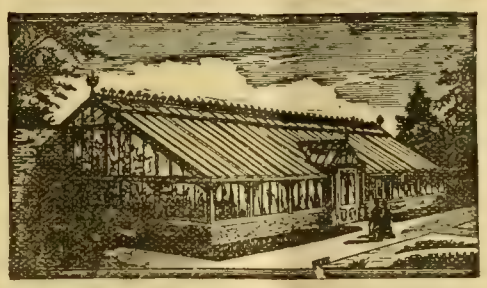


BEST CONSTRUCTED and CHEAPEST Greenhouses, Forcing-houses, Pits, Frames, Plant Protectors, Potting Sheds, Tool-houses, &c.

Illustrated Priced Catalogue post-free from

COMPTON & FAWKES
CHELMSFORD.

RICHARDSON'S



HORTICULTURAL BUILDINGS

Fixed in any part of the Kingdom with Hot-water Apparatus complete.

W. RICHARDSON & CO.

Best Work guaranteed, and at Lowest Prices.

CATALOGUE FREE.

NORTH OF ENGLAND HORTICULTURAL WORKS,
DARLINGTON.







JAS. BOYD & SONS,

HORTICULTURAL BUILDERS and HEATING ENGINEERS,

PAISLEY.

HORTICULTURAL STRUCTURES

of every description, in either Wood or Iron, or both combined.

Wooden Chapels, Shooting Lodges, Tennis Courts, Cottages, &c.

Hot-water Apparatus for warming Buildings of every description.

Illustrated Circulars Post-free.

Complete Catalogue, 3s.

HORTICULTURAL GLASS

STOCK SIZES	
Inches.	Inches.
14×12	20×15
16×12	20×16
18×12	22×16
20×12	24×16
16×14	20×18
18×14	22×18
20×14	24×18

SHEET

21-oz. and 15-oz. Foreign, of above sizes, in boxes of 100 feet and 200 feet super.

English Glass, cut to buyers' sizes, at lowest prices, *delivered free and sound* in the country, in quantity.

"HORTICULTURAL PUTTY." Own Special Manufacture.

GEORGE FARMILOE & SONS,

LEAD, GLASS, OIL, and COLOUR MERCHANTS,

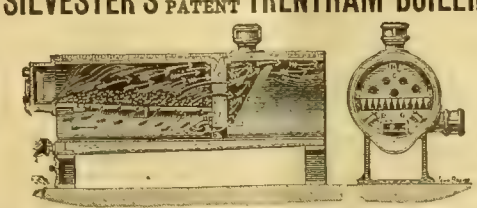
34, St. John Street, West Smithfield, London, E.C.

Stock Lists and Prices on application. Please quote *Chronicle.*

TRENTHAM BOILERS.

The original and only Makers of the Genuine Trentham, also

SILVESTER'S PATENT TRENTHAM BOILER



Makers of HOT-WATER PIPES and FITTINGS, and APPARATUS erected complete by HOT-WATER, HOT-AIR, &c. GAS and WATERWORKS PLANT of every description.

FRED SILVESTER & CO.,

CASTLE HILL WORKS, NEWCASTLE, STAFF.

CLIBRAN'S SPECIAL GARDEN SUNDRIES

LEMON OIL INSECT-CIDE. Owing to its efficacy, cheapness, and safety—even in the hands of the most careless operator, this preparation is now looked upon by most practical horticulturists as the best Insecticide for dipping or syringing. Post-free—pints, 1*s.* 10*d.*; quarts, 3*s.* 3*d.*; half-gallons, 5*s.* 9*d.*

EUCHARIS MITE KILLER. This has proved itself a boon to many Eucharis growers. By its aid all may grow this favourite flower free from that dreadful pest "The Eucharis Mite." Testimonials free on application. Post-free—half-pints, 1*s.* 9*d.*; pints, 2*s.* 9*d.*; quarts, 4*s.* 9*d.*; half gallons, 8*s.*

N.B.—ABOVE POST-FREE, OR FROM YOUR SEEDSMAN.

CLIBRAN'S Oldfield Nurseries, Altrincham

Also 10 and 12, Market Street, Manchester.

"Always use the best materials; your plants can not do well in common soil."

SPRING POTTING.

1 sack BEST LEAF MOULD, 3*s.* 6*d.*; 1 sack PEAT, 3*s.* 6*d.*; 1 sack YELLOW FIBROUS LOAM, 3*s.* 6*d.*; 1 sack BEALE'S CONCENTRATED FARM-YARD MANURE, 6*s.*; 1 cwt. COARSE SILVER SAND, 3*s.* 6*d.* Or, 1 sack Mixture of above to suit any purpose, 5*s.* Over 10*s.* value, free delivery by Carter Paterson, or to rail. Send 6*d.* extra for sack.

New Importation.

BAMBOOS and CANES.

SPECIAL FOR CHRYSANTHEMUMS (see samples at Royal Aquarium and other shows this month), in 5, 6, 7, 8, and 9 feet lengths. Thin quality with tips at 5*s.* 6*d.*, 7*s.* 6*d.*, 9*s.* 6*d.*, 11*s.* 6*d.*, and 13*s.* 6*d.* per 100. Very stout at 11*s.*, 15*s.*, 19*s.*, 23*s.*, and 28*s.* per 100. Can be ordered through any Seedsmen or Florist, or direct from the importers: R. BEALE AND CO.

Suitable sizes for ROSES, DAHLIAS, HOLLYHOCKS, CARNATIONS, BEGONIAS, TOMATOS, &c., from 1 foot, 1*s.* per 100; 1 ft. 6 in., 1*s.* 6*d.*; 2 ft., 2*s.*; 2 ft. 6 in., 2*s.* 6*d.*; 3 ft., 3*s.*; 3 ft. 6 in., 3*s.* 6*d.*; 4 ft., 4*s.* per 100.

SOLID HARD CANES, colour of ROSE STOCKS, very heavy, 3 ft., 3*s.* 6*d.*; 4 ft., 4*s.* 6*d.* per 100.

VERY STOUT HARD BAMBOOS, hollow at the ends, and can be jointed with thin canes so as to make 6, 7, and 8 feet lengths, 3 ft., 3*s.* 6*d.*; 4 ft., 4*s.* 6*d.* per 100.

OPEN AIR MUSHROOMS.

SPAWN for meadows, lawns, and paddocks. By following our directions and using our SPECIAL MEADOW SPAWN, excellent crops may be gathered through the summer and autumn. Price 5*s.* per bushel. 1*s.* extra for sack and carriage.

R. BEALE AND CO.,
NEW SOUTHGATE, LONDON, N.
Contractors to the London County Council.

GENUINE GARDEN REQUISITES,

as supplied to the Royal Gardens.

RUSSIA MATS—New Archangel, 9 ft. 4 ins. by 4 ft. 6 ins., 20*s.* doz.; Heavy Petersburg, 7 ft. by 3 ft. 8 ins., 12*s.* doz. SPECIALITE TOBACCO PAPER, 10*d.* per lb., 28 lb. for 21*s.* TOBACCO CLOTH, 1*s.* per lb., 28 lb. for 26*s.* ORCHID PEAT, 8*s.* per sack. PEAT, LOAM, SAND, MANURES, and SUNDRIES. Price List free.—W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

THE COMING FUMIGATING MATERIAL.

Tobacco Paper Entirely Superseded.

Tobacco Paper is disagreeable, unsafe, and uncertain.

CAMPBELL'S FUMIGATING INSECTICIDE

is cheaper, more effectual, perfectly safe, and unquestionably the coming Fumigating Insecticide. Numerous testimonials to this effect:—

"Please send me —— rolls of Campbell's Fumigating Insecticide to the above address. I like it much better than Tobacco Paper."

In rolls, post-free, for houses of a capacity of—

100 cubic ft.,	500 cubic ft.,	1000 cubic ft.,	2000 cubic ft.,
8*d.*	1/–.	1/3.	2/3.

OR FROM YOUR SEEDSMAN.

CLIBRAN'S, Oldfield Nurseries, Altrincham; also 10 and 12, Market Street, Manchester.



GARDEN REQUISITES.



TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)

COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* 4*d.* each; 10 sacks, 12*s.* 6*d.*; 15 sacks, 17*s.* 6*d.*, 20 sacks, 20*s.*; 25 sacks, 24*s.*; 30 sacks, 27*s.*; 40 sacks, 35*s.*; 50 sacks, 40*s.*; Truck-load, loose, free on rail, 30*s.*

GENUINE ORCHID PEAT, 8*s.* 6*d.* per sack; 5 sacks, 40*s.*; BEST BROWN FIBROUS PEAT, 5*s.* per sack; 5 for 22*s.* 6*d.* BLACK FIBROUS PEAT, 4*s.* 6*d.* per sack; 5 for 20*s.* COARSE SILVER SAND, 1*s.* 6*d.* per bushel; 14*s.* half ton; 24*s.* per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1*s.* per bushel. Tobacco Paper, 1*s.* per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, Shell Shingle, Charcoal, Mushroom Spawn, and Russia Mats.

GARDEN NETTING, 2 yards wide, 1½*d.*, or 100 yards, 10*s.*; 4 yards wide, 3*d.*, or 100 yards, 20*s.* SCRIM CANVAS, 1 yard wide, 3*d.*, 2 yards, 6*d.* per yard. TIFFANY, 38 in. wide, in 20 yard pieces, 3*s.* 6*d.* per piece.

BAMBOO CANES, 3 feet 10 in., 3*s.* 6*d.*, 5*s.*, and 7*s.* per 100; extra long, 5*s.* per dozen.

DAHLIA STAKES, and all kinds of Flower Sticks, Cheapest in the Market. Marquees, Tents, Flags, and all kinds of Garden Tools and Sundries.

Terms strictly Cash with order. Price LIST on application from

CHUBB, ROUND & CO., West Ferry Road, Millwall, London, E. *Bankers—Smith, Payne, & Smiths.*

SLUGS.—Save your Garden Produce by using "Lenos," 5s. per gallon, Diffuser included.

LIQUID MANURE ESSENCE, Inodorous, for Greenhouse and Garden, 5s. per gallon—will make from 50 to 100 gallons.

ARTIFICIAL MANURE, without Smell, will produce grand blossoms, unsurpassed for Fruit and Vegetables, 112 lb., 20s.; 56 lb., 11s.; 28 lb., 6s.

ANTI-MILDEW, 10s. per gallon.

PLANT FUMIGATOR, combining Meat or Fish Smoker, Disinfector, or Domestic Safe, 4 feet 6 in. high, 27s. 6d.; 6 feet, 35s.

G. C. BROOKES & CO.,
72, LEADENHALL STREET, E.C.

SAVE HALF THE COST.

GARSIDE'S BEDFORDSHIRE COARSE AND FINE SILVER SAND

Is admitted by the leading Nurserymen to be the Best Quality obtainable in the Trade.

Consumers should Buy Direct from the Owner of these Celebrated and Extensive Pits, which contain a practically inexhaustible supply of Splendid Sand, and thus *save half the ordinary cost.* NO TRAVELLERS OR AGENTS.

Apply direct to the Proprietor for Samples and Price free on Rail or Canal. *All Orders executed with the utmost promptness and under personal supervision.* Special Railway Rates in force to all parts. All kinds of PEAT supplied at lowest possible prices. Sample Bag sent on application to

GEO. GARSIDE, Jun., F.R.H.S., Leighton Buzzard, Beds.

For Green and Black Fly, American Blight, Camellia Scale, Red Spider, Mealy Bug, Brown and White Scale, Worms, Wood Lice, &c.

"PICRENA," THE UNIVERSAL INSECTICIDE.

SAFE—ECONOMICAL—EFFECTUAL.

15, PRINCES STREET, EDINBURGH, *July* 15, 1887.—"Dear Sirs, I have thoroughly tested a sample of a new Insecticide which you were so good to send me. At the rate of 1 oz. to a gallon of water at a temperature of 95°, I find it kills Green Fly immediately. Double this strength, or 2 oz. to a gallon at 120°, seals the fate of Scale of all sorts in a few seconds; while 3 oz. to gallon at same temperature effectually dissolves Mealy Bug, and so far as I have yet observed, without the slightest injury to leaf or flower, and it is withal a most agreeable compound to work with. All our insect remedies are applied through common syringe, or garden engine, a much severer test of efficiency than when applied by hand-washing or spray.—I remain, dear sirs, yours truly. (Signed) A. MACKENZIE," of Messrs. Methven & Sons.

Victoria and Paradise Nurseries, Upper Holloway, London, *January* 7, 1888. "GENTLEMEN—I have given your Insecticide, 'Picrena,' a good trial in competition with many others. I am pleased to say that I have found it to be more effectual in destroying Mealy Bug and other insects than anything we have ever used. It ought to command a good sale. (Signed) B. S. WILLIAMS."

Sold by Chemists, Nurserymen, and Florists,

in Bottles at 1s. 6d., 2s. 6d., and 3s. 6d.; in Tins (1 and 2 gallons), 10s. 6d. and 20s. each; in quantities of 5 gallons and upwards, 9s. per gallon.

Prepared only by

DUNCAN, FLOCKHART & CO., Chemists to the Queen, Edinburgh.

May be had from B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London; and from WILLIAM EDWARDS AND SON, 157, Queen Victoria Street, London.

NORMAL FERTILISER

For GREENHOUSE or GARDEN.

Price:—	7 lb.	14 lb.	28 lb.	56 lb.	1 cwt.
	2s.	3s. 6d.	5s. 6d.	9s.	14s.

And in 6d. and 1s. packets.

To be had of Seedsmen and Florists, or the NORMAL MANURE COMPANY, Ltd., 121, Bishopsgate Street Within, E.C., and Farnham Road, Guildford. Usual Trade Discounts. Wholesale of Messrs. HURST AND SON, 152, Houndsditch, London

EPPS'S SELECTED PEAT.

SPECIAL for Orchids, Choice Plants, Hardwooded and Fern do., and Rhododendrons. Excellent LEAF-MOULD, SAND, Rich LOAM, PEAT-MOULD, CHARCOAL, COCOA FIBRE, SPHAGNUM, and all GARDEN SUNDRIES. PEAT MOSS LITTER.

EPPS & CO., The Peat Dépôt, Ringwood, Hants.

BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each, or 1 cwt. Bags, sealed, 13s. By all Seedsmen, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

SLUGICIDE (Registered).—Certain death to Slugs; Fertiliser to Soil, perfectly harmless to plant, vegetable, and animal life. Delicate Seedlings are absolutely secure if sprinkled with Slugicide. Price 1s. 6d., post-free.—The SLUGICIDE CO., 6, Mary-le-port St., Bristol, and all Seedsmen.

GENUINE ROLL TOBACCO PAPER.—Strong, effective, 1s. per lb., carriage paid, for cash only. W. C. LEE, 61, Westgate, Grantham.

EUGÈNE ROUSSET, NURSERYMAN, Route de Paris, Angers (Maine et Loire), France.

NEW PLANTS.—Three fine varieties of ANTHURIUM SCHERZERIANUM, with spotted, coloured and cream-coloured flowers, offered to subscribers. We have purchased the whole of the stock of the following varieties, comprising the choicest in the collection of M. de la Devansaye, and to which the highest awards have been made at the Exhibitions of Tours, Angers, Ghent, Versailles, and Paris, 1889 and 1890. These Plants (strong specimens) will be sent out on the following terms:—

ANTHURIUM ANDAGAVENSE, spotted variety. Fifteen Plants. Figured in the *Flore des Serres*, vol. 23, fig. 2454; *Revue Horticole*, 1887, p. 444. Each Plant, 250 francs.

ANTHURIUM MARIA-THERESA, coloured variety. Five Plants. Figured in the *Revue Horticole*, 1887, p. 444. Each Plant, 300 francs.

ANTHURIUM MADAME DE LA DAVANSAYE, cream coloured variety. Six Plants. Figured in the *Illustration Horticole*, 1889, p. 83. Each Plant, 300 francs.

NOTE.—These three varieties will be delivered to subscribers the same day, as soon as the subscriptions are all taken up. Subscribers will obtain the best plants in the order of their subscription. Payment must be made without discount, 4 months after date of despatch. If on the 15th of September, 1890, the 26 subscriptions are not taken up, the offer of the plants will be deferred till the 1st of May, 1891, under the same conditions. Being in possession of the entire stock, we undertake to keep the price above quoted the same for three years from the date of sending out.

Fritillaria Wallyewi.

G. VAN TUBERGEN, Haarlem, Holland, is expecting an importation of this extremely rare Bulb, unquestionably the finest and most distinct of all Fritillarias. Its flowers are large, silvery-grey without, the inside of a peculiar deep red colour. Imported bulbs are offered at the following prices: 4s. each, 44s. per dozen. Apply either direct or to—

Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

SAMUEL SHEPPERSON, FLORIST, Prospect House, Belper, Derbyshire, begs to offer the following, of which he has made a specialty for the last twenty-six years:—

PRIMULAS! PRIMULAS! and CINERARIAS, finest possible strains, the latest new colours and improved forms as sold in Covent Garden. Good Plants for next autumn and winter blooming, 1s. 6d. per dozen, 10s. per 100; extra strong selected, 2s. per dozen, 12s. per 100.

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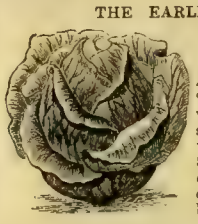
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THE

Gardeners' Chronicle.

SATURDAY, JULY 5, 1890.

HERR MAX LEICHTLIN'S GARDEN.

(WITH FIGURE OF IRIS GATESII, P. 17.)

A VISIT to the Botanischer Privat Garten at Baden-Baden is always an event of the greatest interest and pleasure to those who have bulbs on the brain, with which disease I must confess myself to be afflicted. If there were no other considerations but those of gardening in the world, I should like to repair to it with the utmost regularity at least twice every year. But that is a programme which it is not so very easy to carry out, so, after a four years' absence, I am glad to console myself with coming to it once more. I found the magician at work, as he has been for a long time since, weaving his spells, not in the dark colours of necromancy, but in the brightest hues of the rainbow, and in forms and shapes which are fit for heaven. He seemed to be perfectly well, and not a bit tired of the delightful occupation to which his whole life has been given up. But I could not assert that this changelessness is as much a feature of his garden as it is of him; on the contrary, apostolic words were the first that came into my mind when I had gone through his gate —"Old things have passed away; behold everything has become new!" Where were the former friends which I knew so well, and admired so much, only a few years ago? Scarcely one of them could be found; their places knew them no more; and they are, in all probability, now decorating the grounds of some English or German amateur, or labelled off in some botanical collection, either on the Continent, or with ourselves. Here I remember to have seen Androsace foliosa for the first time; there, Ruta patavina was invading and taking full possession of the path; in this border was a crimson Polygonum from the Himalayas; in that, Hellebore Madame Fourcade was very much at home; Hibiscus palustris grandiflorus attracted me of old, and so I might go on, though doubtless some of the best things are forgotten by me, while I write here without notes or memoranda of any kind; but now all this has been changed.

The only very conspicuous reminders of the past that I could see were a few Tropæolums and several Irises, which seem rooted very emphatically to the spot, and Iris Korolkowi has held its own here, while friends and neighbours have long since passed away. But in this lies the specialty of Herr Max Leichtlin's work. He presides over no botanic garden for the advancement of science, and still less has he to gather plants together after the *rôle* of a nurseryman; but his is, so far as I know, a very unique occupation, which consists in obtaining *new* plants and bulbs from the ends of the earth, and then, when he has proved them and multiplied them, he sends them out, and they charm and captivate many a lover of flowers, who, but for him, could never have had this pleasure at all. The one word then which is written upon the Botanischer Privat Garten beyond any other from end to end is Novelty—here you will be gladdened if you have any delight in seeing things for the very first time, and here you may get new ideas into your head which you never could have arrived at elsewhere. This little garden plot, which is full of innumerable borders and frames and seed-pans (sometimes in one not very large pan Max Leichtlin said there were so many as two thousand seedlings coming up) are treasures of the greatest possible rarity. They can be met with — at least in combination — nowhere else, and the pleasure of making such sweet acquaintances for the first time can hardly be exaggerated. It is as though a stream were passing through this spot which afterwards widened out, and which now fertilises the most distant localities. But let me enumerate just a few of the things which are at present under Herr Max Leichtlin's care, and which struck me most during my visit. I was passing along with him looking at this and at that, when he said, "There is the scarcest alpine in Europe." That was enough to excite curiosity, if anything could do it, and I beheld before me a pretty little flower very much in the way of Haberlea rhodopensis, or, perhaps, still more of Ramondia serbica, on which innocence was written to the last degree. But although that is true, the associations connected with Jankæa Heldreichii, are very far from being innocent. It seems that this interesting little plant was noticed by Boissier some thirty years ago, and from that time to this it has remained in the closest obscurity, and no one has been able to get even a look at it. The reason is a sufficient one for this great retirement, but I should never have guessed it before being told. Jankæa Heldreichii lives amidst scenes of blood and violence—the brigand's lair is its home, and without an escort of a strong military force, it could not safely be got at. No wonder, then, that we all knew nothing about it. If it had not been for Max Leichtlin's enterprise that might have gone on for ever. I asked if the soldiers were employed in procuring this rarity, and the answer was "Certainly,"—the neighbourhood of Mount Olympus is not one yet where a collector of plants can wander with any safety at all. I am very glad I have seen, and I hope some day I may possess, this delightful little stranger; I do not know that I could say that it is much better, if better at all, than a Haberlea or Ramondia, but is there not a pleasure in attaining to the unattainable? The next very noticeable plant, as it seemed to me, was a striking Onosma. It is to go by the name of O. albo-rosea, and this is most suitable. I never saw a red Onosma before, nor did I even know that there is one. Max Leichtlin told me that my visit was about ten days too late for this plant; it was going off when I was at Baden-Baden. All Onosmas are very pretty, I think; but if one could be imagined with the look of ripe Cherries about it, an impression would be conveyed of this new introduction from Armenia, and which differentiates it from anything else.

At the entrance of the garden a large and very imposing Umbellifer stared one in the face. If any of the orders of the vegetable kingdom could be dispensed with, I should name the Umbelliferous at once. I hold, with a friend, that it can sometimes be tolerated, but seldom admired; but in this instance, size, if nothing else, seems to claim some acknowledgment of it. The plant is Dorema ammoniacum of Don, known as Asa fœtida in medicine. The blossom, which is of a light canary yellow, is plentiful, but the growth in a very short space of time calls most for remark. In less than five or six weeks the plant has attained a height of more than 6 feet, and has a diameter of at least 4 feet at the bottom. I should never care to fill my garden with specimens of Dorema ammoniacum; but I am glad to have seen it; there must have been a wonderful energy in so quickly building up cell upon cell till such a fabric was raised.

Time and space would fail me to tell of half of Herr Max Leichtlin's treasures. He had some specially fine Pæonies in blossom when I was with him—*e.g.*, Pæonia Moutan var. Gloria Belgarum is the grandest Pæony I ever saw; and another noticable specimen is Pæonia Moutan var. Ceres, a hybrid between P. M. chinensis and a Japanese Pæony. Both of the above are very good indeed. I can do no more than just mention as new to me—Trifolium tomentosum, which is quite worthy of its name, and comes from Syria; Exochorda Alberti, which very much resembles, but is preferable to, and more amenable to reason than the Exochorda one has been accustomed to see; Helicophyllum Aucheri, which has an undeniable look of velvet about it; Tropæolum Leichtlinii, which is intermediate between T. edule and T. polyphyllum; Geranium balkanum, of very pleasing appearance, and with foliage of most remarkable fragrance; a Bellevalia of the brightest ultramarine blue; Colchicum giganteum, of larger dimensions than any other; Cerastium Haussknecktii; Lindelofia of longifolia; Rheum rivas, from Persia, with young leaves resembling a toad; and many others which are too numerous for me to mention just now, and which I missed at their best either by being a little too early, or a little too late, in the season to suit their pleasure. Galanthus Fosteri is considered at Baden Baden to be the future Snowdrop King; it has already obtained very large and striking dimensions, and will improve under cultivation still further.

But there are two things I must not forget: Herr Max Leichtlin seems to consider that Fritillaria Walujewi is by far the best of its tribe; if so, I can only hope that I may possess it before long, for there are some flowers that commend themselves to me in the highest possible manner, and among these are the Fritillarias. This particular one to which I now refer, is said to be chequered in the inside, and of a peculiar red colour; outside it is of a silvery grey appearance, and is even more fascinating than any of its congeners, which is saying a great deal for it; but while I could run on still for a very long time, adding the name of one thing to another which is well worthy of notice, I must wind up with the praise of an Iris, which alone would have repaid the trouble of a journey from the Isle of Wight to Baden. I had heard from Professor Foster of the unusual dimensions and beauty of the newly-introduced Iris Gatesii from Armenia, and if I had been at home, I think I might have seen it in blossom in my own garden in Ryde, but that is a pleasure still to look forward to. Herr Max Leichtlin says it has the most aristocratic appearance of any flower that has ever passed through his hands, but unfortunately it was not in its pride when I was with him last week, and yet, for all that, I was not to be disappointed about Irises—Iris tingitana was in its full glory, and better than I had ever seen it before; Iris macrosiphon of Torrey, from America, was quite new to me, and very interesting indeed; Iris lupina was worthy of its name; Iris Korolkowi violacea was elegance and loveliness combined; and there were others which I could name, but more striking than any of them, more fascinating than any other Iris I ever met with at all (and when one is speaking of an Iris that is at once the Ne plus ultra of flowers), was Iris Lorteti, a recent introduction, and from which I could not take my eyes for some minutes, so inexpressibly beautiful did it seem to me to be. I went to fetch my wife from the hotel on purpose that she might not lose the chance of seeing this incomparable flower, which will be enthroned in my affections for a long time to come. Herr Max Leichtlin seemed almost in doubt as to which of the two he prefers, Iris Gatesii or Iris Lorteti. If I remember rightly, he said they very much resemble each other: Iris Gatesii is a trifle larger and the more aristocratic of the two—that was the word he used; Iris Lorteti has the lovelier tints. But I am not quite sure about his choice, and I do not think he was quite sure himself as to which of these two Irises he preferred. At present he is very much interested in new importations which he expects from Armenia. It would almost seem that Armenia is the best hunting ground in the world, specially for bulbs, but there is a great deal of danger and trouble in the discovery and importation of plants. His collector has to make himself known to the Burgomaster or chief of the village near to which he is working, and he is attended wherever he goes by one of the chief's friends or his mission would very soon be interrupted, and even his life might be sacrificed. Still, notwithstanding all its dangers and difficulties, Max Leichtlin seems to hope that his search in Armenia will soon yield to us much more in the way of plants and bulbs than as yet it has done, and I am sure all those who care for these things will devoutly say Amen to his desire.

I have already spoken of magic, and it is shown more than anything else in the wonderful improvements and transformations which some flowers assume when they pass through the master's hands. In some instances one would scarcely know them again; so altered are they from their former selves. A chance word on the part of Mr. Ingram some fifteen or sixteen years ago set Max Leichtlin at work till he produced from a common Aubrietia the beautiful Aubrietia Leichtlinii—or rosea as it is sometimes called—which we all admire so much. It is quite one of the prettiest of spring flowers, and it seems wonderful that it should have been obtained in this way, but selection after selection of seed did the work. A blossom was marked off for distinction which had any suspicion of rose tint in it, and this occurred over and over again, till at last it was no case of suspicion at all, but a warm roseate colour declared itself plainly and evidently enough. But who shall say how much of foresight and patience, and working up to a point was required in all this? The transformation of a blue Aubrietia into a red one is not done in a moment. We are promised now that in due course of time we shall have an Aubrietia which is decidedly white, that would be a great acquisition, and I can believe anything about promises in the future when I see what has been done in the past. Perhaps, of all Max Leichtlin's triumphs, Crocosma imperialis stands at the head; it is so at any rate so far as I know. It is an undeniably beautiful flower, and one might judge from the estimate which is put on it when it comes into the nurseryman's hands, that the popular verdict is very much in its favour. Of course, it is not in blossom at this season of the year, but I know it quite well, and I cannot say too much in its praise. But here I believe it is the case that the very last word has not yet been spoken. Herr Max Leichtlin notices a sort of reflexed tendency in its petals, and he therefore comes to the conclusion that a Crocosma with reflexed petals can some day be arrived at. May he live to accomplish it, and so far as that goes, may it be a long time before he gets what he wishes. Everyone who has a garden at all worth looking at must have instance upon instance before his eyes of very similar improvements. On the tombstones, as they are facetiously called, which so often do duty for labels, no word is of more frequent recurrence than "Leichtlinii" or "grandiflora Leichtlinii;" there is a proof positive in that of the inspiration which comes to us from Baden, and of the debt which we all owe to its skilful and laborious

worker. If there were a sufficient number of Leichtlins in the world, and life were prolonged as in the case of Methuselah, they could certainly change the face of the whole vegetable kingdom, but then I think it would be rather a question if the change is for the better. One can admire now the perfectly perfect flowers when so many others abound which are of lesser pretensions, and which set them off as a foil, but if everything were just as it ought to be, and colours harmonised in every case, and forms were regular to a degree, I doubt if we should think ourselves better off in the least. If the line be true of men and of women, "He is all fault, who hath no fault at all," surely something of the same sort would obtain in the kingdom of Flora, and we should all be longing for a few jagged edges—a few less symmetrical forms—just an imperfection here and there, to set off all the rest. But this will not come in our time, so we will bid Herr Max Leichtlin God speed in the very interesting work to which he is so much given up, and greatly admire what he does. I am afraid, however, that what has been just now written will appear as rank heresy in the eyes of my florist brethren; but I cannot help being rather on the side of the heretics.

I unfortunately missed Mr. Elwes by two days at Baden-Baden; I should have liked to have met him there. I am not going to re-open a recent interesting controversy in your columns, but of course it was referred to by us. I attach a very great deal of importance to Herr Max Leichtlin's opinion about anything that has to do with "A Gardeners' Problem," and for the most part I could quite well fall in with everything he said. When I saw him working from morning till night, interested beyond measure in his experiments and his ventures all over the world, superintending with his own eyes and hands the well-being of the precious possessions which are under his care, I could not but think of him as at least in one manner fulfilling to the very letter the following wish:—

"The empirical philosopher is like to a certain insect which shall be nameless, which only lays up and uses its store—the rationalists are like spiders, which spin all out of their own bowels; but give me a philosopher, who, like the bee hath a middle faculty, gathering from abroad, but digesting that which is gathered." *Bacon.*

for assuredly there never was a busier bee than Herr Max Leichtlin is on the face of the earth. *Henry Ewbank, Hotel de la Paix, Vichy, May* 27, 1890.

New or Noteworthy Plants.

MOOREA IRRORATA, *Rolfe, n. gen. and sp.**

A fine and very distinct Orchid has recently flowered in the Glasnevin Botanic Garden, Dublin, and as it seems distinct from any existing genus, I propose for it the above name. The plant stands nearly 2 feet high, and bears an erect scape with thirteen flowers, each 2 inches in diameter. The sepals are bright reddish-brown, passing into nearly white at base, thus forming a circle of a paler colour, which is very striking. The lip is remarkable in shape; it is sessile, articulated to a very short foot, and three-lobed. The front lobe is very narrow, and the side ones large and rounded, bright straw-coloured, with radiating lines of dark blackish-purple; in fact, it bears a decided resemblance to a butterfly attached by the head. At the base is situated a crescent-shaped crest, which in other respects somewhat resembles that of Phalænopsis. The pollen is like that of Houlletia, near which the genus will stand, but from which it differs in the shape and details of the lip. In that genus the lip is continuous with the column, not articulated, while the front lobe is articulated, not continuous. Again, Houlletia has a distinct unguis to the lip, while the front lobe and usually the side ones are also very different. In Houlletia Wallisii, Rchb. f., the side lobes are broad and rounded, but the resemblance goes no further. The first flower arrived without the pollen, when I thought it might be a somewhat anomalous Zygopetalum, allied to the section Huntleya. In short, the differences presented appear to be as valid as those which separate the allied genera from each other, and the only available plan seems to be the establishment of a new genus for its reception.

It affords me great pleasure to be able to connect the name of Mr. F. W. Moore, Curator of the Glasnevin Botanic Garden, with so striking an Orchid. It is only one of a large series of very valuable contributions to the Kew Herbarium, extending over a long period. I have not had the good fortune to see the Glasnevin collection, but from the specimens received from time to time it is evidently both rich and varied, while in the matter of cultivation it leaves nothing to be desired. Only a few days ago, Mr. Moore sent a flower of Selenipedium caudatum whose petals measured fully 35 inches in length, while on a previous occasion they were but 3 inches shorter. The specific name is given in allusion to the bright reddish-brown colour, which forms a broad zone of colour round the paler centre, giving a very pretty contrast. Mr. Moore bought the plant with others at a sale, but knows nothing about its origin. Of course, it is Tropical American. *R. A. Rolfe, Herbarium, Kew.*

* *Moorea*, n. gen.—Sepals and petals spreading, subequal. Lip articulated to short foot of column, deeply three-lobed, side lobes broadly rounded, membranous; front lobe narrow, linear, continuous with base; crest basal, shortly stalked, with a pair of free spreading arms forming a crescent. Column somewhat elongate, sub-clavate, with very short swollen foot, wings obsolete; pollinia 4, in two unequal pairs, stipes long and very slender, viscous underneath at the base, but without a separate gland; lower half of stipes protruding from anther-case at maturity. Stigma broadly transverse, rostellum small.

Moorea irrorata.—Pseudobulbs ovoid-oblong, 4½ inches long. Leaves 2, petiolate, plicate, lanceolate, shortly acuminate, 1½ to 2 feet long, 4½ inches broad. Scape basal, stout, erect, 1½ feet high, raceme 13-flowered, with about six sheathing closely striate bracts below. Flowering bracts ovate-elliptical, acute, closely striate, pale green, ¾ to 1 inch long. Flowers, 2 inches diameter, pedicels, 1½ to 2 inches long. Sepals, 6 to 7 lin. diameter, reddish-brown with nearly white base, the lateral ones carinate. Petals similar, but a shade narrower. Lip straw-yellow, shining, radiately lined with dark blackish-purple, front lobe with a strong transverse bar near apex; front lobe narrow, acute, 7 lin. long, side ones a little shorter, 4 lin. broad, a little villose at the base; crest and base of front lobe a little brighter yellow, with numerous minute dusky spots. Column, cream-white.

PLANTS, &c., CERTIFICATED

During the Half-Year ending June 30, 1890,

BY THE ROYAL HORTICULTURAL SOCIETY.

*** F.C.: First-class Certificate; A.M.: Award of Merit; B.C.: Botanical Certificate.*

THE FLORAL AND ORCHID COMMITTEES.

Acer Prince Hendjery	...	Paul & Son, May 13—F.C.
Achillea mongolica	...	Paul & Son, June 10—A.M.
Amaryllis The Champion	...	J. Veitch & Sons, March 11—F.C. [A.M.
,, Grand Monarch	...	J. Veitch & Sons, April 8—
Angræcum Hybrid(=A.primulinum)	...	H. Low & Co., March 11—B.C.
Anthurium album maximum		F. Sander & Co., May 28—A.M.
Aster alpinus var. speciosa	...	Barr & Son, and T. S. Ware, May 28—F.C.
Batemannia Wallisii	...	F. Sander & Co., June 10—F.C.
Begonia Black Douglas	...	J. Laing & Sons, June 10—A.M.
,, Enchantress	...	J. Laing & Sons, May 28—A.M.
,, Golden Queen	...	H. Cannell & Sons, June 10—A.M.
,, Henshaw Russell	...	J. Laing & Sons, May 28—A.M.
,, Madame Pfitzer	...	J. Laing & Sons, June 10—A.M.
,, Miss Eastwood	...	H. Cannell & Sons, June 24—A.M.
,, Negro Boy	...	J. Laing & Sons, May 28—A.M.
,, Rev. W. Wilks	...	H. Cannell & Sons, May 28—A.M.
Bertolonia Souvenir de Gand		B. S. Williams & Son, June 10—F.C.
Blandfordia nobilis imperialis		F. Sander & Co., May 13—F.C.
Calla Elliottiana	...	Knight, May 13—F.C.
Camellia La Vestale	...	C. Turner, March 11—F.C.
Campanula persicifolia alba grandiflora	...	Paul & Son, June 24—A.M.
Canna Madame Crozy	...	Paul & Son, May 28—A.M.
Carnation, Pride of Great Britain	...	H. J. James, June 24—A.M.
Cattleya Gaskelliana, Cooke's var.	...	M. S. Cooke, June 24—F.C.
,, intermedia Parthenia	...	Sir T. Lawrence, June 10—F.C.
,, Lawrenceana delicata	...	Baron Schroder, May 28—A.M.
,, ,, Vinckii	...	Baron Schroder, April 22—F.C.
Cattleya Mendelii Alfred Smee	...	A. H. Smee, June 10—A.M.
,, ,, Prince of Wales	...	F. Sander & Co., May 28—F.C.
,, Trianæ var. fulgens	...	H. B. Mildmay, Mar. 11—A.M.
,, ,, marginata	...	J. Laing & Sons, March 11—A.M.
,, ,, Tautziana	...	F. G. Tautz, March 25—A.M.
,, Warneri	...	M. S. Cooke, June 10—A.M.
Cinerarias strain	...	H. Cannell & Sons, March 11—A.M.
Cœlogyne tomentosa	...	R. J. Measures, May 13—A.M.
Convallaria majalis, Fortin's var.	...	E. Morse, March 25—A.M.
Crinum brachynema	...	J. Smith, June 10—F.C.
Cydonia japonica Moerloosei		J. Veitch & Sons, May 13—F.C.
Cypripedium cardinale, Vanner's var.	...	W. Vanner, Feb. 11—F.C.
,, Elliottianum	...	H. M. Pollett, Feb. 11—F.C.
,, Lathamianum	...	Ingram, Veitch & Sons, F. C. Tautz, Baron Schroder, Feb. 11—F.C.
,, niveum×	...	A. J. Hollington, June 10—F.C.
,, Numa×	...	J. Veitch & Sons, March 11—F.C.
,, porphyrochlamys	...	F. G. Tautz, Feb. 11—F.C.
,, Schomburgkianum	...	F. Sander & Co., March 11—B.C.
,, Volonteanum	...	F. Sander & Co., May 28—A.M.
Cytisus scoparius Andreanus		Sir T. Lawrence, J. Veitch & Sons, and Paul & Son, May 13—F.C.
Delphinium Alfred Kelway	...	Kelway & Son, June 10—A.M.
,, Autolycus	...	Kelway & Son, May 28—A.M.
Dendrobium Aspasia×	...	J. Veitch & Sons, March 11—F.C.
,, Bensoniæ alba	...	J. Cypher, May 28—A.M.
,, Falconeri delicata	...	J. Cypher, May 28—A.M.
,, Juno×	...	Sir T. Lawrence, Jan. 14—F.C.
,, lineale	...	J. Veitch & Sons, June 10—A.M.
,, Luna×	...	Sir T. Lawrence, Jan. 14—F.C.
,, MacCarthiæ	...	Mrs. Studd, May 28—F.C.
,, Macfarlanei	...	J. Veitch & Sons, Jan. 14—F.C.
,, nobile Burford var.	...	Sir T. Lawrence, Jan. 14—A.M.
,, signatum	...	Sir T. Lawrence, March 11—F.C.
,, Smilliæ	...	Sir T. Lawrence, March 11—B.C.
,, Wardianum Schroder's var.	...	Baron Schroder, March 25—F.C.
,, xanthocentrum×	...	Sir T. Lawrence, Jan. 14—F.C.
Deutzia candidissima fl.-pl.	...	W. C. Leach, March 25—A.M.
Disa tripetaloides	...	Sir C. W. Strickland, June 24—A.M.
Enkianthus campanulatus	...	J. Veitch & Sons, May 13—A.M.
×Epiphronitis Veitchii	...	J. Veitch & Sons, June 24—F.C. and B.C.
Gloxinia Agnes Cook	...	H. Cannell & Sons, June 10—A.M.
,, Empress of India	...	Sutton & Sons, May 28—A.M.
,, Mrs. J. Donaldson	...	J. Veitch & Sons, May 28—A.M.
,, Prince of Wales	...	Sutton & Sons, May 28—A.M.
,, Princess of Wales	...	Sutton & Sons, May 28—A.M.
,, strain New Netted	...	Sutton & Sons, May 28—A.M.
Helleborus colchicus coccineus	...	Paul & Son, Feb. 11—A.M.
Iris sindjarensis	...	Barr & Son, March 25—A.M.
Juniperus canadensis aurea	...	Paul & Son, May 13—A.M. J. Veitch & Sons, May 13—A.M.
Lælia anceps Schroderiana	...	Baron Schroder, Jan. 14—F.C.
,, purpurata Empress	...	J. Cypher, May 28—A.M.
×Lælio-Cattleya Canhamiæ	...	J. Veitch & Sons, June 24—A.M. [F.C.
,, ,, eximia	...	J. Veitch & Sons, June 24—
,, ,, Hippolyta	...	J. Veitch & Sons, March 25—F.C. [—F.C.
Lastrea f. m. cristata fimbriata		W. & J. Birkenhead, May 28
Lobelia Reine Blanche	...	J. Witney, June 10—A.M.
Lunaria biennis variegata	...	W. Cutbush & Son, May 13—A.M.
Lupinus Foxii	...	Kelway & Son, May 28—A.M.
Lycaste Skinneri regina	...	E. A. Roberts, Feb. 11—A.M.
,, ,, Young's var.	...	R. Young, March 11—F.C.
Masdevallia Courtauldiana	...	S. Courtauld, June 24—A.M.
,, leontoglossa	...	A. H. Smee, Feb. 11—B.C.
Mignonette, Garaway's double white improved	...	W. A. Garaway & Co, April 22—A.M.
Miltonia Bleui splendens×	...	F. Sander & Co., May 28—F.C.
,, vexillaria Fairy Queen	...	F. Sander & Co., May 28—F.C.
,, ,, Le Doux's var.	...	G. Le Doux, April 22—A.M.
Narcissus George Engelheart	...	Rev. G. H. Engelheart, April 22—A.M.
Nephrolepis exaltata plumosa		H. B. May, April 22—A.M.
Odontoglossum Galeottianum		T. Statter, June 10—A.M.
,, maculatum anceps	...	— Atkinson, May 13—F.C.
,, Pescatorei melanocentrum	...	F. G. Tautz, March 11—A.M.
,, ,, var. Mrs. G. W. Palmer	...	G. W. Palmer, April 22—A.M.
,, ,, Tilgate var.	...	J. W. Nix, June 10—A.M.
,, ramosissimum	...	A. H. Smee, Feb. 11—F.C.
,, triumphans aureum	...	A. H. Smee, April 22—F.C.
Oncidium Larkinianum	...	J. Larkin, March 11—A.M.
,, roraimense	...	F. Sander & Co., May 28—A.M.
Pæonia conchiflora	...	Paul & Sons, May 28—F.C.
Pæony Beatrice Kelway	...	Kelway & Son, May 13—A.M.
,, Berlioz	...	Paul & Son, June 24—A.M.
,, Daubenton	...	Paul & Son, June 24—A.M.
,, Duchess of Teck	...	Kelway & Son, June 10—A.M.
,, Princess May	...	Kelway & Son, June 10—A.M.
,, Sainfoin	...	Kelway & Son, June 10—A.M.
,, Stanley	...	Kelway & Son, June 10—A.M.
Pansy Eynsford Yellow	...	H. Cannell & Sons, May 13—A.M.
Pelargonium Midsummer	...	J. R. Pearson & Sons, June 24—A.M.

Pelargonium Prince Henry ...	F. Perkins, May 28—A.M.
Phaius Cooksoni ×	N. Cookson, March 11—F.C.
,, Humbloti alba	Baron Schroder, June 10—F.C.
Philadelphus inodorus ...	W. C. Leach, March 25—A.M.
,, microphyllus	Paul & Son, June 24—F.C.; J. Veitch & Sons, June 24—F.C.
Phœnix Rœbelenii	Sander & Co., March 11—F.C.; Jas. O'Brien, March 11—F.C.
Polyanthus terra-cotta ...	R. Dean, April 8—A.M.
Primrose Oakwood Blue ...	G. F. Wilson, April 8—A.M.
,, Red Gauntlet	G. F. Wilson, April 22—A.M.
Primula Sieboldi alba magnifica	Ryder & Son, May 13—A.M.
,, Bruce Findlay	Ryder & Son, April 22—A.M.
,, Distinction	Ryder & Son, April 22—A.M.
,, sinensis Eynsford Pink...	H. Cannell & Sons, Jan. 14—A.M.
,, Eynsford Red	H. Cannell & Sons, Jan. 14—A.M.
,, Her Majesty	H. Cannell & Sons, Jan. 14—A.M.
Pteris serrulata gloriosa ...	H. B. May, Jan. 14—A.M.
Pyrethrum Carl Vogel... ...	Kelway & Son, May 28—A.M.
,, Clemence	Kelway & Son, May 28—A.M.
Pyxidanthera barbulata ...	Paul & Son. April 8—A.M.
Rhododendron Ajax	J. Veitch & Sons, June 24—F.C.
,, Williamsi	B. S. Williams & Son, April 22—A.M.
Rose (H.P.) Crimson Globe ...	W. Paul & Son, May 28—F.C.
,, Hybrid	Lord Penzance, June 10—F.C.
,, J. D. Pawle	Paul & Son, June 24—A.M.
,, Marchioness of Lorne ...	W. Paul & Son, June 24—A.M.
,, Mrs. Paul...	Paul & Son, June 24—A.M.
Sarcopodium Dearii	Baron Schroder, May 28—A.M.
,, Godseffianum (provisionally named)	F. Sander & Co., June 24—F.C.
Sobralia macrantha var. rosea	Mrs. Studd, June 10—F.C.
Syringa Madame Kreuter ...	Paul & Son, May 13—F.C.
Trillium discolor atratum ...	J. Veitch & Sons, March 25—A.M.
Xerophyllum asphodeloides ...	Paul & Son, June 10—A.M.

THE FRUIT AND VEGETABLE COMMITTEE.

Apple Armorel	C. Ross, March 25—A.M.
Broccoli Veitch's Model ...	W. C. Leach, May 13—F.C.
Strawberry Auguste Nicaise...	J. Smith, April 8—A.M.
,, Crescent Seedling ...	Paul & Son, June 24—A.M.

BY THE ROYAL BOTANIC SOCIETY.

*** *B.C.: Botanical Certificate; F.C.: Floricultural Certificate.*

Abies excelsa mutabilis ...	J. Veitch & Sons, May 14—B.C.
Acer japonicum laciniatum ...	J. Veitch & Sons, May 14—B.C.
,, Prince Hendjery ...	Paul & Son, May 14—B.C.
Aërides Sanderianum	F. Sander & Co., June 11—B.C.
Amaryllis The Champion ...	J. Veitch & Sons, March 26—F.C.
,, Der Kaiser	J. Veitch & Sons, March 26—F.C.
,, John Heal	J. Veitch & Sons, March 26—F.C.
,, Olivette	J. Veitch & Sons, March 26—F.C.
Angræcum citratum var. giganteum	W. F. Darnell, March 24—B.C.
Arisæma filiforme	B. S. Williams & Son, June 11—B.C.
Auricula Magpie (Horner) ...	J. Douglas, April 23—F.C.
Azalea J. T. D. Llewelyn ...	C. Turner, May 14—F.C.
Batemannia Wallisii	F. Sander & Co., June 11—B.C.
Begonia Davisii variegata ...	R. B. Davis, June 11—F.C.
,, Duchess of Portland ...	J. Laing & Sons, May 14—F.C.
,, Duke of Sutherland ...	H. Cannell & Sons, April 23—F.C.
,, Golden Queen	H. Cannell & Sons, June 11—F.C.
,, Honble. Frances Boscawen	H. Cannell & Sons, June 11—F.C.
,, Lord Salisbury	H. Cannell & Sons, April 23—F.C.
,, Mammoth	J. Laing & Sons, May 14—F.C.
,, Marchioness of Headfort	J. Laing & Sons, June 11—F.C.
,, Miss French	J. Laing & Sons, June 11—F.C.
,, Mrs. Streatfield ...	H. Cannell & Sons, June 11—F.C.
,, Princess Victoria ...	J. Laing & Sons, May 14—F.C.
,, Profusion	J. Laing & Sons, May 14—F.C.
,, Rosy Morn	J. Laing & Sons, May 14—F.C.
,, Sunset	J. Laing & Sons, June 11—F.C.
,, Viscount Wolse'ey ...	J. Laing & Sons, June 11—F.C.
Bertolonia Souvenir de Gand	B. S. Williams & Son, June 11—B.C.
Caladium Gaspard Crayer ...	J. Laing & Sons, May 14—F.C.
,, Mrs. H. Veitch ...	J. Laing & Sons, May 14—F.C.
Campanula persicifolia alba grandiflora	Barr & Son, June 11—F.C.
Canna Madame Crozy... ...	Paul & Son, June 11—F.C.
Carnation Madame A. Warocqué	J. Laing & Sons, April 23—F.C.
Cattleya Brymeriana	F. Sander & Co., June 11—B.C.
,, Mendelii albens	G. T. White, May 14—B.C.
,, Alfred Smee	A. H. Smee, June 11—B.C.
,, Hackbridgensis	A. H. Smee, June 11—B.C.
,, Mossiæ decora	B. S. Williams & Son, June 11—B.C.
Cattleya Mossiæ Measuresiana	F. Sander & Co., June 11—B.C.
,, ,, Reineckiana pallida	H. Low & Co., June 11—B.C.
Cineraria Gem	J. James, March 26—F.C.
Clivea Ambroise Verschaffelt	B. S. Williams & Son, April 23—F.C.
,, cruenta	B. S. Williams & Son, April 23—F.C.
,, Meteor	B. S. Williams & Son, March 26—F.C.
,, Stansted Beauty ...	J. Laing & Sons, March 26—F.C.
Cyclamen Duke of Fife ...	St. George's Nursery Co., March 26—F.C.
Cypripedium Aylingii × ...	E. Ayling, June 11—B.C.
,, californicum	June 11—B.C.
,, Elliottianum	H. Low & Co., May 14—B.C.
,, volonteanum	F. Sander & Co., June 11—B.C.
Cytisus scoparius Andreanus	J. Veitch & Sons, March 14—B.C.; Paul & Son, March 14—B.C.
Delphinium Alfred Kelway ...	Kelway & Son, June 11—F.C.
,, Evelyn Kelway	Kelway & Son, June 11—F.C.
,, Horace Kelway	Kelway & Son, June 11—F.C.
Disa tripetaloides	J. O'Brien, May 14—B.C.
Epidendrum Randii	F. Sander & Co., June 11—B.C.
Epiphyllum Russellianum var. Gaertneri	B. S. Williams & Son, March 26—F.C.
Gloxinia Mrs. J. Donaldson ...	J. Veitch & Sons, May 14—F.C.
Iris aphylla Bridesmaid ...	J. Laing & Sons, June 11—F.C.
,, variegata Darius... ...	Barr & Son, June 11—F.C.
Juniperus canadensis aurea ...	Paul & Son, May 14—B.C.; J. Veitch & Sons, May 14—B.C.
× Lælio-Cattleya Hippolyta ...	J. Veitch & Sons, March 26—B.C.
Lunaria biennis variegata ...	W. Cutbush & Sons, May 14, F.C.
Mignonette Garaway's double white improved	W. A. Garaway & Co., April 23—F.C.
Miltonia Bleui splendens ...	F. Sander & Co., June 11—B.C.
Myosotis rupicola	Paul & Son, May 14—F.C.
Narcissus Madame de Graaff...	Barr & Son, April 23—F.C.
,, Mrs. G. Cannell	Barr & Son, April 23—F.C.
Nephrolepis caudata compacta	J. Veitch & Sons, May 14—B.C.
Odontoglossum Galeottianum	J. Statter, June 11—B.C.
Oncidium crispum Rothschildianum	F. Sander & Co., June 11—B.C.
,, Larkinianum	— Larkin, March 26—B.C.
,, roraimense	F. Sander & Co., June 11—B.C.
Pæony Duchess of Fife ...	Kelway & Son, June 11—F.C.
,, Duchess of Teck	Kelway & Son, June 11—F.C.
,, Duke of Clarence ...	Kelway & Son, June 11—F.C.
,, Emily Kelway	Kelway & Son, June 11—F.C.
,, Mrs. S. Low	J. Laing & Sons, April 23—F.C.
,, Princess May	Kelway & Son, June 11—F.C.
,, Sainfoin	Kelway & Son, June 11—F.C.
,, Stanley	Kelway & Son, June 11—F.C.
,, Triomphe de Milan ...	J. Laing & Sons, April 23—F.C.
Papaver Brilliant	T. S. Ware, June 11—F.C.
,, orientale	T. S. Ware, June 11—F.C.
,, Prince of Orange ...	T. S. Ware, June 11—F.C.
,, Royal Scarlet	T. S. Ware, June 11—F.C.
Pelargonium Duchess of Fife	D. Phillips, April 23—F.C.
,, Empress of India ...	J. & J. Hayes, May 14—F.C.
Phaius Humblotii	F. Sander & Co., June 11—B.C.
,, ,, alba	F. Sander & Co., June 11—B.C.
Phœnix Rœbelenii	F. Sander & Co., June 11—B.C.
Phyllocactus brilliant... ...	J. Veitch & Sons, May 14—F.C.
,, exquisite	J. Veitch & Sons, May 14—F.C.
Primula Sieboldi alba magnifica	Ryder & Son, April 23—F.C.
,, Bruce Findlay	Ryder & Son, April 23—F.C.
,, Harry Leigh	Ryder & Son, April 23—F.C.
,, lilacina marginata ...	T. S. Ware, April 23—F.C.
,, Ruby Queen	Ryder & Son, April 23—F.C.
,, Mrs. Ryder	Ryder & Son, April 23—F.C.
Rhododendron The Queen ...	J. Veitch & Sons, May 14—F.C.
Richardia Elliottiana	Knight, May 14—B.C.
Rose The Queen	W. Paul & Son, May 14—F.C.
Saxifraga McNabiana	J. Laing & Sons, June 11—B.C.
Syringa alba grandiflora ...	Kelway & Son, May 14—F.C.
Tulipa elegans alba	Barr & Son, May 14—F.C.
,, Kaufmanniana	Paul & Son, March 26—B.C.
Trollius caucasicus auranticus	T. S. Ware, May 14—F.C.
Xerophyllum asphodeloides ...	Howes, June 11—B.C.

A QUIET RETREAT.

Science in this country, when not associated with business, is poorly rewarded. The delights of its pursuit are considered a sufficient compensation for the expenses connected with midnight oil and other requisites. It is, however, gratifying when we find an exception, and specially gratifying is it to find that a man so highly honoured for his work, wherever the English language is spoken, as Sir Richard Owen should have, by the favour of the Queen, been put in possession of a residence (fig. 1, p. 9) which might well realise the *beau-ideal* of a busy man.

Sir Richard's cottage is in Richmond Park, just within the Sheen Gate, enjoying a wide view over pasture and copse, and having at the back a large garden—a veritable garden of delight. Its plan is simple, consisting merely of a large lawn surrounded by herbaceous borders, backed up by shrubs, and tailing off into wilderness walks. On the lawn are fine specimens of the Corsican Pine and of the Hemlock Fir, a good Beech, and a noble Plane. The borders are full of old-fashioned herbaceous plants, Irises, Pæonies, Daffodils, and what not. Darwin's Berberis was all aglow when we saw the garden, and the air was heavy with the perfume of Lilac. Straight walks are not eschewed where a straight walk is permissible, and if it please not, there are plenty of sinuous paths through a wilderness garden which give the necessary variety. Traces of the owner's proclivities may be seen here and there in the shape of grotesque-looking fossils, skulls, and bones, which, half hidden in the shrubs and long grass, look quaint and excite interest without a tinge of unpleasant suggestion. Close by is the garden of Sir Edwin Chadwick, another veteran in the cause of science, and in his garden is a stone Pine, P. pinea, with one of those burrs on its branches which excite so much curiosity.

PLANTS AS THEY GROW IN NATURE.

I do not so much wish to advocate any particular side of the question, as to give a few jottings from notes made and observations taken some years ago while engaged in Coffee and Cinchona planting in Southern India, on the habitats of some plants grown in English glass-houses, and the natural conditions under which they were found growing in a wild state. At the outset, I may, perhaps, be allowed to state, that I consider the article which appeared in the *Gardeners' Chronicle* of May 3, 1890, from Mr J. A. Gammie, with reference to the natural conditions under which the Cymbidium eburneum and other Orchids are found in India, an extremely opportune and suggestive one; and I most cordially agree with the Editor's footnote, that the thanks of all Orchid growers are due to Mr. Gammie, and in the hope that others similarly placed will favour us with their observations on plants as they grow in Nature. This, I venture to think, if pursued with care and persistency, might in time become a great factor in increasing our knowledge with regard to the proper mode of cultivating many exotic plants under artificial circumstances.

Mr. Gammie's remark, that "many plants appear to have accommodating constitutions, and are found growing equally well at widely different altitudes," —which means, of course, widely different temperatures—is a fact which is beyond dispute; but as this fact does not come very strikingly, perhaps, under the notice of the English gardener in connection with the flora of his own country, it is somewhat hard of belief; and hence, to my mind, the very great value to be attached both to Mr. Gammie's communication and the Editor's footnote.

When an Orchid or any other plant is found not to affect a wide range of altitude, then, when this is known, its artificial cultivation becomes, comparatively speaking, a matter of ease; but when it is proved that a certain plant is found in a natural state, growing at widely different altitudes, and consequently in widely different temperatures, say, as widely different as the stove and the greenhouse, then perhaps it should be the aim of the English gardener to cultivate the plant in the much lower temperature.

As a plant that seems equally at home under vastly diverse conditions, I may instance the Pteris longifolia. This Fern I have seen growing on the inside of the walls of deep wells at Calicut and Cananore on the Malabar Coast, within 50 yards of the sea; on the Poonoor Ghaut, Nilgiri Hills, at an elevation of 4000 feet; and on the Koonda Mountains, Nilgiri Range, at an elevation of 6500 feet above sea-level, the difference in the mean annual temperature between the highest and lowest localities being, probably, not less than 40°. Another plant, Gloriosa superba, was a common Creeper on the Coffee estates in the Wynaad district of Malabar, and was frequently found covering the Coffee bushe

with it splendid blossoms on plantations that had not been carefully weeded. It was usually found at an elevation of 3000 feet; but, much to my surprise, I once found it growing in great abundance on the arid plains of Tinnivelly, but here it had abandoned its trailing habit, and appeared as a stocky plant of about a foot in height, at the same time covered with richly-coloured blossoms. The difference in temperature between the two places named above is immense; and still more, the rainfall in the Wynaad amounts to nearly 100 inches annually, while on the plains of Tinnivelly the fall does not reach more than 25 inches, and in some seasons it is very much less.

Lilium neilgherrense is a plant which, although not affecting a very great range of altitude, yet presents one or two peculiarities with reference to the natural conditions under which it is found in its wild state. Complaints are often heard in England about the difficulty of growing this Lily, and it is certainly not often that one sees it in this country in anything like the freshness of beauty that it invariably presents in its native country. Peat, leaf-mould, silver-sand, and well-rotted cow-manure, well mixed together, is the usual compost recommended in the cultivation of this bulb in this country, and nothing more is said with regard to watering than is advised for the pot-culture of any other Lily. Now, the soil in which the plant is always found growing in a wild state, peat, sand, and, of course, manure, are altogether absent, decayed leaf-mould being nearest to that which it affects; and, as to water, I spent several years of my life on the Nilgiri Hills, and I never saw this Lily grow in any other position than on the face of cliffs in crevices, where the soil was a vegetable mould, and where the water was oozing from and streaming down the face of the cliffs, keeping the soil in which the plants grew in a constant state of puddle, and this for a duration of from four to five months, or while the effects of the rainy season lasted; after which the soil became dust-dry, and remained so for the rest of the year. With reference to its artificial cultivation in this country, all this would, I imagine, point to the necessity of growing the bulb in a purely vegetable soil of a light nature, and supplying it with an abundance of water during its period of growth and flowering, either by placing the pots in saucers filled with water, or raised so that the evaporation at least might reach the roots.

The western portion of the Nilgiri plateau alone is within the influence of the south-west monsoon, which begins in June and ends in September. The eastern side being dependent for its moisture to the north-east monsoon between October and December, and the Lily being common to both portions of the plateau, of course flowers at different seasons; but the soil and situations in which it is found are identical. From this last-named circumstance, I presume that it would be no difficult task for the English gardener to have this Lily in bloom at different seasons of the year, or indeed all the year round.

Osmunda regalis.—This Fern is found in the Wynaad, at an elevation of about 2500 feet, and at Pycarra, on the Nilgiris, at an elevation of 6500 feet, growing equally tall and luxuriantly at both elevations. In the former locality it is found in great abundance on the banks of the River Cubbany, and close to the water's edge when the stream is at its lowest. The south-west monsoon breaks about the middle of June, and ends about the middle of September. From the very heavy rainfall in the region of the western ghauts, the river rises some 30 feet above its low-water mark, and flows very full for a considerable time after the south-west rains have ceased; the Osmunda is, therefore, submerged to a depth varying from 20 to 30 feet for a period of three months annually, and it is quite another month or six weeks before the water falls below the line on which the Fern finds a home. When the water falls below this line, admitting the sun's rays to crowns and roots, the fronds appear as if by magic, and the banks of the river are quickly clothed with a mantle of the most lovely green imaginable. At the higher elevation the Osmunda undergoes a similar submersion, but not for so long a period. Of course, we have the Osmunda regalis with us as a native; but supposing we had not, and the plants were sent to us for the first time from South India, with the above account of the conditions in Nature under which it was found growing, where is the gardener who, in attempting the artificial cultivation of the plant, would strive to imitate these conditions, and submerge his plants in a tank annually for a period of four and a half months? This may, of course, be termed an extreme case, but it might, perhaps, be as well to ventilate all sides of this extremely interesting question.

The Torenia asiatica is another plant which is found displaying equally luxuriant growth and floriferousness in Malabar, at an elevation of 2500 feet, and 7000 feet on the Nilgiris. I could easily give many other instances of a like nature, but the above may suffice for the present. I am induced, however, to offer another with reference to a plant not indigenous to India, viz., the Bougainvillea glabra, which is found in gardens at the sea-level all along the Malabar coast, growing luxuriantly, and literally drowning with its bright-coloured bracts the trees against which it is planted. I have grown the same plant in the same province of Malabar at an elevation of 3500 feet, with the result that the flowers or bracts were somewhat paler, and the plant assumed a bush-like form from which it never varied, nor broke into its normal trailing habit; so that in the case of the Bougainvillea, an increase in elevation had the effect of dwarfing the habit of the plant, while in the case of the Gloriosa superba, a decrease in elevation had a similar effect.

I would like briefly to draw attention to some notes of observations I made while sojourning in Malabar, and touching the remark of the Director of the Royal Gardens, Kew, in the *Gardeners' Chronicle*, of January 4 last, to the effect that "plants in Nature do not grow where they like, but where they can." The tract of land called the Wynaad, in Malabar, lies between the crest of the Western Ghauts on the west, and the Mysore frontier on the east, and consists of two typical districts called locally, Bamboo and Forest respectively. The flora of these two districts, although each forming part of the whole, is of such marked and wonderful dissimilarity, as to at once arrest the attention of the

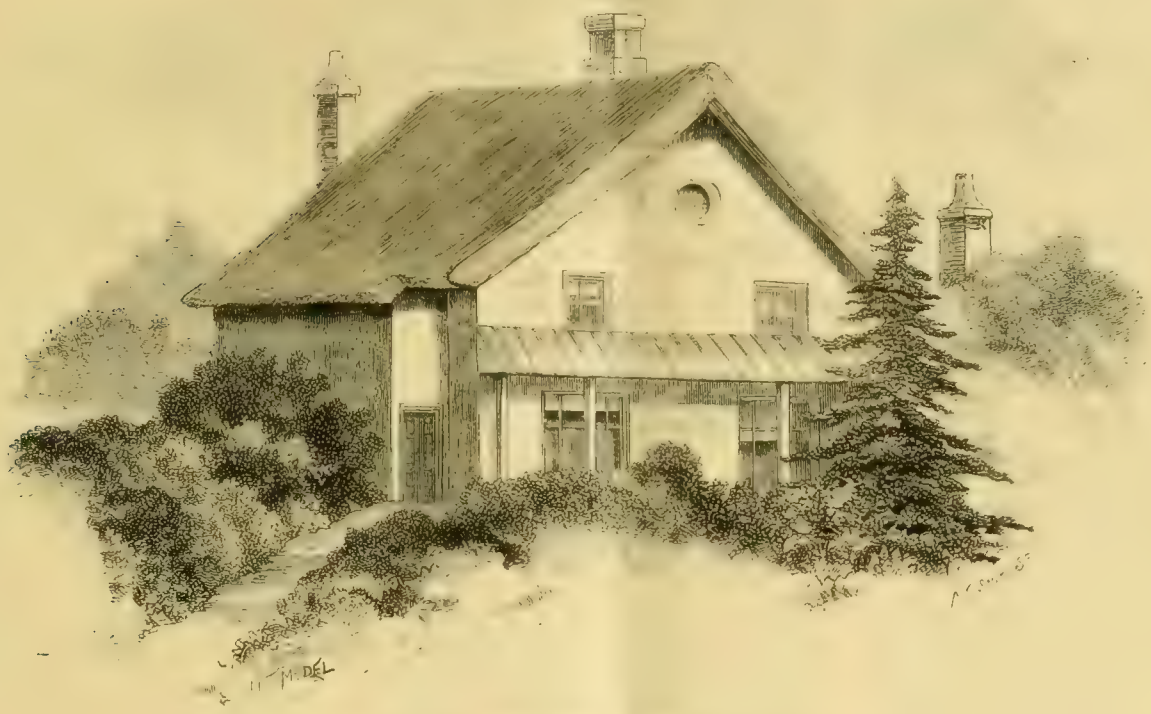


Fig. 1.—Sir Richard Owen's Cottage. (see p. 8)

stranger who happens to possess an interest in such things. The line of demarcation is so clearly fixed and so abrupt that there is no mistaking it, the one not being, as it were, dove-tailed into the other, and the difference of elevation and rainfall, although appreciable, was never to my mind sufficient to account for the total dissimilarity of the flora. In the Forest tract the trees and shrubs are evergreen, in the Bamboo tract they are deciduous. Birds and animals of innumerable genera exist to carry the seeds from one tract to another, and yet they are never found mixed. The line is hard and fast, and will remain so as long as Nature is left to herself. The beautiful little deciduous Fern, Adiantum lunulatum, found in the rainy season clothing with a garment of loveliness, half decayed trees, rocks, boulders, and the rough and unsightly places of the Bamboo tract, stops abruptly when it reaches the magic line. The graceful Davallia tenuifolia which, in many places, clothes the banks and roadsides of the Forest tract with its elegant fronds, never intrudes among its ferny neighbours of the Bamboo section, although growing within sight of each other. The Gloriosa, Cissus, Hoya, and a thousand other plants common to the Bamboo soil, are never, by any chance, seen on that of the Forest, and, as I have already said, I cannot believe that all this is on account of the difference of altitude or rainfall, of both combined, for neither of these are so much greater on the one side than the other to satisfactorily account for the phenomenon, nor do I think the greater shade of the Forest tract over that of the deciduous Bamboo region sufficient to account for it, because, along the banks of the rivers that intersect the Bamboo region, the trees are all evergreen, consisting of the Wild Mango, Mangifera indica, and other such trees, and yet not a single Fern, plant, or shrub, peculiar to the Forest region, is to be found along the banks, although the rivers all take their rise, and flow for a considerable distance through the evergreen forest before reaching the Bamboo tract. How, then, may I be allowed to ask, can it be said in truth, that "plants in Nature do not [necessarily. ED.] grow where they like, but where they can?" As I consider in further proof of the erroneousness of this statement, I would mention another very curious fact in connection with this same Bamboo district of Malabar, namely, that at intervals throughout the whole region, reaching even to the drier confines of the Mysore frontier, small patches of forest are to be found of from 1 to 3 acres, exactly similar to the forests to the west, and consisting of exactly the same kinds of trees, shrubs, and plants. Each clump stands out in its living green, like an oasis in the desert, to gladden the eye of the traveller during the hot months, when the Bamboo clumps are robbed of half their gracefulness by the fall of the leaf, when the surrounding jungle presents nothing but leafless trees and blackened earth. Yet, marvellous to say, not a single plant or tree of the Bamboo jungles is to be found within these sacred woods — for sacred they are considered by the natives, each containing an idol set up in a little clearing in the centre, kept scrupulously neat and clean by the attendance of the officiating priest, who lives in a neatly built house close by, surrounded by cultivated plants of the Orange, Jack Fruit, and Banana. These patches, evidently a source of mystery to the native mind for ages, hence their association with supernatural agencies, are, perhaps, as much a subject of mystery to the people of the west at the present day. Soil may possibly be an active agent in the bringing about of such curious results in Nature, but I cannot think it is the sole one any more than I can concur in the dictum that "plants in Nature do not grow where they like, but where they can." *Hortus.*

TRADE NOTICE.

THE business of Mons. L. Paillet of Chatenay-par-Sceaux (Seine), France, which was established by his father in 1827, and taken over by him in 1860, has now been taken over by his son, Mons. Louis Paillet, who was last month married to Mademoiselle Alice Blouin.

ROSES.

THE remarks by "Wild Rose," p. 764 of the last volume, on the Rose prospects of the present season are very interesting to Rose growers generally, for we do like to know how it fares with other growers in other districts. Our own garden is too near London to compete favourably with those 15 miles or more distant, but we get very fair results some seasons, and this year I am pleased to say we have one of the best Rose seasons I ever knew. North and east winds have been frequent and keen, and large beds of Roses have been exposed to both; one bed containing upwards of 200 plants is partially sheltered from both directions, and the only difference I can perceive in it is that the sheltered plants produce their flowers about six days earlier than the others; as regards vigour and health, they are all equal.

Our garden is not in the best part of Essex, and perhaps not the worst. The county is well to the fore in Rose growing—even the garden of Roses, Herts, does not surpass it, as we have Mr. Pemberton at Havering, and the redoubtable growers, Mr. B. R. Cant, and Mr. Frank Cant, in Colchester—growers who have in past seasons won the highest positions as exhibitors. They have for the present season scored a success by winning 1st and 2nd prizes in the classes for seventy-two and forty-eight blooms respectively at the York Floral Fête on the 18th of last month. It would not be fair to mention this success for Essex, and omit any mention of the remarkable boxes of Tea Roses exhibited by Mr. Prince, of Oxford. The Oxford Roses won three 1st prizes; a box of twelve various, and another of Comtesse de Nadaillac were marvellous examples of good culture. The Essex Roses were strong in hybrid perpetuals. Notwithstanding the very great improvement in the hybrid perpetuals, it is nothing compared to what has taken place in the Teas during the last quarter of a century, and it has been greatest during the latter half of that period. More than thirty years ago, some good Tea Roses were in cultivation, but new ones were few. When Souvenir d'Elise (Marest) was figured in the *Florist* for the year 1856, Messrs. Standish and Noble, of Ascot, who introduced it, gave a list of seventeen other new Roses, and not one Tea figured amongst them, if we except Gloire de Dijon, which is in the list as a Bourbon. Now the varieties of new Tea Roses are so numerous that the difficulty of selection has become very great. Another matter of some interest to exhibitors of Roses is the favour accorded to them against hybrid perpetuals by some judges. I have heard judges say that certain collections of cut blooms should be placed first "because they contained the larger number of Teas." Probably the larger number of rosarians would prefer Tea Roses; but when it comes to judging one collection of Roses against another, and they consist of hybrid perpetuals and Teas, it seems but right that they should be judged on their intrinsic merits alone. If a certain H.P. as a Rose is better than a given Tea, let it win. It is not good policy to give an exhibitor the chance to say, "My Roses were the best, but I lost my chance of winning the prize because my opponent had the larger number of Teas." It is more satisfactory to managers of shows, exhibitors, and judges, when the exhibition is large enough, to classify the Roses, and match Teas against Teas, and H.P.'s against H.P.'s. Of course when one has to deal with seventy-two distinct Roses or forty-eight triplets, it may be necessary not to define any limit as to classes, and trust to the judges arriving at a satisfactory conclusion. Many persons have an idea that Tea Roses require a special system of culture. They are certainly not so hardy, but in other respects, as garden Roses, they do not present any difficulty. The foundation of good culture consists in the preparation of the soil. It is no use saying this or that kind of soil is necessary for them; people have to do with the ground of which their garden is composed. I have grown excellent Tea Roses on light soil over gravel, and as good on rather heavy loam, with much less labour, as the latter class of soil is better adapted for Rose culture, and the plants stand drought in summer much better. One advantage of light soil is, that can it be dug over or trenched in almost any kind of weather wet or dry, whereas clay soils are made almost unworkable by digging or trenching them over in wet weather. If the bed or border where the Roses are to be planted is not prepared as it ought to be, subsequent careful attention will, to some extent at least, be lost upon them. Many persons cannot order Tea Roses by the hundred, though they would like to. To such I would advise purchasing, say, twenty-five of the very best varieties; plant them well, and at the same time plant a few hundreds of seedling Briers—one year old plants. The seedlings are of small size, but they will be quite strong enough for budding by July the following season; and the buds ought to be inserted in the Brier stem close to the surface of the ground. In all cases a mulching of decayed manure over the surface of the ground is beneficial. *J. Douglas, Ilford.*

TWO DISTINGUISHED GARDENERS.*

THERE is a pleasant and wholesome "out-of-doors" sort of interest about Mrs. Houstoun's reminiscences of her father, the late Edward Jesse and his intimate friend, the Rev. John Mitford, who was for some years editor of the *Gentleman's Magazine*. It is literally full of horticultural interest, for its author, like her principal characters, has had from childhood a genuine passion for gardening. Mrs. Houstoun has not made an unscrupulous bid for popularity by raking together the scandals and spicy anecdotes current half a century ago; her book therefore will probably not have an extensive circulation, but it will none the less be perused with delight by everyone who takes an interest in the elevating studies of natural history.

Mrs. Houstoun's memories are pleasant memories. We have, at the outset, a pretty little pen-picture of her father's small cottage almost within the boundaries of Bushey Park, and of the view, from that house, of "the gnarled old Hawthorns which at one time grew thickly upon the well-cropped greensward, and in the spring-time the scent—bitter-sweet—of millions of snowy blossoms which wafted to the open windows, and mingled with the rich perfume of gigantic red double Stocks." But Bushey Park has, alas! become greatly altered since the time when Mr. Jesse was "Deputy-Surveyor of the Royal Parks and Palaces." In addition to the royal parks and palaces, the gardens appertaining to those palaces were under the *surveillance* of Mr. Jesse, who was fortunate in securing the services, as head and landscape gardener, of "a man as remarkable for taste and practical knowledge of his profession as he was for his morose disposition and singular bearishness of manner." But Johnstone, who was a Scotsman, was by no means cantankerous with those whose love for flowers and gardening was genuine; it was apparently upon pretenders and garden thieves that the gentleman from the land of oatmeal and "whuskey" lavished his scorn and contempt; but he was only one example of the gardeners of fifty or sixty years ago—in fact, perhaps, as well as in fiction. Johnstone's mother-in-law described the morose and canny Scot in the following words:—"Well, Sir, he ain't a drinking man; no, nor he ain't a wife-beater, nor one of them swearing, passionate fellows; but he makes her a tedious husband." But then we must remember that mothers-in-law are dangerous people, with strong prejudices! Excursion days appear to have been the periods when Johnstone's moroseness culminated a sort of temporary madness, for it was on such occasions that 'Arries and 'Arriets desecrated his treasured gardens.

* John Mitford and Edward Jesse, "*Sylvanus Redivivus*," by M. Houstoun. London: Sampson, Low & Co.

And who indeed cannot sympathise with the poor man? Mrs. Houstoun asserts, and we quite believe her, that if her father had sentenced the rifler of even a single flower to three months' imprisonment and a severe flogging, Johnstone would have considered the punishment scarcely adequate to the enormity of the offence committed. It is sad to relate that Mrs. Houstoun herself was the person for whom a certain young officer made nightly and successful raids upon the flower-beds, in spite of the watch of Johnstone and his myrmidons; and it is still sadder to inform our readers that the maiden who fired this youthful Mars with the spirit of adventure, threatened to betray him if he did not at once confess his thefts unto her father! True, there was "the fun of the thing—the delight of outwitting old Johnstone, and the intoxication—delicious while it lasted—of success!"

Mr. Jesse had sometimes to contend with serious and delicate difficulties. On one occasion the Duke of Clarence (afterwards William IV.) took it into his somewhat empty head to destroy at one fell swoop the magnificent old Elms which have for several centuries past stood, showing no single symptom of decay, on the mile and a half of public road that lies between Hampton Court and Kingston-upon-Thames. But for these "grand old giants," and a broad belt of ornamental trees and shrubs, this road would be painful in its dull formality. Mr. Jesse had an almost sacred veneration for old trees, and this determination annoyed him profoundly. He wrote a letter of remonstrance to the Duke, but this having no effect, he sent an official report of the intended act to the First Commissioner of Woods, and His Royal Highness's little game was nipped in the bud.

Of Mitford, whom Samuel Rogers, the poet, described as living for "trees and butter," and as "no more fit to be a parson that I am to be the Angel Gabriel," there are several exceedingly interesting and witty letters published in this volume of Mrs. Houstoun's. In nearly every one of them literature and gardening matters predominate. It was from him that our author learnt the mindfulness displayed by Charles I. to the embellishment of Hampton Court Gardens, and also that it was due to the better taste of Charles II. to convert them not only to their present style and form, but the planting therein of the famous Yew trees.

There are frequent references in Mitford's letters to Cutting—surely an appropriate name!—the nurseryman, and Carter the seedsman. Writing on June 1, 1855, he desired Mr. Jesse to obtain some bulbs of Lilium japonicum from Cutting, adding, "I have just finished a stove for foreign plants, and lighted the fire first to-day. I mean to sit under my own Palm trees, like sad Judea, only I sha'n't weep." And again, a short time afterwards:—"I am growing fastidious, and can't do without Myrtles in the open ground, so have transplanted a border of them. At present I prefer them to Victoria Reginas or Pauloneas [*sic*], or other things with hard names and gigantic leaves. That is all I have done in the department over which Adam first presided, and has been succeeded by Sir William Hooker and yourself." Mr. Mitford drops into French poetry, of which we can only quote the first verse:—

"Mon jardin est flétri,
Et tout le jour je crie
La pluie, la pluie, la pluie!"

Mr. Mitford goes into raptures over Daphne odora, the scent of which he thinks must be like that of the Houris in Mahomet's Paradise! And had we space we should like to have dwelt on the grateful and charming manner in which Mrs. Houstoun acknowledges her indebtedness to the versatile editor of the *Gentleman's Magazine* for a large portion of her knowledge of plants and gardening matters. But our limits are already exhausted. We must, however, claim a privilege, which is not only the property of the gardener, but also of the reviewer: and that is to grumble. Mrs. Houstoun's book contains neither index nor list of contents. The publishers, almost as much as the author, are to be blamed for this unpardonable oversight. But then the reviewer is compelled to read the book which he criticises; and in the present instance his time will not be unprofitably employed, for it is a most interesting work.

Orchid Notes and Gleanings.

CATTLEYA× KRAMERIANA, *Rchb. f.*

A flower of the above, which is a great rarity, has just been sent to Kew by Herr F. Kramer, Klein-Flotbeck, near Hamburgh. It was described as a supposed natural hybrid between C. Forbesii and C. intermedia. When compiling the "List of Garden Orchids" I had not seen it, and now I find it is quite different from any form I had seen before, and bears every appearance of being a natural hybrid from the species above-named. C. Isabella, Rchb. f., is also supposed to have the same parentage; but I have not seen it, and fear the plant was lost years ago. The segments are linear, subacute, of a delicate pink shade, a little over 2 inches long, and nearly half an inch broad. The lip is elliptical, three-lobed, 1½ inch across, the front lobe nearly square, obtuse, crimson-purple, with a little white, chiefly down the centre, the side lobes white, pink towards margin, and the nerves pale-buff. There are six raised keels on the disc. The lip is strongly stamped with the characters of C. Forbesii, while, in other respects, the flower much resembes C. intermedia, so that, I think, there can be little doubt of the plant's origin. The gradual recovery of these Reichenbachian types is a very fortunate circumstance. *R. A. Rolfe.*

Masdevallias at Messrs. Seeger & Tropp's.

At their nursery at 112, Lordship Lane, this firm has a brilliant display of those beautiful Orchids which, after having been slighted for a time, are again rising into favour. Many botanical species are here in bloom, but the show is made up of the varieties of M. Harryana, some of the plants having a score or so of blooms. M. H. Etincelle is a fine scarlet, with yellow eye; M. H. Kentish Fire, is of a glowing red; M. H. lilacina is white, washed with lavender; M. H. Georges Mantin is a very large and richly-coloured variety; M. H. conchiflora is violet, the flower shell-shape; M. H. miniata, reddish-vermilion; M. H. Ariadne, rich red; M. H. pudens, dwarf habit, and has purplish, shell-shaped flowers. The true M. H. "Bull's Blood" is also in bloom, and altogether over a score of distinct varieties of this beautiful species, and all selected for their fine qualities and dissimilarity. Some of the Chimæra section are also in bloom, and several of the smaller species with beetle-like flowers.

Odontoglossum Galeottianum, *Rich. & Gal.*

This is a very pretty but apparently an extremely rare Mexican Odontoglossum, allied to O. Cervantesii and O. nebulosum, though readily distinguished from all its allies by its linear and curved column-wings. It was described in 1845, from dried specimens collected by Galeotti on the Mexican Cordillera, near Oaxaca, at 7000 to 8000 feet elevation, where it was found growing on Oaks. It was noted in these columns in 1870, p. 39, by Prof. Reichenbach, as hitherto an obscure species, which Messrs. Hugh Low & Co. had obtained among plants of O. Cervantesii. In 1874 it is again mentioned (part i., p. 97), as having appeared with Mr. B. S. Williams. Now, after a long interval, the Liverpool Horticultural Co., have obtained it with plants of O. Cervantesii, and flowers have been sent to Kew for determination. A few days later came others, from C. Winn, Esq., Selly Hill, near Birmingham, and from Mr. W. Stevens, Walton, Stone, Staffordshire, without any account of their origin. An Award of Merit was given by the Royal Horticultural Society on June 10 last to a plant exhibited by T. Statter, Esq., of Whitefield, near Manchester, which plant, I believe, came from the Liverpool Horticultural Co.; so that we may hope the plant is once more established in cultivation. Reichenbach asks, "Can it be a hybrid between O. Cervantesii and O. nebulosum?" I believe not. The remarkable column-wings are totally unlike any other. We have one of Galeotti's original specimens at Kew, and I believe it is a quite genuine species. The flowers are white, with transverse reddish-brown bars at the base of the petals. The long white callus is covered with yellow streaks. In general character it stands near O. nebulosum. *R. A. Rolfe.*

Florists' Flowers.

THE FLORISTS' PINK.

The exhibition of Pinks at the Royal Aquarium during the present week denotes, on the part of those who are interested in this once favourite flower, an attempt to bring it again into favour in the south of England. When it is remembered that the Pink is hardy, easily grown, free to bloom, and fragrant—in this respect superior to any other of the hardy Dianthuses, and in comparison with which the Carnation is poorly favoured—the wonder is that so good a plant has fallen into comparative neglect. The white Pink finds a place in almost every garden; in some the old Anna Boleyn and The Paddington are to be seen, but the fine laced varieties are much neglected. As I write, there is before me a bunch of perpetual flowering Carnations and laced Pinks—it is a charming combination; but the perfume given forth by the petals of the latter quite pervades the room.

Whether the laced Pink came from Dianthus plumarius, as some assert, or, as others think, from D. carophyllus, is a matter I will not discuss; but of its beauty there can be no doubt, nor of its claims to recognition as a florist's flower.

Maddock, in his *Florists' Directory*, published in 1792—very nearly a century ago—gives a diagram of a laced Pink. I think it must be regarded more as an ideal flower than as one actually in cultivation at that day. The petals are of fairly good form, and neatly arranged; the lacing is perfect, but the petal edges are fimbriated, as, doubtless, all the laced Pinks in cultivation in Maddock's time were. Since that time the edges have become smooth, and quite rounded, also larger, broader, and more symmetrical; the fimbriated edge has disappeared, or, if still slightly apparent in a few of the oldest varieties, it is because they are retained for some very pronounced good qualities. The decline in the culture of the laced Pink is shown by the fact, that where Mr. Turner used to grow eighty or one hundred varieties, he now has only one-fifth or so of that number.

Nearly fifty years the properties of the Pink were laid down as follows:—"The petals of the flower should be round and smooth on the edge, and go well to the shoulders, to prevent them from being spade-shaped. The flower to be perfectly flat, except a crown formed with a few of the inner petals. No flower to contain less than twelve petals, the colour of the lacing to be well defined, the white ground to be clear and distinct. The lacing and eye or centre to correspond in colour; the lacing to be well laid on to the edge of the petal, and not to show a white fringe outside the lacing. The petals imbricating each other nearly, and showing the lacing distinct. The pod of the flower to be nearly straight, and not liable to burst, so that it will hold the petals close together, otherwise the flowers will show what the florists term an open throat, and not form a perfect round eye, which is a most essential requisite in a good flower." Herein is a statement of the properties that still holds good, and by which florists' Pinks should be judged at the present day.

A visit to the Royal Nursery, Slough, at the present time reveals the laced Pinks in fine condition. The collection is a select one, and it includes the finest varieties; they are Beauty, a small flower, but very free to cut from; Boyard, a large and full flower, beautifully laced with bright red: a grand variety, that laces well, and probably the best Pink in cultivation; Clara, smooth, fine, a beautiful petal,

regularly laced with reddish-purple; Empress of India, a very distinct variety, with rich deep lacing: extra fine; Eurydice and Excelsior, very good; Device, George White, Harry Hooper, rich dark lacing; Jessica, Minerva, and Modesty, a very early variety, with bright rosy-purple lacing; Mrs. Waite, small, but very pretty and free, and a charming border variety; and Rosy Morn, a very handsome Pink, with broad lacing.

It may be said that laced Pinks are very much alike, and this could be said of Roses and other flowers; but to the fancier there are striking differences which may not be so apparent to any one else. He knows these intimately, notes diversities of character that were passed by the latter. There are at Slough several raised beds, and in two or three the plants were put out in the autumn. In the case of two others, the plants were turned out of pots in the spring and planted; another was formed of plants taken direct from the cutting bed in August, and the strongest growth was to be found in these plants. The best compost for Pinks is loam mixed with road scrapings of a gravelly nature, which contains horse-droppings. If these can be collected in spring and laid by for a time, being occasionally turned, a very suitable ingredient for the Pink bed is secured. Road scrapings and grit mixed with the loam suit Pinks admirably. It need scarcely be said that top-dressings of manure in spring are highly beneficial.

As a matter of course, if perfectly-laced flowers are required, they must be shaded from the sun. At Mr. Turner's nursery small handglasses are employed for the purpose of shading, and over these some light metal shades. These are convenient and readily adjusted as required.

Mrs. Reynolds Hole Carnation.

A very fine lot of this popular Orange-coloured Carnation is now in flower in the tree Carnation house at the Royal Nursery, Slough. John Ball, who has had a life-long experience of Carnations, says that the most successful method of growing this variety is to have it in pots, for if it be planted out it is disposed to become gouty, that is to say the stems swell at points near the soil, an appearance which technically is called "gout," and suggests the probability of the plants taking up more sap through the roots than the plant is able to utilise. The plants are in 6-inch pots, and they stand on a stage in a well-ventilated house. *R. D.*

THE ORANGE GROVES OF FLORIDA.

(*Concluded from p. 768, vol. vii.*)

There are many beautiful things amongst the wild plants and shrubs, some of which are occasionally seen under cultivation, and are known to English gardens also. These include Lantana crocea, Ipomea Quamoclit, two or three species of Opuntia; three kinds of Fan-leaved Palms, one of which resembles Chamærops Fortunei very closely, and is very abundant; the others grow to heights of 20 feet and upwards, and are very pretty when seen growing in large clumps. Callicarpa purpurea forms a fine object, laden with its purple berries, when seen in quantity. Magnolias form large trees, but none was in flower at the time of my visit. Yucca filamentosa is occasionally found. Oranges grow wild in some parts, but they are sour and worthless. Quercus coccinea (the Scarlet Oak) is very fine in December, when its leaves put on their bright tints; and two or three other species, which are evergreens, make very fine trees in some parts of the country, but where the sand is of very poor quality they are generally found only as low bushes, while underneath them the sand, if too poor to grow grass, is covered with a finely cut leaved species of Lichen, similar to what we sometimes find on Apple trees in England. Opuntias also grow in these places, and their roots extend 10 and 12 feet horizontally a little below the surface, while the whole plant may not be more than 6 inches high. In the more moist parts some of the grasses are very pretty, but they were all dried up when I saw them, and in this state they are often mischievously set on fire, causing wholesale conflagration. A few acres of a Pine forest when on fire forms at night a weird and strange sight, but it is not often the trees take fire from the burning grasses, unless they have been previously injured or are decayed; but the grass and herbs are cleared off for a time only, to spring up again after the first shower. These forest fires do a great deal of harm by consuming all the decaying vegetable matter that would otherwise go to enrich the sandy land.

Many of the wild flowers of Florida are pretty, and belong chiefly to Compositæ. Very few plants wild in Britain are found, but Pinguicula vulgaris is abundant and beautiful. Two Ferns similar to Pteris aquilina and Osmunda regalis; a Drosera, which I believe to be D. rotundifolia; a Rumex resembling R. acetosa; a Polygonum, perhaps P. persicaria, and Sphagnum Moss, were all that I observed. Poa annua was nowhere to be seen, and Florida has none of our worst garden weeds, although I do not consider their own any improvement.

In the best vegetable grounds Cane-grass is very abundant, growing in the manner of our Couch-grass, but it is far stronger, the underground stems being as thick as lead-pencils, and the stems 18 inches in height. The creeping roots of this grass soon fill a piece of ground, if left alone for a time, when it is peaty and moist. Another species of grass has stems which ramify on the top of the sand, and grow at a great pace until they reach a length of 30 feet, rooting, and sending out side-shoots as they advance; and in moist places this soon covers the sand completely, if left undisturbed. A kind of grass, or Sedge, called the Sand-spur, which seeds very freely, is also very troublesome. It derives its name from the fruits, which are covered with sharp spines, and have an uncomfortable trick of getting into one's boots, and other like places, and never let go their hold without much persuasion.

The timber is chiefly composed of Pinus cubensis, a coarse-grained hard wood, containing a good deal of turpentine. Another species of Pinus, but which is very local, is P. inops var. clausa, whose cones remain on the trees a great number of years, and give them a very peculiar appearance. Taxodium distichum is abundant in some parts, and is always found growing in the water, or close to it; sometimes it may be found where the water is 3 or 4 feet deep, but in such positions it is generally in a state of decay. The curious excrescences, or outgrowths, from the root, called "knees" in England, are abundant, and are dangerous to small craft. This tree gives the largest timber of any that I saw, and some specimens measured from 10 to 12 feet in circumference, while the species of Pinus are not found of more than 5 feet in circumference. I measured a dead tree of P. cubensis which was 102 feet high, and 4 feet 8 inches in circumference at 4 feet from the ground. P. inops does not grow so tall or so large as this. Evergreen Oak is occasionally seen of large size, but the wood is so hard they cannot work it up. It is called Live Oak, to distinguish it from Quercus coccinea, a tree which is also occasionally seen of a good size. Other kinds of timber, Hickory, Ash, and Cherry, are found in some parts of Florida, and the Red Cedar, which is so much used for making pencils; but I found on inquiry that this is scarce in large size, although often used as posts for fencing.

The chief drawback to the trade of the country is the bad state of the roads, which are so loose that it is impossible to walk any long distance, and riding or driving becomes a necessity; and there are no means of improving this state of things, for not a stone of any kind is to be seen, and in the larger towns the footpaths are made of cement, and in some instances of shells, which are spread on the sand; the streets being sprinkled with a water-hose, which causes some little improvement.

Among wild animals, deer, rabbits, tortoises—called by the negroes "gofers"—wild cats, opossums, skunks, &c., are more or less abundant; and away in the swamps bears and panthers are occasionally met with; snakes are abundant, and for the most part harmless. Doves, turtle-doves, quails, butcher-birds, mocking-birds, hawks of several kinds, buzzards, water-turkeys, herons, woodpeckers, storks, &c., and some rarer kinds, are found in the uninhabited portions.

Anyone intending to settle in Florida as an Orange-grower, &c., should be previously well instructed in the first principles of horticulture, as the most of the persons engaged in Orange growing out there have vague ideas as to what is required, and it is difficult to get from them any definite information. On the whole, I found the country very enjoyable and healthy; but intending settlers should be very careful to get on the highest land, towards the centre of the State. A good amount of capital is required, in order to get good returns, as it costs quite 50 per cent. more for food than it does in England, and many other things are dearer than here. The work is mostly performed by negroes, who are paid at the rate of 5*s.* 2½*d.* per day, and they are not, as a rule, very industrious folk. There is a fair amount of English society in some parts, and a good many Americans from the North, who in many instances live in the Northern States during the summer. *W. H. Divers. Ketton Hall, Stamford.*

PLANT NOTES.

MITRARIA COCCINEA.

Now that a revival of old fashioned but beautiful plants has set in, Mitraria coccinea should not be forgotten, the bright, cheerful shade of scarlet of its tubular blossoms being a great gain in the greenhouse in June and July.

We saw small plants blooming nicely at Messrs. Wood & Son's nurseries, Maresfield, in a greenhouse abundantly ventilated. It was introduced from the island of Chiloe, by W. Lobb, in 1849, and was at one time found in most good gardens.

Coming from a moist, temperate region, its requirements are best met in a greenhouse which is moist naturally, or is kept so, and after flowering place the plant in a warm spot to mature its wood. It requires a compost of peat, leaf-mould, and loam, in about equal proportions, with plenty of sharp sand. Young plants are better in a compost of peat and leaf-mould and sand.

OLIVE OIL IN SPAIN AND TUSCANY.

In these days, when we are told that pure Olive oil is almost a thing of the past, and that Cotton oil to a great extent reigns in its stead, it is satisfactory to know that last year's Olive harvest in Barcelona was a good one, both as regards the quantity and quality of the fruit. Spanish oil, we are also informed, is becoming more appreciated than it was, and is much better able now than formerly to compete with the carefully prepared oils of France and Italy. This is simply because greater care is now bestowed on the sorting of the different qualities of Olives, in the elaboration of the oil, and in its classification afterwards, than formerly was given. In Tuscany, Leghorn is the centre of the Olive oil trade, and we are informed that the quality of Tuscan Olive oil still maintains a high reputation as a pure oil for table use.

There is, however, a considerable falling off in the quantity of oil exported from Leghorn. In 1882 and 1883 the exports amounted to 4813 tons and 4132 tons, respectively; whereas in 1887, the total export had fallen to 3811 tons, and in 1888, to 2109 tons. It is satisfactory to our national pride, however, to note that the proportion of the whole export which comes to England, shows a slight increase. The trade to the United Kingdom in Tuscan Olive oil is almost wholly in the hands of one huge English firm long estab-

lished in Leghorn, and four-fifths of the oil sent to Great Britain is sent direct to London in their own steamers. The best quality of Tuscan Olive oil, known in the trade as "Lucca oil," is shipped in casks, not in flasks, to one or two of the leading Italian warehousemen in London, and it is there bottled, labelled, and distributed through grocers to the public. The deception to which attention has been called of sending empty Florence flasks to England, to be filled here with any adulterated compound, or with Cotton-seed oil, pure and simple, still continues, but in a diminishing degree, so that it may be concluded that the public is getting alive to this particular imposition.

NURSERY NOTES.

MESSRS. HOOPER AND CO.

At the Pine-apple Nursery, Maida Vale, Messrs. Hooper & Co., have a magnificent strain of Gloxinias. The whole collection is of fine quality, and by careful selection of the seedlings the strain is maintained in a good condition. The flowers are very large, chiefly upright, and with broadly-expanded lobes; the chief sections may be named. The pure whites, or whites with with only a crimson or blue spot at the angle of the lobes; the wholly crimson, scarlet, blue, or pink; the pure whites with just a band of colour round the mouth of the tube; the red or blue spotted middles with white lobes; the pure whites spotted all over with small rose, blue, or crimson spots, and the brilliant scarlet with white edge; and so on, quite a dozen different and distinct classes being made. Mr. Willingham, the manager of the Pine-apple Nursery, is just now potting off the stock for flower next year. Of Caladiums several houseфuls are grown, comprising some fifty or sixty varieties, and together amounting to over 5000 plants. The Gloxinias and Caladiums are found equally as valuable as the Palms (of which there are about 30,000), for use in the decorations for balls, &c., which the firm undertakes.

THE VINERIES, WILLINGHAM.

This establishment is situated in a small village about a dozen miles from Cambridge town, and on the borders of the fen lands. The ground all around is largely devoted to fruit culture, the staple crop being Gooseberries, of which the varieties Whitesmith and Crown Bob are most largely grown, and this year's yield is very satisfactory. Green Gages are much grown on the same land, but are an absolute failure this season. Mr. J. F. Thoday, who also carries on the business of a maltster and corn-dealer, has a considerable area under the forenamed crops, but has, however, decided to develop a higher cultivation, and The Vineries is the result.

Here are grown, not so many Grapes as the name suggests, but cut-flowers, Tomatos, and Cucumbers for market, supplies being despatched to London, Leeds, Newcastle, and other northern towns, and, of course, to Cambridge during the terms, when large quantities of cut-flowers and pot-plants are disposed of. The Vineries consist of six houses and a pit, placed side by side. They are of the uniform length of 250 feet, but vary in width, the house devoted to Vines being 29 feet 6 inches wide. This house is divided into three parts, so that one-half of the whole is given up to Alicante, while Black Hamburgh and Muscat of Alexandria occupy one-fourth each. One entire house is planted with Tomatos, and a fine lot of plants they are, too. Vick's Criterion is most largely grown, on account of its good cropping qualities; and, indeed, it is a pity that its colour is not so bright as that of some other varieties, as Perfection, for instance, which variety is also grown, with Ham Green Favourite, Abundance, Laxton's Open Air, and Webb's Sensation, which, however, does not do so well as the others—in all, about 1300 plants.

Carnations are a feature, and are decidedly well done, and one house full of these was a sight. Miss Joliffe is naturally extensively grown, with Paul Engleheart, Madame Carle (very fine), Gloire de Nancy, Alegatière, Mrs. Reynolds Hole, Lucifer, and Huntsmen. It may well be imagined, from the foregoing, that large quantities of bloom are sent off daily; and, indeed, about 200 dozens is a day's average from this one house, where there are about 3000 plants in flowering pots.

Tuberoses are grown in large quantities, and may be seen in all stages. There are about 5000 plants disposed in various houses, and also in a pit for about 60 or 70 feet run, the rest being devoted to early Strawberries, to be followed in succession by Tomatos and Carnations. Peaches and Nectarines, together, occupy one house, and are doing exceedingly well, which is probably due, in part, to the naturally moist soil of the neighbourhood, where water is found at a very short depth—only 2 or 3 feet; but this abundance of water has its influence in making plant-growing under glass possible in so rural a district. A well has been sunk, and water is forced by horse-power into a tank on the top of a fairly high tower, and from there pressure is secured, so as to allow the hose to be used, and every plant in the place is within easy reach of water by this means, and labour is economised; the base of this tower is used as a packing-room. But to return to the crops.

Only one variety of Nectarine is grown, viz., Lord



Fig. 2.—Garden decoration at Sir Richard Owen's. (See p. 8.)

Napier; while of Peaches, Noblesse, Barrington, Galand, Dr. Hogg, Goshawk, and Grosse Mignonne, are all represented.

For autumn and winter supplies, Chrysanthemums are depended upon; and on the walks between and around the houses the plants abound, and they are favourites of Mr. A. Grant, the resident manager, who directs the whole of the operations with much skill. The varieties Mdlle. Lacroix, Lady Selborne, Peter the Great, Pelican, Astorg, Source d'Or, Ethel, Fair Maid of Guernsey, Elaine, and Thunberg are the principal of those grown, and they number in all about 7000 plants. There is, in addition to the houses already named, a small stove well stocked with foliage plants and Stephanotis, and in various parts of others Ferns find a home.

The open land, in addition to the foregoing, amounts to about 22 acres, and is cropped with Gooseberries, Green Gages, Asparagus, Raspberries, Strawberries, Tomatos, and Sweet Peas, for cut flowers, to which attention of passers-by is called as much by the mass of delicate pink and pure white flowers as by the rich scent.

In this neighbourhood, allotment gardens abound, every labourer having a plot, and a visit to them gave much pleasure to the writer, who was struck with one point which seemed rather singular—nearly every plot had a space devoted to Asparagus, which is not the most profitable crop to grow on a small piece of land.

HORTICULTURAL SUNDRIES.

Under the term of Horticultural sundries a great variety of articles are included, but a few moments' reflection on the sources of some of them brings to our mind at once what an important part the vegetable kingdom plays in providing the gardener with the materials wherewith to successfully carry on his occupation in plant culture. A glance at a nurseryman's catalogue shows how the world has been, and is still being ransacked for choice plants or novelties wherewith to gratify the tastes of man, and a glance at the catalogue of a horticultural sundriesman shows how numerous are the wants of the cultivator in bringing those plants to perfection. These thoughts were brought more forcibly to my mind during a recent visit to Messrs. Corry, Soper, Fowler & Co.'s establishment in Finsbury Street, E.C., which I had the good fortune to be shown over by Mr. Corry himself, to whom I am indebted for much of the information contained in this paper.

One of the most striking of recent introductions and developments is the utilisation of the rough bark of the Cork Oak, generally known under the name of Virgin Cork. It is not so many years ago that this was a waste product in the great cork producing districts of Spain and Portugal, and now it is exported from Lisbon, Algiers, and other ports in the Mediterranean in very large quantities chiefly for horticultural purposes, from its rugged, uneven surface, which is frequently covered with lichens, together with its lightness and porous nature, which makes it capable of retaining moisture. Virgin cork lends itself to many applications of the gardener's art. At first it was used almost exclusively for window boxes, imitation rockwork, &c., but at the present time it is worked into flower stands, ornaments for Fern cases, vases, rustic tables, and a host of other uses. The first crop of bark is usually taken from the Cork-tree when it is about twenty-five to thirty years old. This is the quality used for horticultural purposes, as it is course and unfit for cutting into corks or bottle-stoppers. The second gathering, which is taken in about eight or ten years after the first, is also of an inferior quality. It is the third crop, which is collected in about eight years after the second, that furnishes the first crop of marketable cork, or that which is suitable for cutting into bottle-stoppers. When the trees have attained to this age, so that three crops have been taken off, they usually yield a supply of good cork about every seven or eight years. The quality improves, and the quantity increases at each successive gathering. The cork harvest usually takes place in the months of July or August.

Next in order amongst raw materials may be mentioned Teak-wood, Hazel, Cedar, Pine, Sycamore, Oak; the first three of these woods are used for Orchid baskets, and the others for making the wooden expanding flower-pot covers now so frequently seen in living rooms for covering ordinary flower-pots. Teak is well known for its strength and durability, and is perhaps the most generally used for Orchid baskets, while for pot-covers the more ornamental or lighter woods are most in demand; another use to which wood is largely put is in making flower sticks or supports for flowers, or slender stemmed plants. The ordinary wooden labels or tallies pointed at one end to stick into the ground, consume a very large quantity of wood, mostly Pine or Deal. The cutting of these sticks and labels would seem to offer a most suitable occupation for women and children in this country, and one would expect that the market would be entirely supplied by home produce. This, however, seems not to be the case, for I was told that there is a very large trade with Germany in this produce, owing, not only to the cheapness of labour, but also to the abundant material furnished by the neighbouring forests and their close proximity to the homes of the workers; while millions of these labels are imported from Germany, it is satisfactory to know for the credit of our own country that the better

quality and more highly finished wooden labels are a home produce; the higher price, however, prohibits their use to anything like the extent of the German labels. A strong article in the way of square painted stakes made of Pine wood is produced in England for Rose and other plant supports.

The introduction of the slender Bamboo canes has to a certain extent supplanted the wooden sticks, as they are strong, rigid, and light, and not liable to warp or break. They are usually known as Tonkin canes, and would appear to be a species of Arundinaria. They are mostly of the uniform length of 4 feet. Malacca canes, the produce of Calamus scipionum, are also much used for garden stakes. They are thicker than the Tonkin and longer, are solid, but not so rigid; they are, however, very durable. They come from Siak, and are imported into this country in very large quantities, chiefly, however, for making walking-sticks; the best of which, that is, those consisting of one internode, fetching a very high price. The commoner kinds are used by chimney-sweepers for the handles of their brushes, while for garden purposes they are chiefly used for stakes.

Under the head of baskets, we have to consider not only a great variety of forms and designs, but also a great variety of materials used, from the useful and durable garden or truck basket—which is made almost exclusively in Sussex from well-seasoned Willow wood—to the green Rush baskets, now so much used not only for flowers but also by ladies for general purposes. It is curious how the truck basket (a name derived from the Anglo-Saxon *trug*, which is still used amongst the peasantry), is in general favour. Its shape and strength recommends it for practical use, and under slightly altered shapes and sizes, and with a better finish, namely smoothly-finished wooden plates and silver-headed nails, these baskets are always in demand by ladies for work-baskets. The young shoots of several species of Willow known as Osiers, are of course largely laid under contribution for basket-making, especially for those known as wicker baskets, but they are also used mixed with other materials, as the Green Rush, Cane, &c. Germany seems to be the head-quarters of the manufacture of these fancy baskets, which are very tastefully put together, and are found in endless variety of shapes and sizes. The stronger and most substantial kinds, however, are mostly the produce of our own country.

Mats for the protection of plants from frost, are a very important item in the gardener's list of necessary articles. They are known as bast mats or Russian matting, and are classified as Archangel, St. Petersburg, and Taganrog. They are made from the inner bark of the common Lime tree (*Tilia europea*). The trees which furnish bast for the larger kinds of mats are those from eight to ten years old, with a diameter of from 6 inches to a foot. They are usually cut down in May or June, when they are full of sap. The bark is immediately removed in lengths of from 6 to 8 feet; it is next steeped in water till the layers separate, and these are selected and hung up to dry in the shade, and during the summer are made into mats, which are exported in enormous quantities, and are not only used for gardening purposes, but also by cabinet-makers and upholsterers for packing their goods. The Russian peasantry further utilise the Lime tree bast for making a kind of matted shoes or sandals.

Another kind of bast, is that known as Cuba bast, which is the inner bark of the Mahoe tree (Hibiscus elatus), a West Indian malvaceous tree, growing to a height of from 50 to 60 feet. At one time the lace-like inner bark was much used for tying-up the bundles of Havanna cigars, as well as for tying-up plants in gardens. It has, however, now given place to other materials, though it may still be found in catalogues of garden requisites. The principal substitute for Cuba bast at the present time is the material known as Raffia. This is the cuticle of the leaf of Raphia Ruffia, a Madagascar Palm, and, as is well known is very pliable and extremely strong. It is imported in very large quantities solely for horticultural purposes, though from its strength and softness there seems to be no reason why it should not be used for textile purposes, indeed the people in Madagascar apply it to these uses as well as for plaiting into durable and pliable hats, not unlike Panama hats. A similar substance to Raffia is furnished by the leaves of the Eta Palm of British Guiana (Mauritia flexuosa). It is known as Tibisiri, and is much used by the natives on account of its great strength, for making their hammocks. This material would make an efficient substitute for Raffia were it imported here.

It has been well said of the Cocoa-nut that it is the most useful of all Palms, yielding as it does in the tropics such an infinite variety of economic products, and even amongst imported Palm products in this country it far outweighs all others. It is true that the Date Palm (Phœnix dactylifera) furnishes our tables with the delicious fruits known as dates, and the leaves are used by us for decorative purposes. The African Oil Palm (Elais guineensis) gives us Palm Oil, from which soap and candles are extensively made; but the Cocoa-Nut not only supplies us with the nut itself in the fresh state, now so much used in confectionery and in biscuit-making, but in the dried state it is known as Copra, enormous quantities of which are imported here for the expression of oil used also for soap and candle-making, but the husk or outer covering of the nut is an article of enormous trade and varied uses, for after being split open and the nut itself extracted, the husk is soaked in water to make it more supple, crushed, and the long fibre combed out for brush making, while the shorter fibre is used for mat-making; and the refuse left in the separation of the two, forms the Cocoa-nut fibre of the gardener which is now so much used for covering beds of bulbs, giving warmth and imparting a neat appearance. Besides this use, the husk of the Cocoa-nut, cut in half and trimmed into shape, make excellent flower-pot scrubbers. Under the head of Insect Destroyers we find the vegetable kingdom largely laid under contribution. Amongst them being Hellebore powder, Lemon oil, Fir tree oil, Tobacco juice and Tobacco paper, Quassia chips, &c. A large quantity of the Tobacco juice, used both for horticultural purposes and as a sheep wash, is obtained in the process of preparing the roll tobaccos by submitting the twisted leaf to heavy pressure, the juice being gradually driven out and passing into troughs below. This forms what may be termed a bye product of the Tobacco manufacturer. Quassia chips as now known in commerce are furnished by the wood of Picræna excelsa, a tree of 50 or 60 feet high, native of Jamaica and other West Indian Islands; Quassia wood as originally introduced, was supplied by an allied tree—Quassia amara—a native of Surinam. It was upon this tree that the reputation of Quassia as a medicine was established. The tree, however, being of small size, the demand for the wood soon exceeded the supply, and in is now unknown in British commerce, the wood of Picræna excelsa being substituted for it. It is a curious fact connected with Quassia wood, that while an infusion of the wood forms a wholesome bitter tonic, the same infusion is poisonous to insects, hence its use as an insecticide. Quassia is said to be extensively used by brewers as a substitute for hops.

The foregoing are some of the principal vegetable products used by gardeners. They might be added to considerably if we included what may be called "minor products." *John R. Jackson, Museum, Kew.*

Trees and Shrubs.

SAMBUCUS NIGRA AUREA.

This golden Elder makes a fine show in the Shrubbery from now onwards until the autumn. The most effective manner of planting is to put six good-sized bushes in a group together, choosing a sunny spot; facing the west is perhaps a better aspect than a southern one, as during very bright sun and dry weather the leaves of the plants in the latter aspect become scorched, and their beauty is spoiled till new growth is made. To have a good effect, dark-leaved shrubs should be in their neighbourhood, to serve as foils to the golden hue of the foliage. Our clump is planted behind some purple-leaved Hazels, which are kept dwarf by pinching the points of the young growth in the spring, and pruning the shoots in to one or two eyes during the winter. In this way the Hazel is kept lower than the Elder, which has its shoots cut so that they overtop the Hazel sufficiently to make a bold back-ground of yellow foliage.

The yellow in the leaf of the Elder may be deepened by pinching out the points of the young shoots when they have grown as high as required; in fact, they should be topped a little while before that time, as afterwards they elongate considerably, even with the young points of growth removed. Some of the earliest shoots on our bushes were ready for topping a fortnight ago. I would advise those who have not tried the topping of the shoots of this Elder with the view of improving the colour of the leaves, to do so, and note the effect produced. Our Elder bushes are annually pruned to 3 feet from the soil in winter, cutting back the year-old shoots to one or two buds. In other parts of the shrubberies where the Elder is planted towards the front, the shoots are cut off close to the ground. Elders grow luxuriantly in stiff soil, and are easy of propagation from cuttings. Cuttings 1 foot long of the current year's growth should be put in early in November. The cuttings should be cut square just below a joint, and inserted firmly in trenches on a north border, like Currant cuttings. Some sand or road grit put at the bottom of the trench will hasten rooting, and by the following October the cuttings, now well-rooted, may be planted. The only point of importance to observe is to keep the cuttings firm at the base.

KERRIA JAPONICA.

This profuse flowering deciduous shrub should become a favourite in all gardens where flowering shrubs of spring are valued. In Hampshire, Sussex, and most southern counties, the sunniest part of the cottagers' gardens is often given up to this plant, and the usual place is on a wall, or close to one. In such positions every shoot blooms, the result being a glorious display during the month of April. It is seldom that one sees Kerria growing well in great gardens—perhaps because it is thought to be fit only for cottage gardens. Nothing is easier than to raise a stock of the plant. From a good-sized root numerous suckers push up from the stem, and these, when taken up with as much root as possible, form good-sized plants in one season. Cuttings of the half-ripened shoots inserted in sandy soil in September in a cold frame, and kept close until roots are formed, make nice plants by the following April, and are by that time ready to be planted out. *E. M.*

Plants and Their Culture.

PLANTS FOR AUTUMN-FLOWERING.—If the propagation of these plants was carried out at the proper time, they will now be ready for shifting into larger pots, and those still in the cutting pots may be shifted into 60's, and kept growing.

Begonias of the tuberous section are useful for blooming in the early autumn, and many of the hybrids are splendid bloomers at that season, and I gave in a previous Calendar a list of the more useful of these. A useful size of pot for these plants is a 32, and into pots of this size they should now be shifted, placing them in a frame, which should be shut up early, and syringed in fine weather. Begonias, after the final potting, may be afforded intermediate-house treatment until the plants begin to fill their pots with roots, when cooler quarters will do for them, and the plants when so grown produce larger flowers than those stove grown. Many autumn-blooming plants will now do well in frames, as they do not stand in need of stove treatment for some time yet, and growth is more sturdy in frames.

Winter-blooming Pelargoniums which were struck early in the spring will now need to be shifted into 6-inch pots, and 4-inch pots for the weakest of them, the compost being made very firm, and the plants

kept close to the glass. The points of the shoots should be pinched out, so as to furnish several leads.

The double varieties of Primulas, of which the old double white is the more useful, will be ready to put into their flowering pots—that is, if they have filled the thumbs in which they were struck. A frame facing north is best for them, the plant being placed on a bottom of coal-ashes. Libonias, if small, will need to be shifted, and placed in a close frame for a time. Lasiandra macrantha, another useful subject for the autumn season, if propagated in April, will require a like treatment to the Libonia.

Justicias, which should be well attended to with stimulants and repotting, so as to secure good heads of bloom, do well in a cool frame; also Poinsettias, if due attention be paid to cutting in the early growth. When placed in a frame, after being in a close house, Poinsettias should be carefully watered and ventilated for some time, or a check will be given them. The young plants of Euphorbia need to be placed in a warm pit or on a shelf in the stove, shifting them if necessary, and watering them sparingly for a time. Potsful of cuttings struck now, placing three cuttings at the side of a 60-pot, stopping once or twice, make useful decorative plants, and bloom well. The long racemes of bloom of Plumbago rosea are useful for putting into tall vases; and the plants themselves are highly decorative. They are gross feeders, and should not, therefore, be allowed to get pot-bound. Old plants of Plumbago should get well supplied with manure-water, and young stock should be shifted into 6-inch pots. Salvias will stand in need of their final shift, and should be plunged in coal-ashes in the open air, and well supplied with water, and a damping overhead afforded them in the evening. A few Salvia cuttings rooted at this season are of use for putting into small vases. Carnations for winter bloom may be repotted, and the points of the "grass" kept free of aphis by dipping them occasionally in weak tobacco-water. Eupatoriums for autumn bloom require the same treatment as Salvias. Abutilons, if space can be given to them, give a large quantity of bloom if grown sturdily by placing them in the open air for two months, but affording them the protection of a cold frame until a good growth is made. Boule de Neige is one of the best Abutilons for autumn bloom. Young plants of Bouvardia in pots should be shifted when the pots are full of roots, and kept close for a short time afterwards, watering them carefully. *G. Wythes, Syon House, Brentford, W.*

The Orchid Houses.

Cattleya-house.—Cattleya Sanderiana, C. Warneri, and C. gigas, when they have done flowering, should, if requiring it, be repotted, these species making their roots after the flowering is past. Cattleyas with round and thin pseudobulbs, of which C. bicolor, Loddigesii, and Harrisoni are examples, may now be abundantly supplied with water. These species of Cattleya should not be allowed to become dry at any time, and when they are making their growth, the greatest care should be taken not to check it, as it would be at the expense of the flowers.

Lælia purpurata will now have gone out of bloom, and the plants will need rest for the next three months, and may not be disturbed at the root unless in very bad condition, in which event the operation of repotting should be done without delay. The best month for repotting these plants is September. The warmth of the weather has a good influence on the growth of Cattleya Trianæ, and its growths are pushing very fast. Some difficulty may be experienced a little later in the season in avoiding a second break from the new pseudobulbs; but it is very much better to run this risk than to try to check growth at the present season. Cattleya Gaskelliana, now coming into flower, is perhaps one of the most useful Cattleyas we have at this season, and one of the freest to grow.

The white varieties of Lælia anceps give promise of a larger growth than any they have yet made in this country, so that I am in hopes we shall get over the usual complaint so frequently heard that they are shy bloomers. The syringe should be used overhead in this house daily, and if the plants have been treated as advised all will be well. The temperate-house should be kept up to 68° as a minimum at night, and air should be afforded the plants early in the day, and after closing also, if the sunheat will maintain the temperature at 95°. *A. G. Catt, Parkfield Gardens, Worcester.*

Fruits Under Glass.

Peaches and Nectarines.—The borders are apt to get neglected at this season, and it is extremely difficult to properly water borders which have got very dry and are well drained, the water escaping into the drains instead of saturating the soil. The moral is, be ever on the alert to avoid dryness of border at points beneath the surface, and avoid the other extreme of a soddened border, which is equally objectionable. The shoots should be well thinned out, all laterals that start from the current year's wood stopped at the first leaf, and gross shoots cut out if they may be spared. Give all the air possible to the houses, and preserve all the old foliage on the trees, keeping it free from insects to the finish. Do not hurry the maturing of the buds, or they may become dangerously forward, and receive a check before the proper starting time. Should black or other aphis attack the leaves, syringe them with 1 oz. of Calvert's carbolic soft soap, 10 per cent. guaranteed strength, diluted in 1 gallon of soft-water; it is a deterrent also to red-spider. If any trees have not done well this year, now is a good time to examine the borders, removing the inert soil, saving all the good roots, and replacing them in fresh compost of fibrous loam, old mortar rubble, and crushed bones. If the roots have been much disturbed during the operation, afford the trees some amount of shading during sunny weather, and give the soil a good watering, keeping the house rather close till new roots begin to form. Done thus early, the trees will be in condition for early forcing next year, the Peach being most accommodating in this respect; moreover, it is benefited by an annual part-renewal of the border.

Keep successional houses containing ripe fruit as cool as possible, and gather the fruit daily, keeping it on soft wadding in a cool, airy room, till used. In late houses attend to the tying-in of shoots; clear the fruits of all leaves that hang over them; bring the apex of the fruit above the trellis; examine the borders, and give good soakings of liquid manure, varied with a sprinkling over the surface of "Thomson" or "Le Fruitier" manures, whilst as the mulchings become washed away, add a little fresh thereto. Use the syringe or garden-engine daily before colouring commences. Now is a good time to visit a nursery, and select trees, in readiness for autumn delivery. Where Peaches can be ripened on outside walls, late Peaches in houses are unnecessary, seeing that the American varieties, introduced by Mr. Rivers, such as Alexander, Waterloo, Amsden June, Hale's Early, &c., have extended the outdoor season by at least a month, although possibly there is something more to be desired in respect to flavour, for these varieties cannot compare with Royal George, Bellegarde, Grosse Mignonne, and others of standard excellence. *W. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

Peaches and Nectarines.—When all the shoots required for fruiting next year and filling bare spaces have been tied or nailed in, the final thinning of the fruit should be done, as soon as stoning is past. It rarely happens that well-treated trees lose many fruits, but it is best to wait until the stoning stage is reached. In selecting fruits to remain, preference should be given to the finest of those on the upper sides of the shoots, and one Peach left to each square foot of foliage will be found to give a sufficiently heavy crop for ordinary trees. In thinning the shoots, the foreright shoots should be kept pinched in, or leading shoots will be retarded in their growth, and where there is wall-space still to fill, this is always undesirable.

Apricot trees which are carrying heavy crops will require a great deal of thinning, or the trees will be much distressed. The surplus fruits when taken off now may be used by the cook. The Moor Park is a variety very apt to lose its branches at stoning time; but I have found that, if the shoots are allowed to extend themselves as much as possible, stopping the breastwood only, and avoiding over-crowding of the shoots, growths suffer little or nothing from gumming, which is the forerunner of paralysis of the shoots. Cutting out unfruitful branches may be performed at this season without danger from gumming. Give the tree borders a thorough watering if no heavy rains have fallen; and if good mulchings have been applied, little more will be needed in ordinary soils till the fruits begin to ripen.

The finer varieties of Plums are, we find, much improved by being grown on walls with glass copings. The fruits should be thinned, and those left on the trees exposed to the sun by removing the foliage. If the second growths are starting away freely, as they often do, after the stoning of the fruit is ended, stop these at the third or fourth joint. Look well to the mulching of the Plum border, and add more if it is required. Afford plenty of liquid manure, and syringe the trees with clear soft water until the fruit begins to ripen.

Gooseberries on trellises should have all breastwood cut away, and the leading shoots tied in and regulated. Place straw or long litter between all the rows of bushes. Bushes trained on walls should have the fruits thinned, so that they may hang a long time without getting mouldy. The Gooseberry bushes in the quarters should have their shoots thinned, thus giving the fruit a better chance to ripen, and the wood to mature. Nets must be made use of to preserve the fruits from the birds. *A. Evans, Lythe Hill.*

The Kitchen Garden.

Hints of Work for the Week.—Let the soil amongst growing crops be frequently hoed to destroy weeds, and keep the surface loose and crumbly, this being an invaluable aid to growth in plants. Give timely attention to the earthing-up of Peas, Beans, Cabbages, Cauliflowers, &c., and before so doing, if the soil be dry, thoroughly water it on both sides of the rows of plants, and stake those which need support before they become injured by wind. In placing sticks to the tall kinds of Beans and Peas, the tops of the boughs should be kept well apart. The late sowings must be well attended to, and in the absence of heavy rain, the rows of late-sown Peas should be frequently soaked with water to aid germination, or the plants will appear irregularly.

Turnips.—In the colder parts of the country, no time should be lost in getting in a large breadth of Turnips, another sowing being made about the end of the present month, a sowing which will be productive of middling-sized solid roots that will keep well during the winter. There are no better varieties of the Turnip for winter use than Round White, Red Globe, and Chirk Castle Black Stone, the latter an exceptionally hardy plant. The ground for this crop, if fairly enriched with manure and moderately firm, will require very little preparation, with the exception of raking it down and drawing the drills for the seed-sowing. Usually, it is the ground which has been cleared of early Potatos that is sown with winter Turnips. If such ground be selected, it should be thoroughly cleared of rubbish before drawing the drills. These may be drawn at 20 inches apart, and watered if the soil be dry before beginning to sow the seed, which should be rolled in a mixture of red-lead after being placed in milk, as a precaution against the ravages of birds. Sometimes it is found of service to cover the seed with finely-sifted burnt earth or garden refuse. If the seed is of good germinating power, the plants will soon appear, and to prevent injury by the Turnip-flea or by slugs, frequently dust them when damp with roadside dust; and ply the Dutch hoe constantly between the rows. Thinning the plants should be done at an early date, and on two occasions, the last one leaving the Turnips to stand 9 or more inches apart, according as it is a big or a little top.

Vegetable Marrows and Ridge Cucumbers.—These should be making rapid growth, and if crowding of the bine is feared, a slight thinning out should take place, the remaining shoots being trained out, and pegged down. The plants will be all the better if a good mulching of decaying manure be placed over the roots. Afford them abundance of water, and cut the fruits early, or the cropping powers of the plants will be somewhat lessened. *H. Markham, Mereworth Castle, Maidstone.*

Mushrooms Growing in a Dwelling.—At a farmhouse in Newchurch-in-Pendle, Mushrooms grow in profusion in the various rooms on the ground floor. A gentleman from Clitheroe visited the place last Sunday, and he found Mushrooms growing out of the chinks of the floor, and also from the walls. He was allowed to take several away, one of which was 8 inches across. The Vicar of Newchurch often has a dish from the farmhouse.

EDITORIAL NOTICE.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY,	JULY 8	Royal Horticultural Society: Fruit, Floral, and Scientific Committee, and Lecture by Mr. H. J. Elwes.

SHOWS.

TUESDAY,	JULY 8	Gloucester. Ipswich. Winchester (two days).
WEDNESDAY,	JULY 9	Brighton (two days). Diss. Ealing. Tunbridge Wells. Wimbledon. York Florists'.
THURSDAY,	JULY 10	Birkenhead. Chiswick. Kenilworth. Worksop.
SATURDAY,	JULY 12	Galashiels. New Brighton.

SALES.

TUESDAY,	JULY 8	Second portion of the Studley House Collection of Orchids, at Protheroe & Morris' Rooms (two days).
THURSDAY,	JULY 10	Established Orchids, Importation of Angræcums, &c., at Stevens' Rooms.
FRIDAY,	JULY 11	Established Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°.2.

Wine Prospects in France.

"THE Vine languisheth," has only within the last three years ceased to be the all-prevailing cry in nearly every quarter of Europe, where the blood of the Grape furnishes the staple drink of the inhabitants, or gladdens the heart of man far from the land of its raising. France has been by far the largest loser by the languishing of this important item of her production, and some of our readers may therefore be interested in reading a short account of the prospects of the wine-growers of France, who have of late years suffered enormous losses by the ravages of the Phylloxera, mildew, and other scourges. Enemies of the earth beneath and the air above have, since 1875, robbed the tillers of the fairest lands of France of an amount in money computed by competent statisticians at not less than the sum of £400,000,000 sterling. That the nation, besides losing the war indemnity of £200,000,000, and the vast sum represented by the complete destruction, and therefore complete re-establishment and strengthening of war material and fortresses, should so well have weathered the further storm of Nature's war against their chief agricultural staple, speaks volumes for the enormous natural wealth and recuperative energy of the French people. Yoking science to their bullock-teams, the French Vine-growers are now, and have been for some years, successfully combating the enemies of the Vine—enemies which may turn out to be friends in disguise, like other evils to which earth and flesh are heirs. From the evidence before us, we feel convinced that, given a few good vintages, we shall find France producing a quantity of wine surpassing her production before her vineyards were desolated by their insect and fungoid foes. Increased production is rapidly lowering prices, especially in the Bordeaux district, and it can safely be assumed that within a short space of time we shall all be able to buy in this country a sound, mature, red wine from the district best capable of producing it, at 1*s.* a bottle. It is not too much to say that with the red table-wines produced in the Bordelais no other district of the globe can at present compete. Patriotism may seek and ultimately find in Australia, and our palates in this damp and changeable climate may find in port wine a substitute, but now that the vine-pests have been coped with, the proximity of France to our shores, her knowledge of vine culture and manufacture, and her climate so well suited to the production of a cheap sound natural wine must, from the nature of things, enable her to defy serious competition.

The Médoc produces the largest number of high-class clarets, and has the highest average of quality of all the districts. It stretches north-west from Bordeaux to the sea, containing between 500 and 600 square miles. It is divided into Haut and Bas Médoc, most of the famous growths being situated in the former division. It is creditable to our country that in this district, the home *par excellence* of wine, a firm of Englishmen should have not only established themselves, but taken the lead both in combating the diseases of the Vine, and bringing fresh land under culture. The house of GILBEY, who purchased, some sixteen years ago, the estate of Château Loudenne, have seen the Vine culture of the Médoc pass through every vicissitude that can afflict an agricultural industry, and emerge from its sea of troubles with renewed vigour, to again take the lead among the red wines of the world.

That lead Bordeaux has never lost, as concerning the more expensive wines, but it now enters on a new cycle of usefulness, in providing France with an increasing proportion of the staple beverage of the people. France, consuming 2½ hectolitres, equal to about 55 gallons of wine per head of her population of 38,000,000, requires 2,090,000,000 gallons of wine to satisfy her thirst, all, or nearly all, of which used to be produced within her own borders. She has laid every wine-growing country of the world under contribution of late years, but will probably within a few years herself produce all she needs. Her whole export has scarcely ever in any one year exceeded a tenth of her present production, and is therefore a mere drop in the ocean which 2,090,000,000 gallons of wine suggest to the mind.

As most of our readers know, the evil effects of the phylloxera has been met, to a great extent, by grafting scions of the best "cépages" of France on to the stocks of various American species, the roots of which, even when attacked by the insect, do not suffer to anything like the same extent as those of the European Vines. Bisulphide of carbon has also been very largely employed to destroy the phylloxera, so that Vines on their own roots have been replanted on a large scale, and old stocks defended against attacks of the insect.

The mildew (Peronospora viticola), which attacks the foliage of the Vine, has been an enemy only second in its ravages to the phylloxera. The affected leaves shrivel and fall off, leaving the Grapes exposed, with the probability of total loss, or the certainty of great deterioration in quality and quantity of the wine crop. This fungus has been coped with by the application of sulphate of copper, either in a liquid form or in powder, over the foliage of the Vines, and may now be said no longer to constitute a danger to those who choose to prevent its spread in their vineyards. It may also be used with great success in diminishing the ill effects of the Potato fungus. There are many who say that the wide-spreading of the various plagues has been a consequence of the effete condition of the Vines themselves and of the exhaustion of the soil, but these are statements that will not commend themselves to the physiologist and cultivator, who realise what care and good cultivation can do to maintain the health and vigour of plants. What money, intelligence, and enterprise properly applied will do cannot be better exemplified than by instancing the progress in production of the vineyards of Messrs. GILBEY's Château Loudenne. In the first year of their occupancy the make was 170 hogsheads; in 1889 it was 1180, and if the vintage of 1890 fulfils its present promise, the yield will not fall far short of 1500 hogsheads.

The chief "cépages" used in the Bordeaux district for the red wines are Cabernet-Sauvignon, Cabernet-blanc ("blanc," from the whiteness of the young shoots), Merlot, Malbec, and Verdot, this last being almost exclusively used in the Palus, or low marsh lands. Of these varieties, the Cabernet-Sauvignon stands first, no authority permitting its omission, though its proportion to other growths in the *crus* may differ according to the wish or circumstances of the proprietor. One grower in the Entre-deux-mers district told us recently that the best proportion for good wine was one-third Cabernet-Sauvignon to two-thirds of Merlot. Others in the Médoc expressed their preference for different proportions of all five. Every agriculturist, however, will allow, that all might differ, and yet all be right, for every property differs in the aspect, the state, and the composition of the soil.

A drive through the Graves district, above Bordeaux, on the left bank of the Gironde, in which Hautbrion is the most famed growth, and through the district on the right bank opposite the Médoc, reveals the same tale of careful and patient cultivation and increased production.

Turning now to other districts of France, we find the same rapid progression towards a complete recovery. With the exception of the Charente district, all are rapidly regaining their former level of production; even the Charente, which used to produce the finest brandy, to the distilling of which the major part of its wines were devoted, has begun to replant vineyards, on lands which for some years have been growing cereals and other crops; but so great was the devastation caused by the phylloxera, that it will be years before the Cognac district resumes its former aspect.

In the Armagnac district, which we also visited, a stretch of country lying within the departments of the Gers and Landes, the mildew was the plague which for some years reduced the wine crop materially. The phylloxera seems hardly to have touched that district, the soil being light and sandy, and apparently unsuitable



Fig. 3.—IRIS GATESII: FALLS CREAM-COLOURED, WITH PURPLISH DOTS: STANDARDS PALE YELLOW, OR IN SOME CASES PALE PURPLE: A HARDY PERENNIAL. (SEE P. 6.)

to the insect. The production of wine in the Armagnac has now almost reached the average production of the years before the varied epidemics, so fatal to the wine crops of France, and the brandies there produced are fetching high prices, owing to the scarcity and consequent dearness of the Cognac spirit.

In a subsequent issue we shall also allude to the prospects of the vintage on the Douro, as seen on a recent visit.

Iris Gatesii.—Our figure of this magnificent Iris (fig. 3, p. 17), was engraved after a drawing kindly sent to us by Mr. Max Leichtlin. It is alluded to in Mr. Ewbank's article at p. 6. Mr. Leichtlin tells us the drawing was made from the living plant, but that usually the flowers are slightly smaller. The colour is creamy yellow flushed with green, with a dash of silvery grey. The petals or standards are in the smaller forms, pale purple, but in the larger forms of a uniform yellow. The plant is a native of Armenia, but is quite hardy here, and requires the same treatment as Iris Susiana. It was named by Prof. Foster in honour of the Rev. T. F. Gates of the American Mission at Mardin. Prof. Foster in speaking of it in his lecture upon Irises at the Royal Horticultural Society on May 14, 1889, said, ". . . . imagine a flower often very much larger than that even of Iris Susiana, of a delicate light grey hue, resulting from minute dots and delicate veins of rich purple on a creamy white ground, or at times of a pure light sky blue marked with deeper [coloured] veins, and at the same time of peculiar grace in form."

The Gardeners' Orphan Fund.—The usual monthly meeting of the committee was held at the Caledonian Hotel, on the 27th ult., Mr. John Laing presiding. The election and third annual general meeting of subscribers will take place at the Cannon Street Hotel, E.C., on the 18th inst., at 2 p.m., and will be followed by the annual dinner at 5 o'clock, when Mr. Shirley Hibberd will preside.

The Duke of Connaught's Plants.—His Royal Highness the Duke of Connaught, who has just returned to this country from a prolonged residence and tour in the east, has brought home with him a most interesting collection of rare plants, shrubs, &c. In a letter written under date, Windsor Castle, June 24, His Royal Highness informs Messrs. Bickerstaff, Ely & Co., of Hickmondyas Nurseries, Knockholt, Kent, that his collection includes two or three specimens of Japanese variegated Maples—a beautiful tree which is rapidly becoming a great favourite in this country.

Burnley Park.—Amongst those invited to send in designs for laying out the Park at Burnley was Mr. John Shaw, landscape gardener, The Downs, Bowdon. There were originally twelve sets of plans, but these were reduced to three. Two of these were considered of equal merit, and it was decided to divide the two prizes amongst them, giving each man £12 10s. They bore the mottos of "Health" and "Sylvander," which were ascertained to have been sent in by Mr. Robert Murray, of Offerton, Stockport; and Mr. John Shaw, of Bowdon Cheshire, respectively. Both were beautiful specimens of workmanship, and either would make both a picturesque and well-adapted park from a recreative point of view. Each has its special features of excellence, and it is not known yet what the Corporation will ultimately do. Probably a working plan will be made embodying the best features of each. The ground is a triangular plot, 28 acres in extent. The competitors were limited to an estimated expenditure of £12,000. Mr. Shaw ("Sylvander") considers the site of the proposed park to be pleasantly situated and sufficiently elevated to command extensive views over a rather interesting country of hill and dale, which, on the whole, is fairly wooded. The surface of the intended park is nicely varied, and in every way well adapted to the purposes of a public park and recreation ground. There are six lawn tennis courts, a pavilion on an elevated site, a girl's playground, 60 yards by 43 yards; and a bowling green 67 yards by 38 yards. The central lawn is laid out in circular shape, taking up about 8 acres. This Mr. Shaw would ornament with clumps of trees and single trees in every variety suitable to the situation, also with beds of Rhododendrons and other evergreens and shrubs. The tramway which runs almost through the centre of this area is shown to be pretty well covered at the boundaries, with bridges at the crossings five in number. The plan also comprises site for gardeners' lodge, hothouses, potting-sheds, compost grounds, &c. The walks are 2 miles 76 yards in extent, occupying 2⅓ acres. The area of the lawn tennis courts is 4000 yards, boys' playground 1700 yards, girls' playground 2000 yards, and the bowling green 2500 yards. Two fountains, which are picturesquely placed at the two lower angles of the central area, are of fine proportions; the basin being 60 feet in diameter in each case. Two terraces surround them, divided by a flower bed. These are approached by three flights of steps. Altogether the plan is commendable for its graceful treatment of the ground, and the excellent provision which it makes for recreation.

Cattleya Mendelii.—We have received from R. B. White, Esq., of Arddarroch, Dumbartonshire, say Messrs. F. Sander & Co., St. Albans, flowers of one of the most distinct and charming varieties of this grand Orchid yet seen. Its most distinctive feature is the labellum, usually Cattleya Mendelii has a more or less yellow throat, but in this variety there are two blotches of yellow, as in Cattleya gigas, the lovely lake-crimson colouring extending far away into the interior of the tube, and also on the outer margin of the labellum; this colour extends even as far as the folded ridge over the column.

Nelson Flower Show.—The twenty-eighth annual exhibition, in connection with the Great and Little Marsden Floral and Horticultural Society, was held on the Recreation Ground, Nelson, on Saturday. There was a fairly good show, the principal winners being Messrs. Jno. Birch, J. Higson, J. T. Hargreaves, W. Strohan, and C. Wilson. The show was well attended. The balance-sheet issued showed a balance in hand of £97 16s. 11*d.*, and the income during the year was £293 1s. 8*d.*

Mr. Charles Gibb.—The *Canadian Horticulturist* for June contains a portrait and biographical notice of this gentleman, who died of influenza at Cairo on March 10. Mr. Gibb was a very ardent pomologist, who travelled in Russia and Scandinavia for the purpose of acquiring information which would be of value to his fellow countrymen. He was the means of procuring for Canada numerous Russian varieties suitable for the Canadian climate, and was so earnest and persevering in his work that his loss will be felt severely by horticulturists in the Dominion.

Malpighia ilicifolia.—A dwarf shrub, an example of which was found by M. Linden in the island of Cuba in 1838, and brought by him to Belgium in 1841. It has been cultivated from that time to the present, but is not much larger now than it was then (about 1 foot), but it is well clothed with Holly-like leaves, and every year produces a profusion of small pink flowers. It is an interesting survival of M. Linden's earliest explorations. *Illustration Horticole*, t. 103.

New Recreation Ground for Bedford.—At the request of the Bedford Corporation, plans have been prepared by Messrs. W. Barron & Son, landscape gardeners, of Borrowash, Derby, for laying out their Mill Meadows Estate as a public recreation ground. The estate consists of a long and rather narrow strip of land between the upper and lower streams of the River Ouse, about 35 acres in extent, the whole of which is now subject to floods, with the exception of a few acres at the upper end, which have been raised. The scheme which has now been submitted will obviate these floods for the future. Both the upper and lower stream will be widened, and a weir constructed 100 feet wide, spanned by a rustic bridge. The plans also provide for an ornamental lake, about 3½ acres in extent, connected with the upper stream. There is already a public park in Bedford, nearly 70 acres in extent, which was laid out and planted by Messrs. Barron in 1884.

New Strawberry.—We have received from Mr. Gilbert a box of a new seedling Strawberry which he proposes to call the Chief Secretary. The first thing we note about it is that it is a good traveller. In spite of remaining in the post-office all Sunday, the fruit, when unpacked on the Monday, was in excellent condition—needless to say it had been well packed. It is a mid-season variety, with large, handsome, oblong, flattened, or cockscomb-shaped fruit, juicy, and with a fresh pleasantly acid, yet sugary flavour. What the foliage may be, and what the qualities of the plant as a cropper, we do not know; but we are inclined to think highly of the fruit as submitted to us.

Red Turf.—M. Charguerand, in a recent number of the *Revue Horticole*, describes a method of making a lawn red. For a fortnight the grass is kept shaded from the light and then suddenly exposed to the sun, and to the frost if possible, or noctural radiation. As a physiological experiment this is curious; but we should prefer M. Charguerand to confine his experiments to his own lawn.

The National Pink Society.—The next exhibition of the above Society will be held in the Royal Botanical Gardens, Manchester, on Saturday, July 19; and, in view of the laudable efforts now being put forth to bring the Florists' Pink into general cultivation, it is to be hoped that cultivators of the flower will exhibit largely.

The Royal Botanic Society has been *en fête* of late; on Thursday, June 26, there was the Floral Parade and Feast of Flowers, when it was thought artistic and botanical to cover the wheels of carriages and bicycles, &c., with Roses and other flowers. The annual Evening Fête was held on Wednesday evening last, when the grounds were decorated as prettily as usual; there was a good attendance, as the weather had been fine during the day, but towards the end of the evening there came a terrific shower of rain, extinguishing the oil and gas lamps, and driving the visitors home.

Ashby Folville.—This estate in Leicestershire, the ancient seat of the Lords Carington, has been purchased by Mr. Richard Smith-Carington, of the well-known firm of Messrs. R. Smith & Co., Worcester.

Raid on Kent Strawberry Grounds.—A large number of excursionists from London journeyed on Sunday last to the fruit district near Knockholt, Kent, and in the evening several serious disturbances occurred. Strawberry grounds were pillaged, and the men in charge of them seriously assaulted. One farmer named Woodhams, of Dunton Green, after an encounter with fifteen young costermongers, died of excitement. A mounted patrol pursued the party, but they got clear away. Yesterday morning at Bromley Police Court, William Ledger, of Whitechapel, and John Franks, of Lambeth Walk, who had stolen Strawberries and assaulted the man in charge of the field, were sentenced to fourteen days' hard labour without the option of a fine.

Colonial Notes.

AUSTRALIAN BAMBOOS.

About forty years ago it was made known through Carron's narrative of Kennedy's sad Expedition, that, at all events, one Bamboo occurred in the jungles of some places between Rockingham Bay and Cape York. That tall and ornamental climbing species has been observed repeatedly since, but flowers have never yet been obtainable, so that the generic position cannot as yet be fixed. Moreover, it seems that in the littoral mountains of North-East Australia at least one more Bamboo had been noticed. From North-Western Australia, Bambusa Arnhemita is described from flowering specimens collected on the Daly River by Mr. M. Haltze, the Director of the Botanic Garden of Port Darwin. Many years ago Mr. Burkitt mentioned a second Bamboo as occurring on the Mary and the Mackinlay Rivers, but its flowers are as yet unknown. Recently, a third Bamboo from Arnhem's Land was discovered by Mr. Haltze, who observed that it resembles B. vulgaris; it has yellowish stems, with green stripes. Of this also no flowers have as yet been observed, but doubtless these plants could be forced into flowering by cultivators with rich manuring, in the same way as other plants. Thus, on the south coast of Australia, Arundo Donax hardly ever produces flowers, though it grows vigorously, but on the liberal application of strong manure, the inflorescence has been forced into development. *F. von Mueller, Melbourne.*

THE LATE B. S. WILLIAMS.

We are enabled to give this week a characteristic portrait of this distinguished horticulturist, whose lifework we alluded to in our last issue. The funeral took place on Monday last at Highgate, when, in spite of the weather, a very large number of friends and acquaintances assembled to pay their last tribute of respect. It is a noteworthy fact that Mr. Williams' father, who has reached the patriarchal age of ninety-four, is not only still alive, but in the service of Mr. Warner, at Hoddesdon.

Fruit Register.

SOME VARIETIES OF PEACHES.

From the frequent mention of it in your columns, Hale's Early seems to have established the position for itself of the best early Peach. It has always been a wonder to me why Desse tardive has not the same position among the late varieties. Many good gardeners have never heard of it, nor is it included in the lists of some of the leading nurserymen; yet, for colour, flavour, size, and free-setting qualities, it is superior to both The Late and Walburton Admirable. A Peach that ought to be grown for its luscious, piquant flavour, is Goshawk. Four good outdoor varieties are Stirling Castle, Dymond, Téton de Venus, and Sea Eagle. Those who have seen Mr. Coleman's Abecs will also grow this variety, although it seems impossible for anyone else to grow it as he does. For a first early, Waterloo will probably be found the best. *C. A. M. C.*

Home Correspondence.

HOME-GROWN BULBS.—About six years ago, T. A. Dorrien Smith, Esq, offered a prize of £25 for the best collection of bulbs, to consist of not less than twelve varieties, one dozen bulbs in each variety, and to include Trumpet, Incomparabilis, Polyanthus, and Poeticus sections. The bulb and flower associations also offered smaller prizes for classes; the exhibits were not numerous, but the quality, especially in the Polyanthus section, could not be excelled. The bulbs were plump, sound, and perfect in shape, and since then more attention has been paid to the culture of bulbs for export, and now hundreds of thousands are annually sent off to all parts of the United Kingdom, South America, and even to New Zealand, from this island. I sent a parcel to Napier last year, and I have been told that they are doing well in their new home. The climate and soil of the islands are well adapted to the ripening of bulbs. Bulbs grown on the islands for two or three years flower earlier than those imported from Holland. The old favourite, Soleil d'Or, as was originally found growing wild on the islands, is not to be equalled in Holland, or any other country, for colour of perianth and cup. It comes into bloom the first week in January. *J. C. Tonkin, Isles of Scilly.*

JUSTICE *v.* INJUSTICE.—Referring to the paragraph in your last issue, under this heading, we have no hesitation in characterising the decision as a piece of the grossest injustice. The custom through the whole of the nursery trade is to give and take a week's notice, except in the case of foremen, who are generally engaged with the understanding that a month's notice should be given on either side; we feel so strongly on this matter, that if any of your readers will get up a subscription to help the defendant to get his judgment reversed, we shall be very pleased to help. *J. R. Pearson & Sons.*



The Late BENJAMIN S. WILLIAMS.

LESCHENAULTIAS.—With reference to the article on Leschenaultias contained in your recent issue, allow me to thank you very much for it. I visited Messrs. Balchin's Nurseries at Hassocks lately, on purpose to inspect the Leschenaultias, for a friend who was at the great flower show of the Royal Horticultural Society, held in the Temple Gardens, had previously informed me of the extreme floral beauty of a Leschenaultia exhibited by Messrs. Balchin at that show. I was delighted with the loveliness of the plants shown at Hassocks. Mr. Richardson kindly conducted my friend and me over those splendid nursery grounds, and gave us much useful information, especially regarding the culture of Leschenaultias, but being now far advanced in the sere leaf, I am liable to forget verbal statements, so the remarks in the *Gardeners' Chronicle* are all the more valuable, for I have ordered several plants to be sent to friends. *J. Colebrook.*

CREOSOTED TIMBER.—In answer to your enquiry respecting creosoted timber for houses, my opinion is that it depends greatly upon the amount of creosote used. The late Dr. Newington, of Ticehurst, used to construct his houses with timber treated with creosote. His plan was to have a trough made the length required, in which he would lay his rafters, &c., and then pouring the creosote over, allow them to soak for a short time—when the creosote was drawn off. This answered the purpose very well, and no ill results were seen. Some fourteen or fifteen years ago my late father thought he would improve upon that plan, so he had the whole of the woodwork for one house and two pits put into a creosoting tank, as used for treating Hop-poles. The wood was boiled in the creosote, which completely saturated the 4½ inches thick planks. The effect on all kinds of plants was very bad—nothing did well in the house; all the colour was taken out of the flowers, or they were damaged to such an extent as to render them useless; in many instances the buds were spoilt before opening. In order to remedy this we tried several things, varnish, gold size, &c., but nothing would stop the creosote from oozing out. This state of affairs lasted for about two years, after which an improvement set in, and for some years past the plants have not suffered, although some of the planks, exposed to full sun, continue to sweat a little in places. I should advise that a house constructed of creosoted wood should stand empty for a month or two. I now always dress new wood with paraffin, a piece of sappy blue wood being rendered quite hard by having a good application. Labels for outdoor use last twice the time if the ends are stood in paraffin for twenty-four hours. *Ernest Charlton, 37, Pantiles, Tunbridge Wells.*

ARAUCARIA IMBRICATA FRUITING IN THE NORTH OF ENGLAND.—Referring to your Bradford correspondent's article in the *Gardeners' Chronicle* of June 21, under the above heading, I would say that, having recently had occasion to visit in the neighbourhood of Milnthorpe, Westmoreland, I was curious enough to see the Araucaria with its so-called "eight cones." My impression is, that they are not cones at all, but simply the male catkins, which will soon fall to the ground. In the grounds of Underley Hall Park, Kirkby Lonsdale, there is a similar tree, that has at the present moment nearly a hundred of these male catkins hanging in twos, threes, and fours, from the end of the branches. The fertile cones are solitary and erect, and are seldom produced in Britain. *E. W. Gere, Leamington.* [In the south, fertile seeds are frequently obtained. Ed.]

—— In your issue of June 21, reference is made to the fruiting of this species of Conifer in the neighbourhood of Milnthorpe, Westmoreland. I may say a mine captain, who lives about a mile from here, brought to me a few days since a cone of this beautiful tree, which I had not previously heard of fruiting in this neighbourhood. The tree, he told me, is about 20 feet high, and has borne cones for the past three years consecutively. *A. King, Trevarno Gardens, Cornwall.*

THE EARLIEST STRAWBERRY.—I notice several of your correspondents have been giving the name of the Strawberry which ripens the earliest in their respective neighbourhoods. I grow rather a large collection of Strawberries. My soil is very cold, resting on brick-earth, and the position exposed. Both last year and also the present, Laxton's Noble has beaten all others; my first fruit turned colour on June 1, while as a cropper I have not a variety that approaches it. In flavour it is not up to some of the later sorts, but I do not consider this point condemns it, as I notice some do; if so, why not condemn early Peas because they are not so good in flavour as same of the best Marrows? I for my part consider Laxton's Noble the very best early Strawberry ever introduced, for before we had this, it was a very rare occurrence indeed to make 2*s.* and 3*s.* per lb. of fruit grown in the open border, and that without any protection whatever; several this season, when they saw the very fine fruit in my shop window (sixteen to the lb.) would not believe they were grown in the open so early, till they were treated to a view of them growing, and then all with one consent says, "We must have this." *John Green, Dereham, Norfolk.*

SHOW PELARGONIUMS.—To grow specimen Pelargoniums for autumn display, cuttings should have been put in at the latter end of May. These may be potted on as the roots fill the pots, the shoots being stopped a few days after each potting, and put into a cold frame, where they may remain until the autumn, when they will have grown to a useful size in 48-pots. A light airy greenhouse, with sufficient means of heating to exclude frost and damp, will suit them in the winter. Early in March, shift them into 16's, stopping and training the shoots, and

in the early part of May shift them into 4's, and hardening them off gradually towards the end of that month, pinching off all bloom-buds as fast as they appear, and fumigate the house occasionally, to kill greenfly. The Pelagoniums will bear full exposure to the sun by the commencement of June, and should be placed on a bed of coal-ashes in the framing ground. When the pots are well filled with roots, regularly water the plants with weak manure-water, turn the plants round occasionally, so as to get uniformity of growth, and for direct sunlight to reach the wood and ripen it. During warm dry weather it will be of benefit to moisten the coal-ashes round the plants. Encourage the flower-buds to form during August, and discontinue the stopping of the shoots by the end of that month, when, if the plants have been properly managed, they will be fit for the conservatory or exhibition table. A slight amount of shade from bright sunshine will be beneficial as the flowers develop, and allow plenty of air to circulate around them. Free-flowering varieties will be best to choose. *E. Cording, Effra Nursery, West Norwood.*

FLAKING IN FLOWERS.—The Rev. Mr. Wilks, in his beautiful Shirley Poppies, has given to us some singularly lovely hues, but so far no flowers that I have previously seen have broken into a striped or flaked form. I have one plant producing rosy-pink blooms which shows such unmistakeable evidence of flaking, that I cannot doubt but that, in a couple of generations, that form will be presented in the complete way we see it in Carnations, Balsams, Primulas, &c. Flaking is not such a very common feature in flowers, after all, many firmly refusing to break. Probably it is seen in the most perfect form in flaked Tulips, and some of the Balsams are very pretty. Some florists will, perhaps, hold, that it is in the Carnation we must look for the best development of this freak in flower colouring. Striped Pansies are not successes, but are becoming common in the German and Belgian strains. In the Chinese Primrose may be found some pretty but far from effective forms, and we know that flaking in both the Rose and the Chrysanthemum has been a comparative failure, and perhaps happily so. It is odd, that whilst in certain flowers long broken into flaked form we like the bizarre colouring very well, yet with other flowers, long accustomed to find as selfs, we receive flakes and stripes with considerable impatience. A recently introduced novelty was a flaked Columbine—certainly a worthless thing; but a striped Snapdragon is esteemed as very showy and handsome. Eccentric markings are getting bold in the Sweet William, and seem to be very welcome; but we abominate flakes in Stocks and Wallflowers. We have, too, some exceedingly pretty striped Asters, and it will be long ere anyone will produce a Chrysanthemum which equals in correctness of markings the best striped Victorias. There is no reason to doubt that a race of striped or flaked Poppies may not make a pleasing addition to our garden varieties. *A. D.*

THE STRAWSONIZER.—Some interesting experiments were tried, Friday, June 20, with this remarkable machine, on one of Earl Beauchamp's farms near Malvern, before a numerous company of farmers, Hop-growers, fruit-growers, and gardeners. Mr. Strawson, the patentee, who was present, and personally conducted the experiments, addressed the company, and explained the mechanism of the machine, how to obtain the best results claimed for the machine, and which he at once proceeded to demonstrate. He also showed how the machine could be regulated with the greatest nicety and ease, and worked with the minimum of labour. Its original purpose was that of an insecticide distributor, but in addition to its being nearly perfect in that way, it was found to be applicable for the distribution of all kinds of grain, lime, salt, nitrates, bones, and artificial manures generally, each of which was satisfactorily demonstrated before then, scattering some of the substances evenly in broadcast fashion on the ground, and forcing others up in the form of dust or spray on the Hop plants and fruit trees. After demonstrating the usefulness of the machine for dry substances, the hopper was changed for one used with liquids; it was charged with insecticide, which the machine scattered over the land in a nearly invisible spray at first, and afterwards in a denser shower, according to the readjustment. It was next tried on tall Hops, and the upper branches of fruit trees, but this proved to be the least satisfactory, and Mr. Strawson acknowledged that greater power was required than the machine possessed to reach the greater heights. He frankly accepted the various hints and practical suggestions thrown out by those present, which he was sanguine in believing would overcome the partial ineffectiveness of the machine on tall subjects. The driving power is furnished by a fan, and conveyed by means of pipes into contact with the ingredients as they escape from the machine. The fan and all other working parts are set in motion by the horse in hauling the machine. *W. Crump, Madresfield Court.*

STRAWBERRIES OR STRAYBERRIES. — Mr. Shirley Hibberd, in the interesting lecture read by him before the British Fruit Growers' Association on the 27th, on the history of the Strawberry, asserts that the name Strawberry was originally Strayberry, a title derived from the wandering habits of the runners. Is this correct? "Strawberry" may possibly come from the obsolete word to straw, now surviving in the word to strew—

> "Strew! then, oh, strew my bed with rushes."
> *Moore.*
>
> "Strew Roses in her path."

The English name possibly originated from the wood Strawberry, and it is well applied, for the sequestered banks on which it delights to grow are really "strawed," "strowed," or "strewed" with the bright and lively flecks of crimson fruit of this wood-loving plant. *T. F. R.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

Present: Dr. Masters in the chair; Mr. Wilson, Rev. C. W. Dod, Mr. McLachlan, Professor Church, Dr. Oliver, Mr. Michael, Mr. Pascoe, Dr. Müller, and Rev. G. Henslow, Hon. Secretary.

Iris reticulata, protection against fungus upon.—Rev. C. W. Dod described his experiments of dusting the bulbs of this Iris with flowers-of-sulphur before planting them, as well as the ground where they were placed in August, 1889. The remarkable effect was to arrest all attempts at growth, the bulbs being this year exactly in the same state as when planted. Professor Church suggested that the cause of the arrest might be due to a slow oxidation of the sulphur, producing sulphurous acid, which could be absorbed by the tissues, coupled with a consequent deprivation of oxygen necessary for the development of roots.

Blight.—Mr. Wilson remarked on the excessive prevalence of blight this year, Iris Kæmpferi being for the first time attacked by thrips.

Datura Leaves, diseased.—Dr. Masters exhibited some leaves with small spongy-like processes by the ribs, &c. They were referred to Dr. Oliver for examination and report.

Spanish Iris with Supernumerary Parts. — Dr. Masters exhibited some flowers from M. de B. Crawshay with four petals instead of three, and one with a four-celled ovary. The multiplication of parts was connected with the chorisis or bifurcation of the fibrovascular cords supplying the petal and carpel of the organs in question.

Bigener between Raspberry and Strawberry?—Dr. Masters exhibited drawings and specimens of the flower of this remarkable plant, which Mr. Culverwell believes he has raised between the two plants named. It is generally considered to be Rubus Leesii, Bab. The pedicel and sepals are finely setose, but it wants the epicalyx of the Strawberry. Moreover, the carpels of the hybrid are setose and not glabrous. They appear to be abortive. Professor Babington in his *Manual of British Botany* records it as being found at Ilford Bridges, Devon, and Dunster, Som., with a reference to "A. N. H., ser. 2, ix, 124."

Hybrid between the Black Currant and Gooseberry.—He also showed drawings of various organs of this hybrid, also received from Mr. Culverwell. The foliage more nearly resembles that of the Gooseberry, being glabrous except along the nerves of the under surface. The petiole, however, is glabrous, and not hairy, as in the Gooseberry. It has no glands, as the black Currant. The inflorescence is a many-flowered raceme, intermediate in length between the many-flowered Currant and the few-flowered Gooseberry. The flowers are larger than those of either parent, with the sepal lobes erect and not reflexed, as in them. The stamens are contabescent, and the style is villous in the middle, whereas those of the parents are glabrous. The stigma or apex of the style is deeply cleft, those of the parents being sub-capitate and obscurely two-lobed.

Lælia, two-lipped.—Dr. Masters also showed the not uncommon production of two labella in this Orchid.

Antirrhinum with Virescent Corolla.—He exhibited a specimen with the coralla in the form of a calyx, but undertook to examine it further and report upon it.

Bigener Orchid.—Mr. Veitch exhibited an interesting plant called × Epiphronitis Veitchi, being a bigener between Epidendrum radicans, the male parent, and Sophronitis grandiflora, the female. It received a First-class Certificate, and was unanimously awarded a Botanical Certificate by the Scientific Committee.

Calceolarias Dying off. — Mr. Henslow showed plants which had suddenly died in his garden. They had decayed in the lower part of the stem, having the cortex split for a length of about an inch. Mr. Wilks said he was familiar with the fact, and attributed it to the plants having first suffered from drought, and then being overwatered, the sap was thus unable to rise and burst the tissues. Mr. Henslow observed that this interpretation corresponded with the conditions of the case in question. It was a small crimson-flowered variety with hairy foliage. The common yellow coloured species showed no signs of injury whatever.

Pistacia, Lentiscus, Galls on.—Mr. Henslow exhibited branches of this plant from Malta, covered with flat galls formed from the metamorphoses of the leaflets, which had assumed a "leguminous" shape. It is not uncommon in the Mediterranean regions. Mr. McLachlan observed that at least four species of aphides make galls on the Pistachia. Mr. Dod observed that Cicero speaks of the Lentiscus bearing fruit thrice a year, but that this was probably to be explained by the gum being collected three times annually.

Orange, Pistilody of Stamens in.—Mr. Henslow showed specimens of this malformation. It was well known before; but, as Dr. Oliver observed, it appears to be rather more common than usual during the present season.

Caprificus, or Wild Fig.—Mr. Henslow showed fruits of the Wild Fig from Malta, used by the peasants for "caprification" or fertilisation of the autumn varieties of cultivated Figs. Unlike the latter, the Wild Fig, called Duccar, invariably grows in walls or crevices of the rocks. It produces three crops per annum, each supplying a brood of the Blastophaga. The Fig is not required for the summer, for "St. John's" Fig, which ripens about the end of June, the 24th being St. John the Baptist's Day, contains both male and female blossoms. Mr. Henslow could find no male blossoms at all in the first or winter crop of the Duccar. It is not known whether the autumn Figs are entirely female or not; but a Maltese botanist, Signor Gatto, has undertaken to make a thorough investigation upon this and other as yet obscure points involved in the caprification in Malta, as it appears to differ in some respects in other countries.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

June 27.—It having been decided to hold a Conference upon Strawberries in connection with the Royal Aquarium show, members were invited to exhibit as many varieties as possible. The invitation was responded to freely, and though no prizes were offered, 160 dishes of Strawberries were staged by nineteen exhibitors, representing nine counties—namely, Kent, Surrey, Bedford, Cambridge, Hertfordshire, Hampshire, Sussex, Middlesex, and Herefordshire. Great difference was noticeable in the size and quality of the fruit, but some extremely fine specimens were included.

Mr. T. Sharpe, The Royal Strawberry Gardens, Knowle Hill, Virginia Water, had an important and most instructive collection, comprising fifty punnets of exceedingly fine fruits of British Queen, Empress Eugénie, Marguerite, and Sir Joseph Paxton. In size and colour these were unequalled. Three plants of Marguerite loaded with fruits as taken from the ground were shown to indicate their great prolificness at Knowle; one of the boxes constructed to hold four dozen punnets; the baskets employed for gathering from the beds; and a sample of the peculiar soil were also shown by Mr. Sharpe. Fruit and plants were exhibited of a seedling raised from Princess Alice Maud at Knowle, and which is distinguished by a remarkably prolific character; the fruits small, but even and bright in colour. It has been found

useful as an early Strawberry, possessing a rather brisker flavour than the parent variety. A medal was awarded to Mr. Sharpe for his interesting exhibit.

Cultural Commendations were accorded to the following exhibitors:—Mr. C. Goldsmith, gardener to W. B. Waterlow, Esq., High Trees, Red Hill, had a box of sixty grand fruits of Sir Joseph Paxton, and one of Vicomtesse Héricart de Thury, both handsome examples. Mr. Ridgewell, Histon Road, near Cambridge, showed a collection comprising good fruits of the following, with the dates of ripening attached:—Auguste Nicaise, June 11; Unser Fritz, June 12; Eleanor, Captain, June 20; Sir J. Paxton, June 16; President, June 18; Noble, June 7; Countess, June 20; British Queen, June 23; James Veitch, June 15; King of the Earlies, June 5; Marguerite, June 12; Pauline, June 11; and Incomparable, a variety raised from Keen's Seedling, probably crossed with Goliath, and which Mr. Ridgewell describes as a useful variety which he has grown for some time. Six punnets of Sir J. Paxton, as sent to market, were also shown, with twelve punnets of Gooseberries. Mr. E. Butts, Leigham Court Gardens, Streatham, showed two dishes of Vicomtesse Héricart de Thury, excellent fruits, even, and of capital flavour. Mr. Allis, Old Warden Park Gardens, Biggleswade, exhibited two dishes of Noble and Marguerite, the fruit extremely fine in both cases. Mr. W. Bates, The Gardens, Poulett Lodge, Twickenham, showed good fruits of Lucas, President, James Veitch, Noble, and Sir Joseph Paxton. Mr. G. W. Cummins, gr. to A. H. Smee, Esq., The Grange, Wallington, sent dishes of King of the Earlies, Keen's Seedling, President, Sir J. Paxton, and Vicomtesse H. de Thury, all represented by good fruits; and Mr. Wythes, gr. to the Duke of Northumberland, Syon House, Brentford, showed dishes of James Veitch, President, Sir J. Paxton, Keen's Seedling, Noble, Vicomtesse H. de Thury, Dr. Hogg, and Sir Harry. Mr. W. Taylor, Osborn Nursery, Hampton, had three fine dishes of Grove End Scarlet, President, and Sir C. Napier.

Votes of thanks were adjudged to all exhibitors, including the following not already mentioned:—Messrs. Paul & Son, Cheshunt, for La Grosse Sucrée, President, Vicomtesse H. de Thury, Noble, A. F. Barron, Pauline, Sir J. Paxton, Commander, and King of the Earlies; Messrs. Saltmarsh & Son, Chelmsford, contributed Noble, Lucas, Commander, James Veitch, President, and Sir Joseph Paxton; Mr. J. Watkins, Hereford, showed a very interesting collection, comprising seventeen varieties, including, in addition to those already mentioned, Sharpless, Dr. Hogg, Auguste Nicaise, Comte de Paris, Stirling Castle, and The Captain; Messrs. G. Bunyard & Co., Maidstone, sent nine dishes of fine fruits. Mr. T. Laxton, Bedford, showed a large collection of his own and other varieties, with several very promising seedlings; the fruits were arranged in neat square baskets, with a folding handle. Messrs. H. Cannell & Sons, Swanley, sent two peck baskets of Sir J. Paxton, gathered at Swanley and Eynsford respectively, and showing the way in which the fruits are sent to market from Kent. No packing is used, and the rim of the basket is turned inwards an inch or two, so that the baskets can be placed on the top of each other without injury to the fruit. Messrs. Cheal & Son, Crawley, also showed fruits of Sir J. Paxton and Marguerite. Altogether Sir J. Paxton was shown by twelve exhibitors, and Noble by eleven.

THE CONFERENCE.

The Conference proceedings in St. Stephen's Hall, were opened at 5 P.M. by T. Francis Rivers, Esq., who occupied the chair. The programme comprised the following subjects, all of which were ably dealt with:—"The Origin of the Cultivated Strawberry," by Mr. Shirley Hibberd; "The Culture of Garden Strawberries," by Mr. J. Wright; "The Market Culture of Strawberries," by Mr. G. Bunyard; and "Seedling Strawberries," by Mr. T. Laxton, which we here reproduce by the courtesy of the Secretary.

Seedling Strawberries:—When I was invited to read a paper on "Seedling Strawberries," at this Conference, I felt that there might be listeners who would inquire of themselves why seedling Strawberries should require to be separately treated, when the history and cultivation of the fruit is expounded by the able fruitists and writers who have kindly taken those subjects in hand; but looking at our special and most popular summer fruit as almost of an annual character, as it gives its produce from seed more rapidly than any other fruit with which I am acquainted, and to the enormous demand to suit the various tastes and requirements of consumers, I do not hesitate to lay before you a few of the simple facts and slight experiences gathered by me in a period of thirty-two years, during which I have, mostly at intervals of three or four years, continued to raise and work out a batch of seedlings, chiefly by cross-fertilisation. The annual character of the alpine Strawberries, so much appreciated by our French neighbours, is well known, as they are ordinarily and best treated as such, coming fairly true from seed, and the produce generally finer than from runner plants. Our so-called English Strawberries, which probably contain an admixture of the blood of all the edible species, may be treated in a similar manner, and may be more quickly fruited from seed than, I believe, is generally understood. As these are now cultivated in most temperate and semi-tropical climates, and as almost every soil and situation has a peculiarity for some particular variety or varieties, it becomes necessary to provide sorts suitable for these varied climes and localities. In North America, I believe, this has been largely and systematically carried out, with the result that a more vigorous race than we have in most of our English and continental sorts has been secured, for if there be a failing in our many good quality Strawberries, it is chiefly that of weak constitution. The health and vigour of most of the American varieties leads me to look to these as suitable parents to be introduced into our home stud book, for although the American sorts are not all or generally suitable for our moister climate, especially in a wet season, still their great fertility, hardiness, and vigour, combined with good size of fruit, has seemed to me just what we want on this side of the water to keep up the health standard and constitution of the western European varieties, for our cousins, looking at the matter in a practical and profitable way, have excelled us in the production of hardy, prolific, and large-fruited varieties adapted for market and field culture. By the introduction of the American Strawberry blood, we have an alliance of two distinctly acclimatised races, and I cannot but think that such an alliance is equally advantageous for our artificially produced and cultivated fruits, as it has proved for the over-civilised human race. Now, following the lines adopted in America in raising seedling Strawberries, the objects which it has appeared to me that we ought to seek are:—1, Constitution and moderate vigour; 2, fertility; 3, solidity and external firmness to adapt the fruit for transit; 4, flavour and quality; 5, size and appearance.

The latter points many market growers will hold as constituting the blue blood of the Strawberry; while, on the other hand, private gardeners will put quality in the foreground, as Strawberries are grown to be eaten as well as to form captivating works of art. This adds to the necessity for providing a sufficient number and variety of sorts as may be required for the particular purpose. It has been my folly to seek the philosopher's stone, and to blend all the desired qualities in one. I need hardly say that this happy goal has not been attained, and the pleasure may yet be looked forward to by workers in the interesting field of seedling Strawberry raising. But to be practical, what is most wanted now are early, main crop, and late sorts, having good-sized, high-flavoured fruits with a firm exterior, the colour of a bright glossy scarlet, and lasting. The conical or heart-shaped form may perhaps find most favour, but the shape should be regular, the plant hardy, moderately vigorous and sturdy, and fairly productive of runners; a stout footstalk, carrying about ten or twelve even and regular-sized fruits, free of, but not too far from, the ground; the fruits of good and distinct flavours, it not being necessary that all sorts should assimilate in this respect, variety and novelty being desirable to suit various tastes; and, lastly, if these qualities can be adapted to fruits suitable also for forcing, a material gain will be secured.

How these Ends may be Attained.—1. By sowing seed from naturally fertilised, large, and well-shaped fruits, approximating to the above standard or objects desired. Perhaps the varieties Sir Joseph Paxton, Noble, or Auguste Nicaise, may supply what is wanted in the earlier sorts, and British Queen, Commander, President, Dr. Hogg, Loxford Hall, Waterloo, Latest of All, or Eleanor, similar advantages for the improvement of the main and late sorts. 2. By artificially intercrossing the best English and foreign varieties.

Modes of Operation.—The seed may either be sown as soon as the fruit is thoroughly ripened when it may be broken up and the pulp or flesh well washed out and separated from the seed through a fine sieve or piece of muslin, dried, and at once sown in a box of rather light soil, kept moist, and in a shady situation, until vegetation takes place, which will probably occur in two or three weeks. As soon as the plants are large enough to handle, they may be pricked out into boxes, or potted off at once into 72's, and afterwards repotted from time to time or planted out as may be required, or the fruits may be dried in a sunny place and retained until the early spring following, when the seed may be rubbed or picked out and sown and treated as above.

The former method has the advantage of gaining time, and from it I have been able to obtain fruit from some of the seedlings in about fourteen months from sowing the seed. The latter mode avoids the preservation of and carrying through the winter a number of small plants, and the attendant risk of loss from slugs and insects.

I prefer and adopt the former when possible, and time is important; and this I find was the mode preferred by the late Dr. Roden, well known as a successful raiser and improver of the Strawberry. When the seedling plants are strong enough, I usually plant them out in rows about 1 foot to 1 foot 3 inches apart, according to size and vigour, giving 2 feet 6 inches between the rows. This affords a fair opportunity for testing and securing a few runners during the first two years; for although some of the plants may flower and fruit the year following that of sowing the seed, many will not, however, fruit, nor can any be satisfactorily put on further probation until the second year. Where convenient it is a good plan to put out the seedlings by the side of an open walk or path, facing south if possible, as there the plants get ample light and air, and can be readily tended.

How and What to Intercross.—Where it is desired to intercross two distinct varieties or species, the parents should be both healthy and vigorous plants, but not too vigorous, and it will be well for security and convenience that the intended seed-bearing plant should be grown in a pot. The anthers must be removed from the flower to be operated upon with a pair of small sharp-pointed scissors the day preceding the opening and full development, and early the following morning pollen of the sort required, as the male parent, should be applied to the pistils of the intended seed-bearing flower directly from the pollen-bearing flower, and as there is a possibility of the organs not being sufficiently ripe or developed, it may be advisable to repeat the operation a few hours later; but the first access of pollen will usually suffice. When it is clear that fertilisation has taken place, I pinch off all flowers and fruit not required, so as to strengthen those intended for seed. There is also an advantage in potting the plants to be worked upon, as they may be advanced or retarded for use with varieties flowering earlier or later in the open, and the operations can be more safely conducted under cover, the protection of gauze, however, being unnecessary for a many-pistilled flower like that of the Strawberry. It will be wise not to over-fertilise or apply too much pollen, as when many seeds are obtained from a fruit, the whole are generally weaker than when a few well-developed seeds are secured. I have an impression also that an excess of alien pollen tends in the Strawberry to a predominance of the characters of the pollen-bearing male parent.

As to Forthcoming Results, it may be anticipated that as the cultivated Strawberry is a cross-bred fruit, there will be considerable variety as well as some wide breaks in the progeny from intercrossing, but generally the offspring will show characters intermediate between the parents, and with perseverance it will be possible to gain the end sought. Having practised Strawberry crossing so long, however, it is somewhat discouraging to know that Noble, probably the most remarkable break in Strawberries of recent years in this country, was obtained without artistic intervention. I surmise there are some who will like to know its actual origin; such is easily told. In 1884, I grew and sowed the seed from a large and handsome fruit of Forman's Excelsior (a fine and good-shaped, firm-fleshed Strawberry on light soils). From this sowing I only obtained five plants, one of which proved bolder than the rest, and subsequently became "Ennobled;" the remainder were not acquisitions. Now, considering that I have during the past thirty-two years, from my own work of cross-breeding, raised at least 10,000 seedling Strawberries, and out of these only nine have as yet been sent forth to the world, although all have had to be tried, and many, after being largely cultivated for years, have had ulti-

mately to be abandoned, and that out of a small batch of five from natural fertilisation there should be one distinct gain, I feel that the work of a cross-breeder who can only point to such results is not altogether satisfactory, nor, I may feelingly add, profitable. Although Noble was only from natural, or insect, or wind-fertilisation, I am able, with some confidence, to indicate its breed, and that it contains American blood, as the fruit from which it was grown was taken from a row of Forman's Excelsior grown contiguous to one of Sharpless Seedling, a large, early, and vigorous sort, and if the foliage, habit, fruit, and periods of maturity of these two varieties be examined and considered, it will appear tolerably plain that Noble has a good deal of each of these varieties in it, and that the advantages of American blood have been secured without the agency of man. The influence and weight of Noble will, however, doubtless, soon be apparent in forthcoming varieties, for by intercrossing it with all the best varieties, and reversing the crosses in most cases, a large number of seedlings have been obtained, and are on trial. In carrying out my own work, I have found that the seed of Noble is lighter, and does not vegetate so freely as that of the varieties crossed with its pollen, and it may be that to this imperfection of seed the fertility of Noble in quantity and size of fruit may be owing. I have also introduced with success the blood of other American seedlings into my crosses, and I am a believer that, in this introduction of new blood, there is greater probability of further advancing our own home race of Strawberries, a field in which there is yet ample scope for progress.

ROYAL AQUARIUM.

JUNE 27 AND 28.—The Rose Show organised by the Royal Aquarium Company proved very successful, the entries in several classes being very large. Generally, the blooms were good, but only in a few instances was there anything remarkably fine. The new Pink Society and the British Fruit Growers' Association met in conjunction.

In the nurserymen's section, the leading class was for forty-eight blooms, distinct, the 1st place being taken by Mr. B. R. Cant, Colchester, with a very even stand of favourite varieties, as François Michelon, Duke of Wellington, Ulrich Brunner, Etienne Levet, Madame de Watteville, &c. The English Fruit and Rose Company, Hereford, was placed 2nd, following closely with blooms of Senateur Vaisse, Dr. Andry, and Comte de Raimbaud, being fine. In the class for thirty-six, exhibitors in the former were not allowed to enter, and here Messrs. Keynes, Williams, and Co., Salisbury, who led, showed a capital lot of fresh flowers, Madame de Watteville, Madame C. Wood, and F. Michelon, being striking. Messrs. G. Cooling & Sons, Bath, were a good 2nd, with a fine example of Robert Marnock; also Souvenir de S. A. Prince, and F. Michelon. The best lot of thirty-six triplets were from Mr. B. R. Cant, who again showed well, having A. Colomb, Dupuy Jamain, Madame Verdier, and Merveille de Lyon among the best. In the 2nd prize collection, from the English Fruit and Rose Company, Countess of Oxford was well shown.

The amateurs' classes were well sustained, and several of the leading Rose amateurs' were competing. The best collection in the leading class for thirty-six distinct was that of Mr. G. Jordan, gr. to the Rev. H. A. Berners, Harkstead Rectory, Ipswich —a neat fresh lot; Ulrich Brunner, Madame J. Laing, A. K. Williams, and François Michelon being the finest specimens. The Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich, was placed 1st for twenty-four, having a fairly good stand, but a trifle stale; Captain Christy and Baroness Rothschild may be selected. Mr. E. Wilkins, Lyndhurst, Sutton, was 1st, for twelve, with blooms of average quality; the collection of twelve triplets from Mr. E. B. Lindsell, Bearton, Hitchin, which won him the leading place in that class, was composed of very fresh flowers of showy appearance, A. K. Williams, Marquise de Castellane, and Madame G. Luizet being specially good.

Teas and Noisettes were in some stands very well shown, but in a few cases the blooms were stale. Of the delicate colours of the Teas, however, it was impossible to judge, owing to the peculiar colour of the roofing of the Aquarium, which completely destroyed the tints of such flowers as Madame de Watteville and Comtesse de Nadaillac. In the nurserymen's section, Mr. G. Prince, Oxford, had the best eighteen threes, showing a well-grown collection, fresh and bright, in which Comtesse de Nadaillac, Souvenir de S. A. Prince, Rubens, Souvenir d'Elise Vardon, and Catherine Mermet were well represented. Mr. B. R. Cant was placed 2nd, Souvenir d'un Ami, Niphetos, Madame Cusin, and Madame de Watteville being his best. Mr. Cant led for eighteen in single blooms, having a fine Madame Lambard; but the other blooms were perhaps rather old. Mr. G. Prince, who was placed 2nd, had a grand Comtesse de Nadaillac. The Rev. F. R. Burnside, Birch Vicarage, Hereford, had the best twelve triplets in the amateurs' class. They looked very pretty, being set up with foliage, Anna Olivier, Jules Finger, and Madame Cusin were among the best. The Rev. H. A. Berners, who was 2nd, had a finely coloured Ethel Brownlow. He led in the class for twelve singles, showing full bloom specimens, including Madame de Watteville, Anna Olivier, and Caroline Kuster.

In the open classes, exhibits were numerous, and what was undoubtedly one of the grandest lot of Ulrich Brunner that could be grown was shown by the English Fruit and Rose Co. in the class for twelve of any H.P. For any Tea or Noisette, Mr. Prince had highly coloured Comtesse de Nadaillac; Rev. F. R. Burnside had the best yellow in Anna Olivier; the best white was Mr. B. R. Cant's Innocente Pirola, very large; he also had the finest crimson in A. K. Williams. Moss and Provence Roses came from Messrs. Paul & Son, Cheshunt, but they were not quite open.

In the miscellaneous classes a very creditable and noteworthy exhibit was made by C. E. Cutbell, Esq., Dorking, who had a collection of forty-eight single and polyantha Roses of great beauty. Mr. W. Tayler, Hampton, and Mr. W. Rumsey, Waltham Cross, both contributed collections, the latter also having Liliums. Messrs. Paul & Son, Messrs. Barr & Son, and Mr. Such had collections of herbaceous plants, Irises, &c.; and Messrs. Sutton & Sons, Reading, showed border Pinks and Gloxinias, &c.; they also offered prizes for Cucumbers, Mr. A. Newell, Wimbledon, and Mr. Waite, Esher, taking 1st and 2nd respectively.

NATIONAL PINK.

THE exhibition of Pinks carried out by the newly-formed National Pink Society was satisfactory as a representative display, many of the leading flowers being shown in the best character. The exhibition was mainly made by the trade growers. Time was when Pink shows were common in and round London, and in the southern parts of the country; and one main object of this new society is to induce lovers of flowers to take up the cultivation of the Pink. The practice of placing cotton wool in the calyx, so as to give a larger but somewhat deceptive appearance to the flowers, should be rigorously suppressed. It was a disqualification in the old days, and should be so now.

Florists' Laced Pinks.—In the class for twenty-four blooms, not fewer than twelve varieties, Mr. Charles Turner, Royal Nursery, Slough, was 1st, with some very fine examples, having Boiard, Minerva, The Rector, a very fine new variety; Hebe, Emerald, Modesty, Empress of India, Excelsior, Henry Hooper, Eurydice, Rosy Gem, Bertram, and seedlings. 2nd, Mr. F. Hooper, florist, Bath, with some good blooms also, having Boiard, Ne plus Ultra, Modesty, Rosy Morn, Mrs. Darke, a very free and pretty variety; Henry Hooper, Reliance, Princess Frederick William, George White, and Mrs. Barlow, a very pretty rose-laced variety. In the class for twelve blooms, not less than six varieties, the same order prevailed; and again in the class for six blooms, in six varieties, and for six blooms, not less than three varieties.

Single Blooms.—In the classes for these, three prizes were offered for purple-laced, red-laced, and for white and black, the latter having a dark centre, but pure white petals devoid of lacing.

In the class for purple-laced, Mr. C. Turner was 1st, 2nd, and 3rd, with Boiard, and the same in the red class, having Boiard, but with pale lacing, Minerva, and The Rector.

No blooms were staged in the white and black class.

The premier purple-laced Picotee was Empress of India, and the premier red-laced, Boiard, both from Mr. Turner.

Border Pinks.—These, as far as represented by good varieties, are somewhat scarce. In the class for twelve bunches, not less than six varieties, Mr. C. Turner set up a stand of fine flowers, but they were ruled out, owing to the inclusion of laced varieties; Mr. F. Hooper, was, therefore, 1st, having Her Majesty, white; Charmer, pink, with dark centre; Oliver, pale rose, with dark centre; Norah, blush, and rosy-purple centre, and seedlings; 2nd, Mr. R. Dean, Ranelagh Road, Ealing, with some very pretty seedlings from Anna Boleyn and others.

Special prizes were offered by Mr. E. R. Johnson for the best three blooms of any laced seedling florists' Pink not in commerce, Mr. Turner being placed 1st, with The Rector, pure white ground, with deep red lacing—a smooth flower with a finely formed petal; Mr. F. Hooper being 2nd, with Rayner Johnson, purple-laced, large and full. Mr. James Thurstan, Cardiff, offered a special prize for the best stand of six dissimilar laced Pinks, which was awarded to Mr. C. Turner.

RICHMOND HORTICULTURAL.

JUNE 25.—This popular suburban Society enjoyed unusual favour from the weather last week, when the summer show was held in the fine Old Deer Park amidst the huge trees, and in surroundings of the most delightful kind. Very considerably in advance of the entries of the previous year were those at the recent show, which, in all its various departments, was unusually good, and gave to committee and visitors the liveliest satisfaction. The huge tent devoted to plants was well filled, some good trade groups of a honorary kind helping to lend much interest to the exhibition. Of these, Messrs. J. Laing & Sons, Forest Hill, had a capital lot of foliage and flowering plants. Mr. W. Gordon, Twickenham, set up a telling group of Lilies, embedded in Japan Maples; Messrs. Puttock & Shepherd, Kingston, had a very effective collection of stove and greenhouse plants; Messrs. J. Veitch & Sons, Chelsea, a fine collection of hardy cut flowers, with some flowering shrubs; Messrs. Collins & Gabriel, Hampton, also had Pæonies and other hardy flowers in profusion; and Mr. Chambers, Isleworth, showed his capital white Viola Snowflake and perennial Phloxes.

The usual decorative groups proved a more restricted feature than usual, but Mr. W. Brown, of Richmond, took the 1st place with a charming group; Messrs. Fromow & Sons, Turnham Green, being 2nd. Only two groups were set up in the smaller class.

Stove and greenhouse plants in bloom came from Mr. Mould, Pewsey, Wilts, Mr. H. James, and Col. Pepper, Salisbury, but they did not command much attention; some as good came from Mr. Parsons, gr. to T. Twining, Esq., Twickenham; and Mr. W. Bates, Poulett Lodge—local growers—which were also fresher.

Palms, Ferns, and foliage plants, especially Coleus, were in strong force, but are far from being specially attractive. In soft-wooded flowering plants, such as Pelargoniums, Begonias, &c., the tent found its chief attractions. Mr. C. Turner, Slough, had the best six of show and fancy varieties, charming plants of medium size, also the finest group of smaller plants; whilst H. Little, Esq., Twickenham, and W. Clay, Esq., Kingston, had other good collections.

Zonal Pelargoniums were in brilliant form, the best six plants, some 30 inches across, finely flowered, coming from Mr. Coombs, gr. to W. Furze, Esq., Teddington; Mr. Watts, Mr. H. Little's gr., coming 2nd, with larger and wondrously flowered plants; the 3rd prize lot were chiefly doubles, and were less effective than the singles.

Mr. Watts had the best twelve Begonias, really finely-flowered and grown plants. Gloxinias were a marked feature. There were two classes for nine plants; in the one case, Mr. Nunn, gr. to T. Rankin, Esq., East Sheen, had the best, singularly compact, clean, and superbly bloomed plants, of lively colours, and all erect forms; a better lot, so compact habited, has rarely been seen. The other best nine came from Mr. Meaton, gr. to J. B. Hilditch, Esq., Richmond, very large finely flowered plants, well worthy the position.

Orchids were well shown by Mr. Watts, who had the best six pieces, with Cattleya Mendelii, C. Mendelii fimbriata, Lælia purpurata, Oncidium thyrsifolium, Cypripedium Lawrenceanum, and C. barbatum superbum. Mr. Young, gr. to F. Wigan, Esq., East Sheen, and Mr. H. James exhibited also. Mr. Watts put up a very fine lot of Cattleyas, Cypripediums, &c., in variety. With decorated baskets of plants, Mr. Goodwin, Twickenham, was 1st, and Mr. Little, 2nd.

Cut Flowers.—Turning to the cut flower tent, the chief feature of which were Roses, table-stand bouquets, &c., the trade growers made a fine show

with the former flowers, as usual. Messrs. Paul & Sons, Cheshunt, came 1st, with thirty-six trebles, a capital lot of early flowers, comprising all the best show varieties; Mr. B. R. Cant, Colchester, was 2nd; and Messrs. Burrows, of the same place, were 3rd. In the class for twenty-four trebles, Mr. Cant came 1st, with charming blooms; Messrs. Paul & Sons, 2nd; and Messrs. J. & W. H. Burch, Peterborough, 3rd. With twenty-four singles, for amateurs, Mr. W. E. West, Reigate was to the fore, with medium-sized but elegant flowers; as also in the class for twelve blooms, his 2nd in each case being Mr. Warwick, gr. to J. P. Kitchen, Esq., Hampton. Mr. C. Turner, Slough, had the best twelve Teas. The local Rose classes were well filled. Messrs. Veitch & Sons, Messrs. Jackman & Son, Woking, and Messrs. C. Lee & Sons, Ealing, showed fine collections of cut flowers.

Table stands, baskets, bouquets, &c., were in great force. Messrs. Perkins, of Northampton, and Mr. J. R. Chard, being the chief trade exhibitors in competitions; whilst Mr. W. Brown, Richmond, had some beautiful crosses, wreaths, bouquets, &c., a kind for which he is so famous.

Fruit made an excellent display. With six dishes, including capital Black Hamburgh and Buckland Sweetwater Grapes, Peaches, Nectarines, &c., Mr. Osman, gr. to L. J. Baker, Esq., Chertsey, was 1st; Mr. W. Bates being a good 2nd. In the class for black Grapes, Mr. Thompson, gr. to Messrs. Wells, Hounslow, was 1st, with capital Madresfield Court, finely finished; Mr. Osman being 2nd, with Hamburgh. With white Grapes, Mr. Feist, gr. to R. J. Ashton, Esq., Englefield Green, was 1st, with very fair Muscat of Alexandria; Fosters' Seedling, from Mr. Greenwell, Marden Park, being 2nd. Mr. Bates had the best black Grapes from local growers; and Mr. Campbell, gr. to Dr. Wood, best white Grapes in Foster's Seedling. Melons were small, and not good. The best dish of Nectarines was found in Lord Napier, and Condor was the best Peach. A superb lot of fruits from Mr. Rivers, Sawbridgeworth, attracted great notice. This was comprised of black Cherries, Early Rivers, Bigarreau De Schreken, and Black Hawk; and of whites, Ludwig's Bigarreau Governor Wood, Bigarreau Van Streuse, and Monstreuse de Mezel; and of reds, May Duke. Also there were Grand Duke, red; and Transparent white Plums; various Peaches, Nectarines, &c.

Vegetables were in fine form, and Mr. Waite, gr. to the Hon. Col. Talbot, Glenhurst, Esher, was again the champion exhibitor, he taking 1st prizes in the class for twelve kinds in Messrs. James Carter & Co.'s class for nine varieties; and in Messrs. Sutton & Son's class for six varieties, showing in each case capital samples. Mr. D. White, Redlees Gardens, Isleworth, was a good exhibitor also, as were Mr. Hilditch, Twickenham; and Mr. Coombs, East Sheen House. Numerous classes for amateurs and cottagers were well filled, but do not here call for notice.

ROYAL OXFORDSHIRE HORTICULTURAL.

The Commemoration Flower Show of this Society took place in the gardens of St. John's College on June 27.

Stove and Greenhouse Plants.—Certain classes open to all brought some fine subjects. The best nine stove and greenhouse plants came from Mr. J. Cypher, nurseryman, Cheltenham.

In the members' classes the principal exhibitors of stove and greenhouse plants were Mr. G. Jacob, Witney; Mr. C. Jacob, Barton; and Mr. J. Mattock, Headington, clean and well-grown plants generally being staged.

Orchids.—A fine collection, contributed by Mr. Whillans, gr. to His Grace the Duke of Marlborough, Blenheim; the plants were small, but finely bloomed. Among them were Dendrobium suavissimum, D. Dearii, Cattleyas Harrisoniana, gigas, Gaskelliana, Mossiæ, Mendelii, Warneri, and Acklandiæ; Cypripediums selligerum majus, grande, and superbiens; Lycaste Deppei; Lælias purpurata and elegans; Anguloa Ruckeriana, Vanda teres, Masdevallia Harryana, &c. These were prettily set up with Ferns and Palms.

In the class for four Orchids, Mr. G. Jacobs was 1st, with Lælia purpurata, Cattleya Mendelii, Cypripedium lævigatum, and Odontoglossum Pescatorei; 2nd, Mr. R. Price, Headington, with Dendrobium suavissimum, D. Dearii, Cattleya Mendelii, and Cypripedium barbatum superbiens.

Other plants included good Ericas in sixes, from Mr. J. F. Mould, Nurseryman, Pewsey, who was 1st, and Mr. J. Cypher, 2nd. Gloxinias, Achimenes, in capital specimens from Mr. Robins, The Gardens, Hartwell House.

Fuchsias and Exotic Ferns, Mr. C. Jacob had the best six specimens.

British Ferns, Mr. John Walker, Thame, had the best six Pelargoniums of various types.

Cut Flowers.—The leading features were Roses and hardy Perennials. Irises made a very pretty display, and some charming varieties of the Spanish type were shown by Mr. W. F. Cross, Oxford, and Mr. G. D. Meadows. A remarkably fine stand of twelve bunches of hardy Perennials was staged by Mr. R. Price, a bold and striking exhibit. Such fine subjects as Cypripedium spectabile, Delphinium Madame H. Jacotot, white and purple martagon Lilies, Scabiosa caucasica, Onosma taurica, and Heuchera sanguinea being amongst them.

Fruit was represented by excellent black and white Grapes, Colonel Miller, Shotover, being 1st, with Muscat of Alexandria; and Mr. A. Wykeham, Musgrove, 2nd, with Black Hamburgh. Mr. T. Lockie was 1st with Peaches, having fine Magdala, and also with Lord Napier Nectarine. Good Strawberries, Cherries, and Melons were shown, and Mr. Lockie was 1st, with a fine brace of Carter's Model Cucumber.

Vegetables filled many square yards of tables, and were very fine. Much interest centered round the exhibits for the special prizes of Messrs. Sutton & Sons, of Reading, and E. Webb & Sons, Wordsley, which consisted of collections of six dishes. In both competitions the 1st prizes were awarded to Mr. W. Pope, Highclere Castle Gardens; Mr. T. Lockie occupying a similar position with 2nd prizes, and excellent vegetables were staged in each. The competition was very keen.

TORQUAY ROSE SHOW.

June 25 and 26.—This exhibition was held in the grounds of the Devon Roseries (Messrs. Curtis, Sandford, & Co.), who offer valuable prizes for cut blooms of Roses, supplemented by a large addition of prizes from the Torquay Horticultural Society. The admission to the exhibition is free to all, but collecting-boxes are placed among the exhibits, and in conspicuous parts of the nurseries. The sums thus collected are all devoted to the Devon Rosery Gardeners' Relief Fund, and it is very gratifying to know that considerable sums are thus obtained, which have enabled the committee, after relieving thirty-five cases, during the past year, of gardeners, or widows of gardeners, to carry over a balance. The duties and arrangements for the exhibition are all carried out by willing and sympathetic friends, gratis, Dr. Ramsey being the President, Mr. Chandler, Hon. Secretary, and Captain W. Fane Tucker, Treasurer, aided by a strong committee, all enthusiastic horticulturists.

Thirty-six Roses, distinct.—1st, Mr. Bradbury, gr. to S. P. Budd, Esq., Bath, whose Roses were in splendid condition; 2nd, Mr. J. French, gr. to Moreton Sparks, Esq., with a very good lot of fresh blooms.

Twenty-four distinct varieties, one truss of each.—1st, Mr. J. Sloman, gr. to Captain Fane Tucker, with a capital lot.

Twelve varieties, distinct, three trusses of each.—Here again Dr. Budd was an easy 1st, with excellent blooms.

Messrs. Curtis, Sandford & Co. exhibited about two dozen boxes of splendid blooms of Roses; Messrs. R. J. Veitch & Son, of Exeter, were present with boxes of superb cut blooms of double and single Tuberous Begonias, Carnations and Picotees, Pansies, &c., with a number of boxes of annuals and herbaceous flowers in great and choice variety.

Special prizes for Roses were offered by Messrs. Curtis, Sandford & Co., Dr. Budd winning in the Tea classes, and Mr. W. Alder in that of H.P.'s.

The Torquay Horticultural Society's special prizes, for a group of Stove and greenhouse plants, fell to Mr. Sloman and Mr. Slatterly, who were 1st and 2nd respectively.

Mr. Sloman was 1st for cut flowers from the greenhouse and stove, and Mr. Ferris for blossoms of zonal Pelargoniums.

Mr. J. Coombes of Pilmuir, staged a grand collection of fruit, of very large Strawberries of Dr. Hogg and Sir Joseph Paxton; Peaches, Tomatos, Oranges, and Lemons. Messrs. J. Hawkins & Pearce also staged a quantity of very fine fruit.

D. C. P.

CROYDON.

July 2.—The twenty-third summer show was held in the large grounds of Brickwood House. Roses are a feature of the shows of this Society, and, despite the rough, rainy weather which has prevailed of late, the blooms were very fine. In connection with the show, a Rose fair in aid of the Gardeners' Orphan Fund was held, by which the sum of £15 11s. was realised.

Mr. Frank Cant, Colchester, was placed 1st for forty-eight rare blooms, distinct (nurserymen), winning, in addition to cash, the National Rose Society's Gold Medal; they were a very fresh and clean lot, in which Viscountess Folkestone, Madame Montet, Xavier Olibo, Duke of Wellington, Madame de Watteville, and Merveille de Lyon, were the best. 2nd, Mr. B. R. Cant, Colchester, who followed up closely, having a good Niphetos, Heinrich Schultheiss, Victor Hugo, and Madame Cusin.

In the class for twenty-four triplets, the foregoing order of merit was reversed, Mr. B. R. Cant having his blooms also arranged with much taste.

Messrs. J. Cheal & Sons, Crawley, Sussex, had a stand of twenty-four singles, and was placed 1st for blooms of fair quality. Mr. F. Cant was again to the fore with twelve Teas or Noisettes (thereby taking the Royal Horticultural Society's Flora Medal), with a capital lot, in which were Rubens, Souvenir d'un Ami, Souv. de S. A. Prince, and Comtesse de Nadaillac. The best twelve of any one variety was also from him, having Mrs. J. Laing in good samples.

In the amateurs' and gardeners' classes, open to all England, Mr. A. J. Brown, gr. to Mrs. Waterlow, Great Doods, Reigate, swept the board, and he deserves much credit for the fine blooms staged. The collection of thirty-six, for which he received the Challenge Cup, value 25 guineas, was of uniformly good form and fresh. Innocente Pirola, Her Majesty, Captain Christy, Mrs. J. Laing, Ulrich Brunner, General Jacqueminot, and Comtesse de Nadaillac may be named. Mr. Brown was also 1st for six distinct in threes, where Her Majesty and Dupuy Jamain were striking; for twelve of one variety, showing Mrs. J. Laing; and again for twelve Teas or Noisettes, distinct, in which were Catherine Mermet, Princess Beatrice, and Caroline Kuster.

The Silver Flora Medal of the Royal Horticultural Society, offered for the best box of Teas, another for the best box of H.P.'s, and the National Rose Society's Medal for the best bloom, all went to Mr. Brown—the last-named for a bloom of Mrs. J. Laing shown in the thirty-six. Mr. C. J. Salter, gr. to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, was 2nd for the thirty-six, but came in 1st for twenty-four with well-grown, solid flowers, his best being François Michelon, Merveille de Lyon, Countess of Oxford, Baroness Rothschild, Mrs. J. Laing, and Alfred Colomb. Mr. West, Reigate, was 2nd for twenty-four, and Mr. E. Wilkins, Lyndhurst, Sutton, 1st for twelve, with a neat lot, Dupuy Jamain and Etienne Levet being fine.

In the local classes (open only to those resident within the Borough of Croydon) the best blooms were shown by C. J. Grahame, Esq., who won several prizes, including a Challenge Cup and the National Rose Society's Silver Medal, both offered in the class for six blooms, distinct; he also received the Silver Flora Medal of the Royal Horticultural Society offered for Teas, and the National Rose Society's Silver Medal for the best bloom, winning it with a fine example of Her Majesty. Among his best flowers were Ulrich Brunner, Madame Bravy, Countess Folkstone, Merveille de Lyon, and Baroness Rothschild. Mr. Dart and the Rev. W. Wilks also showed well in this section.

Plants were well represented by Mr. W. King, gr. to P. Crowley, Esq., Wadden House, Croydon, who had specimens far ahead of any others in the show. The plants staged by him in the classes for nine stove and greenhouse, in flower, nine ornamental foliage, stove and greenhouse, and six exotic Ferns, were highly creditable examples of fine cultivation. Among the best were Alocasia macrorhiza variegata, Anthurium crystallinum, Dieffenbachia Bausei, Clerodendron Balfourianum, Boronia elatior, Ixora Williamsi, Davallia philippensis, D. Mooreana, D. polyantha, and Nephrolepis davalloides furcans. Mr. King was also 1st for a group of plants arranged for effect in 100 feet (with Mr. James, Castle Nursery, Norwood, placed equal), for Dracænas, for Selaginellas, and for a specimen ornamental foliage plant, showing a capial Phœnix grandis. Mr. James had the best specimen flowering plant in Erica jubata rubra.

Mr. F. Simmonds, Surbiton; Mr. H. Elsey, Croydon; Mr. C. Welstead, Bromley Hill; Mr. W. Jupp, The Waldrons, Croydon; and Mr. W. Wooldridge, South Norwood, were also successful exhibitors.

In the vegetable classes, Mr. Jupp was the principal prizetaker, having fine specimens.

Grapes were very good, Mr. G. Clinging, Marden Park, having the best black in highly-finished Black Hamburgh; and Mr. Blurton, Kingswood Warren, the finest white in Muscat of Alexandria. Mr. Simmonds had fine Royal George Peaches, and Mr. Clinging showed a creditable collection of fruit.

THE SCOTTISH PANSY SOCIETY.

The forty-sixth annual show of this Society was held in Dowell's Rooms, George Street, Edinburgh, on the 20th inst. Compared with previous shows, this stood out favourably with regard to entries, the total number being 234. Notwithstanding the prevalence of cold dry winds and frequent heavy showers of rain during the fortnight prior to the show, the quality of the flowers was generally good, and competition in many of the classes was keen. Violas were a bright and striking feature. Amateurs in the north appear to be year by year appreciating more and more the fine decorative qualities of these beautiful and varied flowers, and this season the competition was, in the amateurs' classes, in excess of former shows in the numbers of entries, in the quality of the flowers, and in the taste and style of their setting up. In connection with this feature of the show, the nurserymen's exhibits, though only three in number, were striking examples of what such exhibits should be.

The twenty-four varieties, distinct, in bunches not exceeding nine blooms of each, set up by Messrs. Dicksons & Co., by Messrs. Laird & Sons, Edinburgh, and by Messrs. R. B. Thomson & Co., Glasgow, were very much admired. The former firm received the 1st prize, the latter the 2nd, in what was regarded as a very close competition. In the stand of Messrs. Dicksons & Co. were two promising seedlings, named respectively, H. M. Stanley and Dorothy Tennant; and in Messrs. Laird's stand Rosy Morn, Neptune, and Rifleman were striking in character and colour; Messrs. Thomson & Co. took 3rd prize.

In the nurserymen's classes of show Pansies, the growers from the western parts of the country had all their own way. Mr. A. Lister, Rothesay, took 1st honours in the class of twenty-four blooms, distinct; Mr. J. Sutherland, Lenzie, was a good 2nd; and Mr. M. Campbell, Blantyre, a close 3rd.

Twenty-four fancy Pansies, dissimilar, brought M. Campbell to the front with a fine lot, remarkable for the size of the blooms and purity of their colours. Mr. John Smaillie, Bushby, and Mr. A. Irvine, Tigh-na-bruaich, taking 2nd and 3rd honours respectively.

The class of six seedling show Pansies, dissimilar, only brought one stand of merit, which was from A. Irvine, and was considered sufficiently good by the judges to merit the 1st prize.

Gardeners' Classes.—These were contested for chiefly by the men of the west, only one eastern grower holding his own against five from the other part of the country, and one also from Urie, Kincardineshire. Mr. A. Borrowman, Beeslack, Midlothian, took 1st honours with the best eighteen show varieties, the 2nd and 3rd falling to Mr. R. Stewart. Lenzie, and Mr. A. Reid, Urie, in their order. For the best twelve show varieties Borrowman was again placed 1st, with Mr. C. Dalgarne, Lenzie, and R. Stewart 2nd and 3rd in order. For the best six show Pansies, Mr. A. Gilchrist, Glazertbank, A. Borrowman, and R. Stewart shared the honours in the order named. The best eighteen fancy Pansies brought R. Stewart to the front, with A. Borrowman a good 2nd, and Mr. A. Hay, Linlithgow, 3rd. The best twelve fancies placed C. Dalgarne 1st, with A. Borrowman 2nd, and R. Stewart 3rd. The best six fancies placed R. Stewart in the 1st position, Borrowman being 2nd, and A. Reid 3rd. The best twelve bunches of bedding Violas were put up by A. Gilchrist, the 2nd by Mr. J. Baxter, Daldowie, and the 3rd by A. Hay.

Amateurs' Classes were keenly contested, and made up a very large section of the show, no fewer than nine competitors entering the lists in some of the larger classes. Messrs. Storrie, Lenzie; Ross, Laurencekirk; Kay, Gargunnock; McKenzie, Gargunnock; Kemp, Motherwell; T. Ritchie, Penicuick; Captain King, Lennoxtown; and Frater, Linlithgow, were the principal prize-takers in the several classes.

In the classes open to gardeners and amateurs, C. Dalgarne, A. Borrowman, W. Frater, T. Ritchie, A. Kemp, and G. Ross were the successful competitors.

Open Classes formed the chief feature of the show, but space forbids doing more than name the class and the winners. The Gold Medal for the best twenty-four seedling fancy Pansies (owned by the competitor, including those put into commerce by him in 1890), A. Irvine.

The best twenty-four fancy Pansies, dissimilar, John Smaillie. Nine show and nine fancy Pansies, dissimilar, A. Lister. Six seedling Violas, in bunches of three blooms each, J. Baxter. Six bunches bedding Violas, not less than nine blooms each, Dicksons & Co. Three seedling show Pansies, and three seedling fancy Pansies, dissimilar, J. Smaillie. Six seedling fancy Pansies, A. Irvine. Three blooms F. P. Donald Morrison, J. Smaillie. Three blooms Mrs. Freeland, Mr. Robt. White, Bathgate. Three blooms Campbell Bannerman, James Mosman, Donibristle. Three blooms Alex. Smith, and three blooms Wm. Ross, M. Campbell. Three blooms Mrs. Browell, C. Kay. Six show and six fancy dissimilar, J. Smaillie. The best show Pansy in the Hall (Wm. Fulton), Mr. J. S. Ritchie, Denny. The best fancy Pansy in the Hall (M. A. Scott), Mr. A. Bailey, Sunderland. The best dark self show (Wm. Fulton), J. S. Ritchie. The best white self (Miss Kay), C. Kay. The best yellow self (Maggie Thomson), J. McKenzie. The best yellow ground, A. Borrowman. The best white ground (Lady Seafield), J. Beatson, Alva.

Ladies exhibits and competition for decorative designs for rooms, &c., in which Violas and Pansies alone formed the floral elements, were very bright and attractive.—Miss McKinnon, Viewforth; Miss Jane Greive, Pilrig Cottage; Mrs. R. Laird; Miss Bessie Lee, Liberton Mains; Miss Ruby Laird, Pink Hill; and Miss Rettie King, Glazertbank, were the successful competitors.

First-class Certificates were awarded to the following:—A. Bailey, Sunderland, for F. P. Robt. Paterson; A. Irvine, for F. P. David Rennie and F. P. Agnes Mabel; A. Lister, for F. P. Wm. Steel; Dicksons & Co., for white ground Mrs. Dick; Captain King, for Anna King Viola; J. Baxter, for Goldfinch Viola; J. S. Ritchie Dennie, for white self unnamed; and to M. Campbell, for yellow ground Andrew Brown.

The President's prize—a barometer—to the competitor who took the largest number of prizes offered by the Society, was awarded to A. Borrowman.

EDINBURGH BOTANICAL.

June 12.—The Society held its second summer meeting this evening, at the Royal Botanic Garden, under the presidency of Mr. Lindsay.

Mr. George W. Traill presented an elaborate monograph on "The Marine Algæ of Orkney," while Mr. Philip Sewell sent "Observations upon the Germination and Growth of Species of Salvia in Mr. Hanbury's Garden at La Mortola, Italy." Dr. David Christison communicated the notes on tree-measurements made by Mr. Hall at San Jorge, Uruguay, monthly, from January 12, 1885, to January 12, 1890. Mr. Lindsay exhibited heterophyllous varieties of Quercus Ilex, sent by Captain Dundas, of Auchtertyre, which looked externally different species, though in reality one.

The following plants, in flower, were exhibited from the Royal Botanic Garden:—Hippeastrum solandræflorum, Streptocarpus Dunnii, Ramondia pyrenaica, Saxifraga nepalensis, S. McNabiana, S. mutata, Cheiranthus Allionii, Dianthus glacialis, Heuchera sanguinea, Celsia cretica, Leontopodium alpinum, Ranunculus bilobus, Onosma taurica, Erinus hispanicus, Genista pilosa, and Accras anthropophora.

Mr. John Campbell, Ledaig, Argyllshire, sent cut blooms of Olearia argophylla and Cytisus fragrans from the open, and fruit of Black Prince Strawberry. Cytisus Adami, from Hopetoun House, exhibited by Dr. MacFarlane.

Report of Success of Vegetation at Royal Botanic Gardens, Edinburgh, for May, 1890. *By R. Lindsay, Curator.*—The past month has been one of the most favourable experienced for some years. No actual frost occurred, which is somewhat unusual for May. Vegetation made rapid progress, and in the absence of frost or severe winds, has gone on advancing in the most satisfactory manner. The foliage of most of the ordinary deciduous trees and shrubs is now in perfect condition, being very luxuriant and healthy. The flowering of nearly all kinds of ornamental trees and shrubs is far above the average this year. Nothing could well exceed the richness and profusion of blossoms displayed by the various varieties of Hawthorn, which were in full flower by the end of the month, and thus for once justifying the name of Mayflower. Rhododendrons, Azaleas, Horse Chestnut, Laburnum, and the various species of Pyrus and Prunus were remarkably fine and effective. Holly is flowering very freely, giving promise of a good crop of berries this year. Early flowering herbaceous and bulbous plants have developed abundance of fruit, particularly Hellebores, Scillas, and Corydalis, the capsules of which are already ripe, and contain good seed. The lowest night temperature registered at the garden was 33°, which occurred on the 31st of the month. Other low readings were registered on the 2nd, 38°; 14th, 36°; 27th, 34°; 28th, 37°. The lowest day temperature was 48° on the 10th, and the highest, 71°, on the 28th of the month. The rock garden was quite brilliant during the month, 365 species and varieties came into flower, while a large proportion of those that began to flower during the previous month were still in good condition.

Record of Temperature, Vegetation, &c., at the Botanic Garden, Glasgow, May, 1890. *By R. A. Bullen, Curator.*—The month as a whole was fine and favourable for garden work of all kinds. No frost was registered during the month, the lowest reading was 37° during the night of the 30th, consequently vegetation has grown steadily on, and the foliage of the early leafing trees is very fine. Although the mean night temperature of the month closely corresponds with that recorded for May last year, the day readings were much lower, particularly in the sun. Considerably the highest day readings in the shade were 68° and 67° on the 23rd and 24th, the highest in the sun was 86° on the 23rd. The numerous cool nights and sunless days had the effect of keeping late-leafing trees, such as the Ash, in a backward state, and all kinds of trees are prolific of bloom. Great numbers of hardy herbaceous plants are early in bloom, but annuals are very backward.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Accumulated. Above (+) or below (−) the Mean for the week ending June 28.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (−) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	2 —	67	0	+ 138	— 73	2 +	125	23.8	25	26
2	2 —	83	0	+ 44	— 58	1 +	106	13.8	37	30
3	1 —	104	0	+ 46	— 93	2 —	89	9.9	25	27
4	1 —	124	0	+ 14	— 39	1 +	93	10.3	38	36
5	1 —	117	0	+ 1	— 26	0 av.	86	10.1	27	31
6	1 —	120	0	+ 11	— 68	2 +	88	12.2	33	33
7	2 —	88	0	+ 55	— 73	2 +	110	23 8	28	31
8	2 —	104	0	+ 59	— 81	0 av.	101	14.7	28	29
9	1 —	112	0	+ 16	+ 12	1 +	104	17.3	38	35
10	3 —	92	0	+ 35	— 55	2 +	116	15.1	26	31
11	2 —	104	0	+ 46	— 14	2 +	117	21.2	28	33
12	1 —	111	0	+ 98	— 22	1 +	109	15.8	36	41

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending June 28, is furnished from the Meteorological Office :—

"The *weather* was fair at many of our southern and eastern stations during the first few days of the period; but unsettled and showery in the west and north. As the week advanced, the rainy conditions extended to all parts of the kingdom, and became more pronounced. During the 24th to 26th a thick wet fog was experienced at nearly all the Channel stations. Thunderstorms occurred in many parts of England on the 27th or 28th, as well as at some of the Scotch stations.

"The *temperature* has been below the mean in all districts, the deficit having ranged from 1° in most of the English districts to 2° in Scotland, and 2° or 3° in Ireland. The highest of the maxima were registered in most districts either on the 24th or 25th, when the thermometer rose to 77° in 'England, E., and S.,' to 75° in the 'Midland Counties,' and 'England, S.W.,' and to between 67° and 74° in most other districts. During the greater part of the week the daily maxima were very low for the time of year. The lowest of the minima were recorded in most places during the latter part of the week, and ranged from 36° in 'Scotland, E., and W.,' to 45° in 'England, S.' and to 49° in the 'Channel Islands.'

"The *rainfall* has been less than the mean in 'England, N.E.,' and has only equalled it in the 'Midland Counties,' and 'England, N.W.;' in all other parts of the kingdom the normal amount has been exceeded.

"*Bright sunshine* has again been very little prevalent, the percentage of the possible amount having ranged from 25 in 'Scotland, N., and 'Engand, N.E.,' to 36 in the 'Channel Islands,' 37 in 'Scotland, E,' and 38 in 'England, E.,' and 'England, S.W.'"

AZALEA ODORATA.

AMONG the many Azaleas and Rhododendrons that have attracted us during the past few weeks, there is one worthy of special note because of its comparative rarity, and the beauty and fragrance of its flowers. The one I allude to is that known under the various names of A. odorata, A. fragrans, Rhododendron azaleoides, and R. ponticum subdeciduum. All these names are given to it in gardens and nurseries, but the one by which it seems to be most generally known is A. odorata. It is an old plant, and Loudon states, in the second edition of his *Arboretum*, that it originated about the year 1820; also that it is a hybrid between Rhododendron ponticum and some species of Azalea with fragrant blossoms. There is, I think, no doubt about its hybrid origin, as the characters of its alleged parents are plainly indicated. Some varieties of it most resemble R. ponticum, by the broad, deep green foliage and deeper purple blossoms; while others, by the semi-deciduous character of the pale green foliage and the pale flowers, seem to have more affinity with the deciduous Azaleas. I have just had a good opportunity of examining the varieties, through the kindness of Mr. Noble, of Sunningdale, who has sent me specimens of each of the forms of the shrub he grows in his nursery collection. In all the forms the flowers are strongly fragrant, but they vary a good deal in the colour of the flowers, and in the texture as well as the depth of green of the foliage. One has flowers so much like the ordinary R. ponticum, as to be scarcely distinguishable except by its fragrance and the thinner leaves, but there is a great difference between this dark form and the lightest coloured, which is very beautiful. The flowers are white, with the petals broadly margined with a delicate rose-pink, while the foliage is pale green above, slightly glaucous beneath, and very much thinner than that of R. ponticum or the dark variety. This pale form is the one I should like to see become more popular, and it will flourish anywhere where other Azaleas will. There was a great mass of it in full bloom in the geometrical shrub garden on the west side of the Palm-house at Kew, and the fragrance of it and the delicate colour was most attractive to visitors. It begins to flower after the full flush of the Ghent Azaleas is past, which is an advantage, and it continues for a long time in beauty. It is not so dense a growth as R. ponticum, and though it is not perfectly deciduous, it drops some of its leaves, and becomes thin in growth in winter. To enjoy its beauty it should not be associated with either the fine hybrid Rhododendrons or the more brilliant-hued Azaleas, but should be grouped in a quiet spot by itself either in a mass or combined with such a shrub as Andromeda speciosa. At Kew the scarlet Lilium pomponium rises out of the mass, which has a pretty effect, though it is too violent a contrast to be quite pleasing. It is one of the shrubs you often see in the great Rhododendron nurseries, but seldom in private gardens, and that is why, I think, attention should be drawn to it. *W. Goldring.*

Obituary.

MR. GEORGE DEAL.—It is with very great regret that we announce the death, on the 30th ult., of Mr. George Deal, in his fifty-seventh year. Mr. Deal had for many years been connected with the well-known firm of John Weeks & Co., horticultural builders and hot-water engineers of Chelsea, and for the last twenty-two years had been one of the partners in the firm. Mr. Deal, by his unflagging energy and skill, had largely extended the business, and was the author of numerous improvements in hot-water arrangements. But these are matters of business, in which he was working in his own interest. He will be longest known for the earnest manner in which he threw himself into the business of founding and subsequently of managing the Gardeners' Orphan Fund. Here his business talents, his genial disposition, and his desire to do good, had full scope, and his loss must prove a severe blow to the young Institution, which he had the satisfaction of seeing through the initial stages, and well on the road to a successful and beneficent future. Mr. Deal also gave valuable assistance in the rehabilitation of the Royal Horticultural Society, consequent upon the eviction of the Society from South Kensington; and his business capabilities, kindliness of manner, and tact, led us to hope that his services to horticulture might be extended in the future; but it has been willed otherwise. Mr. Deal was seized with an apoplectic attack on April 9 on the platform of the railway station, and although he rallied for a time, he at last succumbed. The funeral takes place this day at Woking, the train leaving Waterloo at 11 45.

F. N. DANCER.—We also regret to have to record the death of Mr. Francis N. Dancer, in his 75th year, which occurred at Gordon Road, Ealing, on June 29. Mr. Dancer, who has been ill for a considerable time, was some few years ago a well-known member of the Royal Horticultural Societies Fruit Committees; he was formerly in business as a market gardener at Chiswick, and was one of the leading members of that trade in Middlesex.

VARIORUM.

BIOGRAPHICAL INDEX OF BRITISH AND IRISH BOTANISTS.—From the list of those published in the *Journal of Botany* for May, we extract the following as being interesting to horticulturists :—

"PLOMLEY, FRANCIS (1805 ?–1860): d. Maidstone, Jan. 9, 1860. F.L.S., 1845. Lectured on Botany to Weald of Kent Farmers' Club, 1849–51. Proc. Linn. Soc. 1560–61, xlii.

"PLOT, ROBERT (1640–1696): b. Sutton Baron, Borden, Kent, 1640; d. same place, April 30, 1696; bur. Borden. B.A., Oxon. 1661. M.A., 1664. D.C.L., 1671. F.R.S., 1677; Sec., 1682. First Keeper of Ashmolean Museum, 1683. Mowbray Herald, 1695. 'Nat. Hist. of Oxfordshire,' 1677. Nat. Hist. of Staffordshire,' 1679. Plants in Hb. Sloane, cxiii. Pult. i., 350; Jacks., 592; Nich. Anec., ix., 547; Gent. Mag., lxv., 1089; Lhwyd's 'Nat. Hist.,' ed. 2; Hasted, 'History of Kent'; Allibone; Chalmers; Hoefer; Rose; Michaud. Oil portr. in Bodleian Gallery. Engr. in Hope Collection. Portr. in 'Oxford Almanac,' 1749. *Plotia* Adans. = *Myrsina.*

"PLUKENET, LEONARD (1642–1706): b. Jan. 1642; d. Westminster, July 6, 1706; bur. Chancel of St. Margaret's, Westminster. M.D. Had a bot. garden at Old Palace Yard, Westminster. Queen's botanist to Mary II. Supervisor, Hampton Court Garden. 'Phytographia,' 1691. 'Almagestum,' 1696. 'Mantissa,' 1700. 'Amaltheum,' 1705. MS. in Bibl. Linn. Soc. (?). Herbarium of 8000 Plants in Herb. Sloane. Had a farm at Horn Hill, Herts. Trans. Watford Soc. i. (1875), 23; Pult. ii. 18; Rees; Pritz. 249; Jacks. 593; Journ. Bot. 1882, 338; Fl. Midd. 374; Hoefer; Michaud. Portr. engr. Collins, 1690, in 'Phytographia.' *Plukenetia* Plumier.

"POTTS, JOHN (d. 1822): d. London? Oct., 1822. Collector for Hort. Soc. in China (1821) and Bengal. Trans. Hort. Soc. v. iii. 427; vii. 25. *Pottsia* Br.

"PRESTON, GEORGE (fl. 1710–1716). Superintendent, Edinburgh Garden, until 1716. 'Catalogus omnium Plantarum, &c.,' 1710. 'An indefatigable botanist,' Blair, Bot. Essays, pref. Misc. Essays, 101; Pult. ii. 9; Jacks. 411.

"PURDIE, WILLIAM (d. 1857): d. Trinidad, Oct. 10, 1857. Kew Collector in Trop. America and W. Indies. Journal in Journ. Bot. 1844 5. Curator, Bot. Gard. Trinidad, 1846. Journ. Bot. 1847, 40; Gard. Chron. 1857, 792; R. S. C. v. 43. Plants at Kew. *Purdiæa* Planch."

MARKETS.

COVENT GARDEN, July 3.

SUPPLIES of Strawberries are abundant, and fruit large generally. Cherries are coming in in quantity, also Peaches and hothouse Grapes; business was fairly good. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Apples, ½-sieve	1 6	7 0
— Tasmanian, case	15 0	20 0
Grapes, lb.	1 6	3 0
Lemons, per case	12 0	20 0
Melons, each	1 6	3 6
Peaches, dozen.	2 0	10 0
Pine-apples, St. Michael. each	2 0	6 0
Strawberries, lb.	0 4	1 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Asparagus, English, per 100	12 0	...
Beans, French, lb.	2 0	...
Beet, red, per dozen	1 0	2 0
Carrots, per bunch	0 6	...
Cauliflowers, each	0 3	...
Celery, per bundle	1 6	2 0
Cucumbers, each	1 0	1 6
Endive, per dozen	2 0	...
Herbs, per bunch	0 4	...
Leeks, per bunch	0 3	...
Lettuces, per dozen	1 6	...
Mushrooms, punnet	1 6	...
Mustard and Cress, punnet	0 4	...
Onions, per bunch	0 5	...
Parsley, per bunch	0 6	...
Rhubarb, per bundle	0 6	...
Seakale, punnet	2 0	...
Shallots, per lb.	0 6	...
Spinach, per bushel	6 0	...
Sprue, per bundle	1 6	...
Brussel Sprouts, pr lb.	0 3	...
Tomatos, per lb.	1 0	...
Turnips, per bunch, new	0 4	...

POTATOS, NEW.—Disease in the supplies from Jersey was very common during the last week, which would account for the low prices that have ruled. For sound samples, the tendency is upward. Best samples of Kidney, Jersey and French, 7*s.*; Rounds, 5*s.*; English Kidneys, 10*s.* to 14*s.* *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0
Arum Lilies, per doz.	8 0	12 0
Aspidistria, doz.	18 0	42 0
— speci. plants, each	7 6	10 6
Begonias, per doz.	6 0	18 0
Cactus, per doz.	4 0	12 0
Calceolaria, p. doz.	6 0	9 0
Cyperus, per dozen	4 0	12 0
Dracæna terminalis, per dozen	30 0	60 0
— viridis, per doz	12 0	24 0
Erica Cavendishii, per dozen	18 0	48 0
Euonymus, in var., per dozen	6 0	18 0
Evergreens, in var., per dozen	6 0	24 0
Ericas, various, doz.	8 0	24 0
Ferns, in var., doz	4 0	18 0
Ficus elastica, each	1 6	7 0
Foliage plants, various, each	2 0	10 0
Fuchsia, per doz.	4 0	9 0
Heliotrope, per doz.	5 0	8 0
Hydrangeas, doz.	12 0	18 0
Ivy Geranium, p. doz.	3 0	6 0
Liliums, various, per dozen	18 0	36 0
Lobelia, per doz.	4 0	6 0
Marguerites, doz.	6 0	12 0
Mignonette, per doz.	4 0	8 0
Musk, per dozen	2 0	4 0
Nasturtiums, p. doz.	4 0	6 0
Palms in var., each	2 6	21 0
Pelargoniums, scarlet, per dozen	3 0	6 0
— per doz.	9 0	18 0
Petunias, per doz.	6 0	9 0
Roses, various, doz.	12 0	24 0
— (Fairy), per doz.	6 0	9 0
Saxifrages, per doz.	18 0	24 0

*** Bedding plants in variety in boxes, and also in pots.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0
Bouvardias, per bun.	0 6	1 0
Callæthiopica, 12 bl.	3 0	5 0
Carnations, 12 blms.	1 0	2 0
— 12 bunches	4 0	6 0
Cornflower, 12 bun.	1 6	3 0
Eschscholtzia, 12 bn.	2 0	3 0
Eucharis, per dozen	4 0	6 0
Gardenias, 12 blooms	1 6	3 0
Iris, various, 12 bun.	6 0	18 0
Ixia, doz. bunches	3 0	6 0
Heliotropes, 12 spr.	0 6	1 0
Lilac, white, Fr., bun.	4 0	6 0
Lilium, var., 12 bl.	0 6	4 0
Maiden Hair Fern, do	4 0	9 0
Marguerites, 12 bun.	3 0	6 0
Mignonette, 12 bun.	2 0	4 0
— French, per bun.	1 6	2 0
Myosotis or Forget-me-nots, 12 bun.	2 0	4 0
Narcissus, various, doz. bun.	1 6	6 0
Pinks, various, 12 bn.	2 0	4 0
Pelargoniums, scarlet, 12 spr.	0 4	0 6
— dozen sprays	0 6	1 0
Primulas, double, 12 sprays	1 0	1 6
Pæonies, 12 bunches	6 0	18 0
Pansy, or Heartsease, 12 bunches	1 0	2 0
Poppies, various, doz. bunches	1 6	4 0
Pyrethrum, 12 bun.	3 0	6 0
Roses, Tea, per doz.	0 6	1 6
— coloured, dozen	2 0	4 0
— red, per 12 bun.	2 0	6 0
— Safrano, dozen	1 0	2 0
— outdoor, 12 bun.	1 0	3 0
Spirea, doz. sprays	0 6	1 0
Stephanotis, 12 spr.	1 6	3 0
Sultan, 12 bunches	3 0	4 0
Tuberoses, 12 blms.	0 6	1 0

ORCHID-BLOOM in variety.

SEEDS.

LONDON: *July* 2.—**Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, report that offers of French Trifolium, fair average quality, of this year's growth, are now coming to hand, and at moderate rates. For Clover seeds, as is usual at this season, the market continues stagnant. Just now the sale for bird-seeds is small. Sowing Mustard and Rape seed keep steady. Choice large blue Peas have got into narrow compass. Very low rates prevail for Haricot Beans. Feeding Linseed is unchanged.**

CORN.

Averages.—Official statement of the average price of British corn, imperial measure, for the week ending June 28:—Wheat, 32*s.* 8*d.*; Barley, 26*s.*; Oats, 19*s.* 6*d.* For the corresponding period last year:—Wheat, 27*s.* 11*d.*; Barley, 19*s.* 11*d.*; Oats, 16*s.* 11*d.*

FRUIT AND VEGETABLES.

SPITALFIELDS: *July* 2.—Good supply of fruit; demand good. Fair supplies of fresh vegetables, new Potatos, &c.; trade moderately brisk at prices as under:—Fruit: Gooseberries, 3*s.* 3*d.* to 4*s.* per half-sieve; Cherries, 3*s.* to 6*s.* do.; Black Currants, 5*s.* to 8*s.* do.: Strawberries, 3*s.* 6*d.* to 5*s.* per peck; English Tomatos, 5*s.* to 8*s.* per peck of about 12 lb.; foreign do., 1*s.* to 1*s.* 6*d.* per box. Vegetables: Cabbages, 2*s.* 6*d.* to 5*s.* per tally; Asparagus, 9*d.* to 1*s.* 3*d.* per bundle of 100 heads; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Spinach, 1*s.* to 1*s.* 6*d.* per bushel; Peas, 1*s.* 6*d.* to 3*s.* per bushel; do., 3*s.* to 5*s.* per sack; Cauliflowers, 2*s.* to 4*s.* per dozen; Cos Lettuces, 6*d.* to 10*d.* per score; Cabbage do., 4*d.* to 6*d.* per dozen; Mustard and Cress, 1*s.* 6*d.* to 2*s.* per dozen baskets; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Horseradish, 1*s.* to 1*s.* 3*d.* per bundle; Rhubarb, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen bundles; frame Cucumbers, 1*s.* 6*d.* to 3*s.* per dozen; natural, ditto, 6*d.* to 1*s.* 6*d.* do.; Radishes, 3*s.* to 4*s.* per tally; Turnips, 2*s.* 6*d.* to 4*s.* per dozen bunches; Carrots, 2*s.* 6*d.* to 3*s.* 6*d.* do.; Parsley, 2*s.* 6*d.* to 3*s.* 6*d.* do.; Mint, 1*s.* to 2*s.* per dozen bundles; spring Onions, 2*s.* 6*d.* to 3*s.* 6*d.* per dozen bunches; Egyptian do., 5*s.* to 5*s.* 6*d.* per cwt.

POTATOS.

BOROUGH AND SPITALFIELDS: *July* 1.—New: Jersey and French Flukes and Kidneys, 120*s.* to 140*s.*; do. Rounds, 100*s.*; Myatts', 160*s.* to 180*s.*; Hebrons, 100*s.* to 120*s.* per ton. Old: Magnums, 60*s.* to 80*s.*; Lincolns, 60*s.*; Essex and Kent, 50*s.* to 55*s.* per ton.

SPITALFIELDS: *July* 2.—Quotations:—New: Jersey rounds, 5*s.*; do. kidneys, 6*s.* to 6*s.* 6*d.*; do. flukes, 7*s.* to 7*s.* 6*d.*; Cherbourg rounds, 4*s.* 6*d.* to 5*s.*; do. kidneys, 5*s.* to 5*s.* 6*d.*; do. flukes, 6*s.* to 6*s.* 6*d.*; St. Malo rounds, 4*s.* to 5*s.*; do. kidneys, 5*s.* to 8*s.* 6*d.*; Lisbon rounds, 3*s.* to 4*s.* per cwt.

HAY.

Averages.—**The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, prime, 75*s.* to 92*s.*; inferior do., 40*s.* to 75*s.*; hay, best, 60*s.* to 87*s.*; inferior do., 26*s.* to 50*s.*; and straw, 20*s.* to 38*s.* per load.**

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

A JAPAN PEACH.—In our Peach-house we have a "Japan Peach," which blooms and sets its fruit well every year, but I cannot get more than two or three fruits to swell off, and those, before they are properly ripe, crack across the centre, and in a few days would, of course, go rotten; they shrivel up on the tree, in the manner of the one sent to you, and do not drop off, as other varieties would do, previous to stoning. As it is a novelty with my employer, who had it direct from Japan, and is every year anxious to know if we have got any fruit on the "Japan Peach," I have given it special and personal attention. I have given it more water than the other varieties in the same house. In another season I have tried it with less, and again treated it precisely the same as the others, but with always the same result; the others all do well, but this one puzzles me. Do you know the variety, and is it worth cultivation? If it is, it is strange that I have never met with it before elsewhere. *A. G. L.*

NOTICES TO CORRESPONDENTS.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

ARISTOLOCHIA ELEGANS: *J. C.* Plant out in a large pot, with the hole at the bottom made large, and place on a border of sandy loam and leaf-mould in an intermediate house. The compost used in the pot may be like that of the border.

ASTERS—BULBS: *F. C. T.* We cannot recommend nurserymen; but Messrs. Vilmorin, Andrieux & Co., 4, Quai de la Mégisserie, Paris, would probably answer your first question; and Dr. Van Hall, editor of the *Neederlandsche Tuinboublad*, Arnhem, your second.

COTYLEDON UMBILICUS: *J. L.* In the *Students' Flora*, the locality is given as "rocks and walls, especially on the west coasts from Argyll southwards; ascending to 1000 feet in Wales; throughout Ireland;" so it cannot be called rare. It belongs to the N. O. Crassulaceæ.

CROCKING POTS: *Enquirer.* The piece chosen to cover the hole or holes in the bottom of a flower-pot should be placed with its concave side downwards—and it is only concave pieces that should be employed for this purpose, so that the passage of water beneath it may not be impeded. As a rule, the gardener puts too many crocks into pots which are to hold plants for a few months only, or till again repotted. The plants are thereby robbed of a considerable body of nutritive material, and frequent watering, with its consequent impoverishment of the soil, becomes a necessity. Where plants have to stand one year or more in the same pots, the crocking should be well done, and adapted to their particular requirements. Siftings from soil with fibre in it should be placed over the crocks, in depth from 1 to 4 inches, accordingly as the pots are small or large, and the soil made compact by pressure, and the sandier it is, the greater the degree of compactness.

EVERGREEN ROSE: *D. F. M. W.* Please send specimen for identification.

GARDEN LABOUR: *T. B.* Nothing less than eight men would give satisfactory results, and three of these ought to be young men with some amount of knowledge of forcing fruits and flowers, flower garden work, and the general care of plants in pots.

HOLLY: *J. P.* The leaves are apparently attacked by the larva of some sawfly.

HOUSE FOR LOMARIA, PTERIS, &C., AND ODONTOGLOSSUM CRISPUM AND O. ROSSII: *Lomaria.* Both classes of plants will do well together in the same house, but kept apart. The width of house need not be more than 10 feet, and the height to apex 8 feet. The Odontoglossums, &c., grow best in houses where they are brought up almost close to the roof, and the Ferns in such houses are not drawn. Gravel or spar is best for the paths and stages. The piping a little in excess of what is suitable for a greenhouse would answer the purpose. To avoid trouble with local authorities, it is best to inform the surveyor of the erection of buildings, at least, in urban and suburban localities.

INDIA-RUBBER IMPORTS INTO THE U.S.A.: *Kay.* The Consul in London for the U.S.A. might be able to give you the information. *Tropical Agriculturist* of Colombo may be found at the British Museum Library.

INSECTS: *W. R.* The creatures infesting the Strawberries are specimens of Julus guttatus, one of the false wire-worms; they are quite common.

LILIES DYING OFF: *J. Sherlock.* In the absence of the insect we cannot say what it is. Please send specimens, also of the Lilies affected. It may turn out to be the Lily-disease, and the insects you have perceived merely feed on the decaying plants.

MELONS: *W. B.* Your plants are attacked by a fungus, which we should like to ascertain more about. Please send a fresh specimen by post. We fear there is no help. Clear out the plants and soil, lime-wash the pit, and clean every part thoroughly, making a new start. Afford as much ventilation to the new plants as is advisable.

MELON ROOTS: *G. W.* The roots are affected terribly with the root-worm, so often figured and described in our columns. You should burn the roots, turn out the old soil, and begin afresh.

MOSS IN LAWNS: *W. R.* It is usually present owing to the impoverishment of the soil by removing all of the grass mowings, and non-manuring, or from want of proper drainage the ground becoming soured and cold, and unfit for the growth of grasses. If impoverishment is the cause, dressing in winter with farmyard manure in a decayed condition is a good remedy, letting it lay on the ground till the grass begins to grow, when it must be raked off. A compost made of loam and wood-ashes, in the proportion of six of the former to one of the latter, is a good dressing, and will extirpate moss in one season. Burnt earth is another capital dressing, especially for lawns that "burn" in dry weather. If mossiness is due to a wet soil, the remedy is to be found in thoroughly draining it by means of pipe-drains if there are no trees and shrubs, otherwise with rubble drains. In any case, one or two of the dressings should be applied afterwards. All of the above operations can only be done, in ordinary cases, in winter and early spring.

NAMES OF PLANTS: *Adolescens.* 1, Trachelium plena alba; 2, Campanula latifolia var. Houttei ×; 3, C. latiloba; 4, C. glomerata; 5, C. g. alba; 6, C. persicifolia; 7, C. garganica hirsuta; 8, C. rhomboidalis.—*A. P. C.* 1, Helianthemum mutabiles; 2, H. m., semi-double form; 3, Tradescantia virginica, claret-red var.—*W. R.* 1, Circeia lutetiana; 2, Prunella grandiflora; 3, Prunella vulgaris; 4, Lepidium Draba; 5, not found; 6, Fumaria officinalis.—*J. M.* Rhododendron ferrugineum.—*J. C.* The flower appears to be Jasminum Sambac, double-flowered variety. The cutting seems something different.—*Holyport.* Schubertia grandiflora.—*J. M.* Iris lusitanica probably.—*T. W. B.* Lathyrus magellanicus, Lord Anson's Pea.—*S. H.* The berries are those of Nertera depressa.—*C. W. D.* Anthericum Liliago, St. Bernard's Lily.—*P. J.* 1, not found; 2, Tradescantia virginica; 3, Campanula glomerata; 4, Spiræa Ulmaria, double-flowered; 5, Helenium Hoopesi; 6, Centaurea montana; 7, Campanula persicifolia alba; 8, Geranium pratense; 9, Aristolochia clematitis; 10, Dicentra eximia. Another time, please not to send more than six specimens. Our time is precious.—*J. W.* Dipladenia hybrida.—*Camjee.* Phylodota articulata, Dendrobium calceolus, Aspidium Molle. The dotted leaf is probaby a Gordonia.—*E. Pearce.* Eucomis punctata.—*A. Norton.* Eryngium giganteum.—*G. P. D.* Not a Cistus. Carpenteria californica, illustrated by us July 24, 1886, p. 113.—*M. P.* 1, Orchis maculata; 2, Sempervivum tortuosum variegatum.—*C. W. Dod.* 1, Phyteuma serratum?; 2, P. orbiculare; 3, P. betonicæfolium.—*M. T. M.* Erigeron speciosus.—*T. Wakeford.* Mesembryanthemum barbatum? No flower.—*G. B.* 1, Saxifraga geum; 2, S. Andrewsii; 3, Jasminum humile; 4, Veronica cataractæ var.; 5, Spiræ canescens; 6, Sisyrinchium striatum.—*W. H.* Trifolium repens. It will do as well as any other plant for Shamrock.—*H. N.* An exceptionally fine variety of Cattleya gigas.

PEACHES: *G. H.* The leaves look as if they had

been syringed when the sun was shining directly on them.

Plane Leaves: *D. P.* Without knowing the circumstances, we can only guess at the cause of mischief, but we can find neither fungus nor insect. The leaves have the appearance as if they had been subjected to some corrosive gas. Are there brick-fields near? It may be the result of spring frost or excessive radiation acting on wet leaves.

Polemonium: *C. A. M. C.* There is no species of Polemonium with blue pollen grains, so far as our information goes.

Proliferous Pink: *W. R.* A proliferous condition is not uncommon in Pinks.

Showing Vegetables: *E. C.* For six you might put up the following, but much would depend on the prepossessions of the judges:—Tomatos, Potatos, Onions, Peas, Cauliflowers, and Carrots. In making this selection, general usefulness has been kept in view. For a collection of ten, all of the above-mentioned kinds, and adding French Beans, Marrows, Turnips, and Mushrooms. In your list you place Cucumbers, but this is an article of salad, rather than a culinary vegetable.

Tomatos Under Glass: *An Old Subscriber.* Such cutting away of foliage as was practised by your friend's friend should not be tolerated by any man who is looking forward to getting a crop of fine, well-flavoured fruits in succession. Some cutting away must be done, and that which you afforded as an example of it ought to satisfy any reasonable cultivator. Out-of-doors it is different, and severity is desirable.

Vines: *C. B.* The leaves have been infested with red-spider, now all departed; and with warts arising from a too damp and ill-ventilated an atmosphere, and which were green, but have turned brown by age, or the application of the sulphur. The white substance is either fine sulphur grains, or the powder found on some Vine leaves.

Vines Breaking on Laterals that were Stopped: *A. W. D.* The Vines, having so great vigour, would naturally find an outlet for it elsewhere when you had cut off half or more of each lateral shoot. The stopping was too severe, and to avoid the further breaking of basal buds, more foliage and shoots should be left on the Vines.

White Carnation: *A. G.* It is the most beautiful white-flowered Carnation of which we have any acquaintance, and ought to be classed among show instead of border flowers. The form is very good, being an almost continuous circle; petals numerous, but not crowded, good in shape, smooth at the edge, and the white of the purest.

CATALOGUES RECEIVED.

Reid & Bornemann, Trewsbury Road, Sydenham, London, S.E.—Pelargoniums, Chrysanthemums, Fuchsias, &c.

G. H. North, Wood Lane, Binfield, Berks—Dahlias, Asters, Helianthus, &c.

Communications Received.—E. G.—N. E. Br.—C. H.—F. W. B., Dublin.—R. A. R.—S. M.—G. H.—T. E. H.—E. C.—W. E. G.—H. E.—C. B. P.—D., New York.—A. O.—M. H.—R. G.—Messrs. J. Veitch & Sons.—W. K.—J. J. W.—W. F.—F. W. F.—R. N.—G. Darby (next week).—W. H.—N. T.—W. C.—H. H. W.—J. O'B.—J. J. W.—N. E. B.—E. B.—D. T. F.—R. D.—W. S.—J. E.

DIED, on June 22, Joseph Treurn, aged seventy-two, for many years with Messrs. James Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, S.W.

Which Cattleya has the Largest Flowers?—I have a spike of Cattleya Sanderiana bearing five enormous blossoms, cut and given to me by R. H. Measures, Esq., The Woodlands, Streatham, from a plant in his collection, the individual flowers of which measure 10 inches across the petals, and 3 inches across the lip. The sepals and petals are broad, of a deep rose-colour, and the lip is of a fiery maroon-crimson hue, shading at the margin to rose, while the central area, where it is folded over, is of an unusually rich colour—deep yellow towards the centre of the throat, gradually changing towards the margins to a whitish-yellow. This plant is worthy of record as probably the finest variety existing. *Enquirer.*

ORCHID PEAT, best quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. RHODODENDRON and AZALEA PEAT. Samples and Prices to WALKER AND CO., Farnborough, Hants.

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Mr. R. Irwin Lynch, Curator, Botanic Gardens, Cambridge, says:—"There can be no question with regard to its efficacy."

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GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.*, from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

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PROTECT YOUR GARDENS from the Ravages of Birds.—Strong NETTING supplied by G. Robinson at 35 square yards for 1*s.*; is oiled and dressed; will not rot if kept out in all weathers; sent any width; carriage paid on all orders over 5*s.*; can be sent on approval; hundreds of testimonials. Read the following:—"Broadstairs, Kent, May 12, 1889. To my fellow-gardeners,—I have had Garden Netting from G. Robinson, Fish Merchant, Rye, Sussex, and it gave me great satisfaction.—Yours truly, G. Hawkins, Gardener to S. E. Wyatt, Esq." Commoner Netting at 50 square yards for 1*s.*

GEORGE ROBINSON, Fish Merchant, Rye, Sussex.

THOS. W. ROBINSON.

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"THE BEST OF ALL"

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HEATING APPARATUS FIXED COMPLETE

DENNIS PARK IRON WORKS

STOURBRIDGE.

TANNED NETTING, for Preserving Fruit Trees, Flower Beds, &c., from Frost and Blight; 35 square yards for 1*s.* Sent any width; carriage paid on all orders over 5*s.* I do not require payment till you have received and approved of the Netting. Note the Address—

HY. JOHN GASSON, Fish Merchant, Rye.

Protect your Fruit Trees and Seeds.

EXTRA STRONG TANNED NET, 4 yards wide, 3*d.* per yard; or 2 yards wide, 10*s.* per 100; 4 yards wide, 20*s.* per 100 yards. New TWINE NETTING, 1 yard wide, 2*d.* per yard; 2 yards wide, 4*d.* per yard; 4 yards wide, 8*d.* per yard. COTTON NET, nine meshes to square inch, 1½ yard wide, 7*d.* per yard run.

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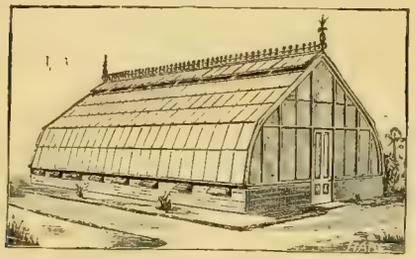
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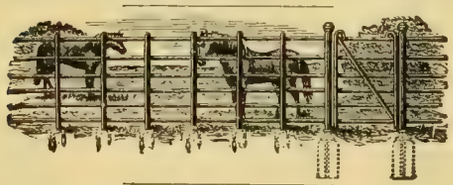
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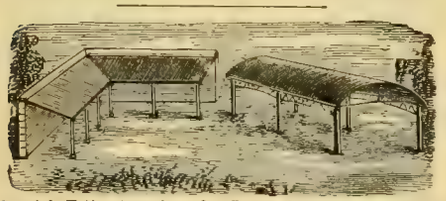
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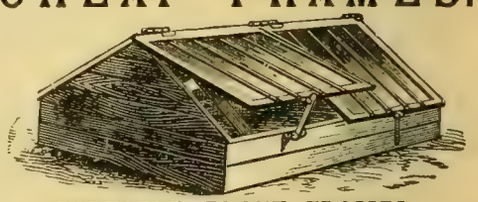
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Applications, stating age (which must not be less than 30 or more than 50 years), and containing particulars of the qualifications and experience of the applicant, must, with Copies of recent Testimonials attached, be addressed to "The Clerk of the London County Council, Spring Gardens, S.W.," and be endorsed on the outside "Superintendent of Parks and Open Spaces." They must be delivered here not later than Thursday, the 17th of July; after which day no application will be received. Any application which does not contain all the particulars above mentioned, or which in any other respect fails to comply with the terms of this advertisement, will not be laid before the Council. Personal canvassing is strictly prohibited.

H. DE LA HOOKE, Clerk of the Council.

Spring Gardens, S.W.—June 30, 1890.

Head Working Gardener.

WANTED, a good all-round MAN. Two others kept. Full particulars, age, married, no family preferred; last situation, wages expected. There is a lodge.—A. F. G., Elmsfield, Hertford, Herts.

WANTED, a HEAD WORKING GARDENER, with a thorough knowledge of his Business in all its branches, including Orchid-houses and Orchids. Under Gardener kept and partial services of a farm labourer given. Write only. First-rate character for sobriety and efficiency required. Small house for bachelor on the premises, and coals given with wages.—COL. TILLOTSON, Silkmore, Stafford.

WANTED, a thoroughly capable hardworking GARDENER, to Manage Seed Trial Grounds of 4½ acres, with a little glass, where a great variety of Vegetables have to be grown to perfection; also Flowers and Bulbs. A young man not over 30 years of age preferred; trustworthy and experienced.—Apply by letter, with full particulars in first instance, to WATKINS AND SIMPSON, Seed Merchants, 13, Exeter Street, Strand, W.C.

WANTED, a GARDENER, for single-handed place, where owner is not resident, who thoroughly understands Growing Peaches, Grapes, Melons, and Flowers. Must have had good experience, and produce testimonials as to character and ability.—Address, stating wages, to W. R., Pottle, Royal Exchange, London, E.C.

WANTED, AT ONCE, a WORKING GARDENER, where one under man is kept.—Must understand Vines, Peaches, Kitchen, and Flower Garden. A married man, without family, whose Wife could do Plain Cooking occasionally, when required.—ROBERT VEITCH AND SON, Royal Nurseries, Exeter.

WANTED, at once, a FOREMAN for Houses, used to Growing Plants, Cucumbers, and Tomatos. Must be good man.—Apply, stating full particulars, experience, and salary required.—T. BUNYARD, Nurseryman, Ashford, Kent.

WANTED, a thoroughly experienced FOREMAN for the Houses. Must thoroughly understand Pines, Vines, and all Choice Stove and Greenhouse Plants, including Orchids. Wages 25s. per week. No bothy or vegetables.—Apply by letter, giving all particulars, &c., to GEO. HUMPHREY, Nash Court, Faversham.

GARAWAY AND CO. REQUIRE a WORKING FOREMAN for the Houses, to Grow Vines, Pot Roses, Palms, Ferns, and ordinary Stove and Greenhouse Plants, and to maintain a succession of Cut Flowers. Good wages to a really competent man.—Apply, with full particulars, to GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

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WANTED, a young MAN, not under 17, to Assist Foreman. 12s. per week, with bothy, vegetables, &c.—C. P., Scampston Garden, Rillington, York.

WANTED, a strong active YOUTH, from a good garden, to work Inside and Out. He must be a good singer and churchman. Age not under 17. Wages commencing 10s. per week, and lodgings. A good opening for an energetic youth.—HEAD GARDENER, Catton Hall, Burton-on-Trent.

WANTED, a CORRESPONDING CLERK, a good Penman for the Nursery Department. Must be punctual, orderly, and methodical; a knowledge of Plant Names necessary, and preference would be given to a person possessing, in addition, a knowledge of Shorthand.—Address written application, stating age, experience, and all other particulars, to DELTA, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, for Wholesale Seed Trade, a young Man, of energy and good address, with large experience, as SHOPMAN, or CLERK, or both. One used to or capable of travelling preferred.—State full particulars, with salary required, to WATKINS AND SIMPSON, Exeter Street, Strand, W.C.

WANTED, AT ONCE, practical GARDENERS, in the Suburbs of Large Towns, to Canvass for Orders for Specialties.—For terms, address with references, STOTT DISTRIBUTOR COMPANY (Limited), Barton House, Manchester.

WANT PLACES.

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RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

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To Gardeners.

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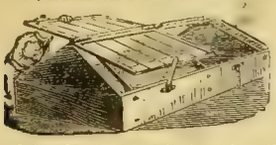
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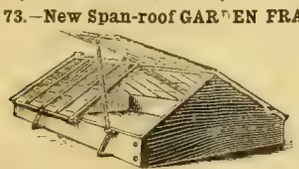
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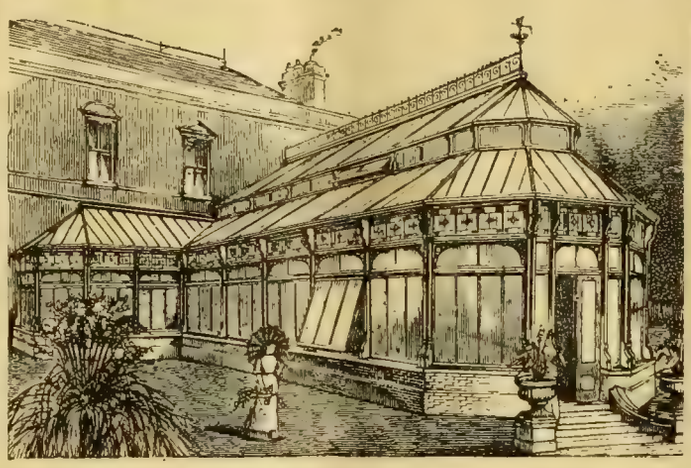
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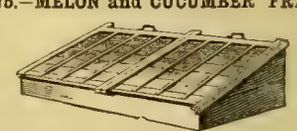
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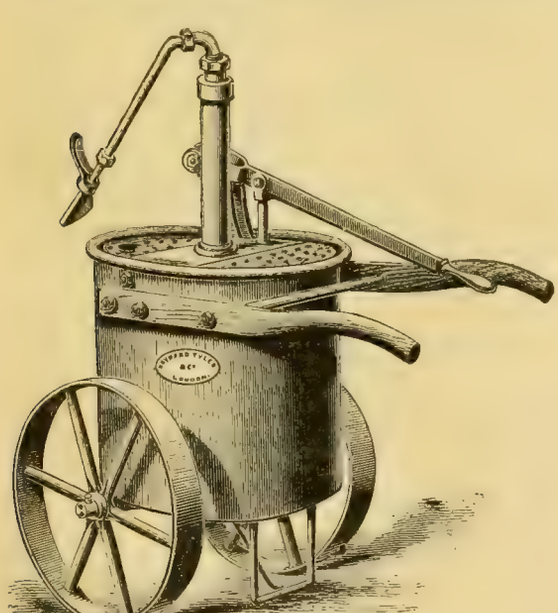
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Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position be guaranteed for advertisements occupying less space than an entire column.

Now ready, in cloth, 11s. 6d.

THE GARDENERS' CHRONICLE, Vol. VII., Third Series, JAN. to JUNE, 1890.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

ROYAL BOTANIC SOCIETY of MANCHESTER.—GRAND EXHIBITION of ROSES and PINKS, on SATURDAY, July 19. For Schedules, apply to the undersigned, BRUCE FINDLAY.
Old Trafford, Manchester.

SALTERHEBBLE and DISTRICT (Halifax) ROSE SHOW, THURSDAY, July 24. Schedules on application to JNO. E. BROOKS, Secretary.
4, Savile Park Street, Halifax.

WILMSLOW and ALDERLEY HORTICULTURAL SOCIETY.—The above Society will hold its SECOND ANNUAL SHOW in Hawthorn Hall Field, Wilmslow, on FRIDAY and SATURDAY, July 25 and 26 next. Schedule of Prizes (£140) on application.
T. W. MARKLAND, C. E. H. HOBSON, } Hon. Secs.

CLAY CROSS HORTICULTURAL SOCIETY.
ANNUAL SHOW, AUGUST 12. Entries close on August 2.
G. LAMB, Assistant-Secretary, Clay Cross.

G. B. FISCHER has to offer short strong Seedling LATANIA BORBONICA and SEAFORTHIA ELEGANS, from stores, 6s. per 100, 55s. per 1000. Also a great stock of useful PALMS of all sizes.
The Nursery, High Street, Clapham, London, S.W.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. McARTHUR, The London Nursery, 4, Maida Vale, London, W.

GEORGE ASHENDEN AND SONS beg to state they can still supply all Plants in good strong, healthy stuff, as per their Advertisement in the *Gardeners' Chronicle* of July 5, "on page 4."
The Nurseries, Wrotham Road, Gravesend.

For Present Sowing.

CABBAGE.—CARTERS' HEARTWELL MARROW, acknowledged to be the finest early Cabbage in cultivation, price 1s. 6d. per oz., 6d. and 1s. per packet, post-free.
CARTERS' MAMMOTH BEEFHEART, the best main crop Cabbage, price 1s. 6d. per oz., 6d. and 1s. per packet, post-free.

For Present Sowing.

LETTUCE.—CARTERS' GIANT WHITE COS, price 2s. 6d. per oz., 1s. per packet, post-free.
DUNNETT'S GIANT WINTER COS, price 2s. 6d. per oz., 1s. per packet, post-free.
ALL THE YEAR ROUND, price 1s. 3d. per oz., 6d. per packet, post-free.

For Present Sowing.

ONION.—CARTERS' GOLDEN GLOBE TRIPOLI, price 1s. and 2s. 6d. per packet, post-free.
CARTERS' GIANT WHITE TRIPOLI, price 1s. per oz., 6d. per packet, post-free.
CARTERS' WHITE EMPEROR, price 1s. and 2s. 6d. per packet, post-free.

CARTERS, Royal Seedsmen by Sealed Warrants, 237 and 238, HIGH HOLBORN, LONDON.

BULBS FOR AUTUMN-FLOWERING.—Summer Planting LIST, now ready, of rare Crocus species, for autumn and spring-flowering, beautiful and rare Colchicums, Sternbergia (Lily of the Field), Zephyranthes (Flowers of the West Wind), Pyrethrums for autumn planting, &c. LIST free on application.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

Autumn Seeds.—To the Trade.

CHARLES SHARPE AND CO.'S Special Priced CATALOGUE of Seeds for Autumn Sowing is now ready, and will be sent, post free, on application. A copy has been posted to all Customers.
Seed Warehouse, Sleaford.—July, 1890.

HENRY SQUELCH, North Row, Covent Garden, FRUIT SALESMAN and COMMISSION AGENT, Importer of Bananas, and all kinds of Madeira and Canary Island Produce.
H. SQUELCH is open to RECEIVE CONSIGNMENTS of CHOICE BLACK GRAPES, MUSCATS, TOMATOS, CUCUMBERS, PEACHES, and all kinds of Hothouse Produce.
H. SQUELCH'S connection is amongst the best business houses in the United Kingdom, and he gives personal attention to all consignments. Account of Sales forwarded day of Sale. Cheques weekly, or as desired. Empties and Labels supplied. Bankers, London and County Bank. Warehouses and Banana House, James Street, Covent Garden, W.C.

CHOICE FLOWERS—CHOICE FRUIT.—Highest Market Prices guaranteed. Prompt cash.
HENRY RIDES, Covent Garden, W.C.

J. W. BARNHAM Receives on Commission, GRAPES, TOMATOS, and other Choice FRUITS; also FLOWERS. His personal attention securing highest Market Prices. Account Sales daily, and cheques at option. Baskets and labels found.
Long Market, Covent Garden, W.C.

JOHN JAMES, 7, Flower Market, Covent Garden, W.C., receives on Commission, GRAPES, TOMATOS, and other choice FRUITS and FLOWERS. Reference: London and County Bank. Highest Market Prices. Account Sales daily. Cheques weekly. Baskets, Boxes, and Labels found.
Warehouse: 19, Russell Court, W.C.

WANTED, 200 Mrs. Pollock GERANIUMS, good strong stuff, out of pots. Lowest cash price to—
GEO. ASHENDEN AND SONS, The Nurseries, Wrotham Road, Gravesend.
P.S.—Also wanted, any other varieties of Golden Tricolor Geraniums, for cash.

WANTED, TWO good specimen Hard-wooded ERICAS, to be fit for Exhibition end of July. State variety and price to
CALDWELL AND SONS, Knutsford.

Pines—Pines.

WANTED, TWO PLANTS, showing fruit to be ripe 1st week in November. Price and particulars to
Mr. QUARTERMAN, Silverlands, Cobham, Surrey.

For Present Sowing.

SUTTON'S PRIZE GLOXINIAS.—The strain which attracted so much attention and admiration at the Royal Horticultural Society's Show in the Temple Gardens, May 28 and 29, 1890, and awarded the Society's Silver-gilt Floral Medal. Price of Seed, 5s. and 2s. 6d. per packet, post-free. Sutton's LIST of Vegetable and Flower Seeds for summer and autumn sowing, post-free on application. SUTTON'S SEEDS Genuine only Direct from SUTTON AND SONS, The Queen's Seedsmen, Reading. No agents.

ROSES.—Laing's Collection cannot be surpassed. Inspection invited to see the many thousands of healthy Plants in flower. Descriptive CATALOGUE post-free.
JOHN LAING AND SONS (Rose, Fruit Tree, and Vine Growers), Forest Hill, S.E.

50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high. 15s. to £10 per 100, free on rail.
J. J. CLARK, Goldstone Farm, Brighton.

ED. PYNAERT, NURSERYMAN, Ghent, Belgium, is now sending out his beautiful HYBRID ROCHEAS, described and figured in the *Gardeners' Chronicle*, February 22, 1890. Price 15s. the set of five distinguished varieties. Package and freight to all parts of Great Britain for cash with order.

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to—
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.

MAIDEN HAIR FERN, 25,000 to offer in 4 and 5-inch pots, at £2 per 100; also 100 cut fronds for 1s. 3d., post free.
TAYLOR AND CO., Timperley, Cheshire. Cash with order.

Paul & Son's Roses.

THE ROSES are finely in flower and growth. Magnificent FRUIT TREES, and all ORNAMENTAL TREES, in good condition to select from, at
PAUL AND SON'S, The "Old" Nurseries, Cheshunt, Great Eastern Railway.

PRIMULAS—PRIMULAS—PRIMULAS.—Twenty-first year of distribution. Williams' Superb Strain, 1s. 6d. per dozen, 10s. per 100. CINERARIAS, same price; also double white PRIMULAS, 6d. each. Carriage free for cash with order.—JOHN STEVENS, The Nurseries, Coventry.

FLORAL ALBUM of CONFERENCE DAFFODILS.—This unique "Work of Art," illustrated by GERTRUDE HARTLAND, has now become a regular Drawing-room Book, containing as it does, over 50 faithful pictures of one of the most accommodating of all spring flowers. First Edition limited to One Thousand Copies. Post-free, 2s. 6d. Complimentary to past and future purchasers. Trade Circular of Best Market Varieties *gratis*. Bulbs very fine, and prices moderate.—WM. BAYLOR HARTLAND, Seedsman, Cork.

None like the Kent Strawberries.

VERY FINE PLANTS. True to name—to fruit next year.
GEO. BUNYARD AND CO., Maidstone.
New Illustrated CATALOGUE free. (Explicit Cultural Directions and Descriptions.)

LOVEL'S Yorkshire STRAWBERRIES.—Strong, healthy, and well-rooted Runners, to fruit next season. Thury, Paxton, President, Noble, and other good varieties. Full Descriptive Price LIST with Testimonials free. Sample Parcel, 3d.—W. LOVEL AND SON, Driffield.

The Best Present for a Gardener.

VINES and VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5s., post-free 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Tuesday Next.—Third and Final Portion.

The CELEBRATED STUDLEY HOUSE COLLECTION of ESTABLISHED ORCHIDS.

Absolutely without reserve.

HIGHLY IMPORTANT SALE of the THIRD PORTION of this renowned COLLECTION, the whole being remarkable for splendid culture and condition, and including a great proportion of plants matchless in point of rarity, by order of F. G. Tautz, Esq., who is compelled to relinquish their cultivation in consequence of a change of residence.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at their Central Auction Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, July 15, at half-past 12 o'Clock precisely each day, the THIRD PORTION of this SUPERB COLLECTION. Amongst the many fine things included in this Sale, the following may be specially mentioned:—

Odontoglossum Rossii
,, Harryanum
,, Alexandreæ
,, crispum giganteum
,, Wilckeanum Pallens
,, Pescatorei
,, vexillarium variegatum
,, ,, leucoglossum
Cypripedium Laforcadei
,, Ashburtoniæ superbum
,, Wallaertianum
,, superciliare ornatum
,, marmarophyllum
,, Acis
,, Lawrenceanum rubrum
,, caudatum Warscewiczii
,, electra
,, Dayanum superbum
,, Fraseri
,, Neo-guineensis
Cypripedium tonsum
,, Orestes
Cattleya Mendelii conspicua
,, ,, limbata
,, gigas mirabile
,, Gaskelliana striata
,, Trianæ Idalia
Lælia purpurata Russelliana
,, ,, atropurpurea
,, ,, sunset
Dendrobium Schneiderianum
,, endocharis
Masdevallia Veitchii grandiflora
Miltonia cuneata
Physosiphon Loddigesii
Cymbidium Mastersii
Vanda Sanderiana
Angræcum Ellisii

N.B.—The whole of the Plants will be submitted to the hammer, and in no case will any plant be sold privately. Catalogues will be forwarded on application to the Auctioneers, 67 and 68, Cheapside, London, E.C.

Poulett Lodge, Twickenham.—Thursday Next.

STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, as above (the Freehold having been Sold), on THURSDAY NEXT, July 17, at 3 o'Clock, the valuable and rare STOVE and GREENHOUSE PLANTS, PALMS, large CAMELLIAS, a few ORCHIDS, &c.

May be viewed the day preceding and morning of Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Friday Next, July 18

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. Sander, of St. Albans, to SELL at their Auction Rooms, 67 and 68, Cheapside, E.C., at half past 12 o'Clock precisely, a very choice assortment of IMPORTED and a few ESTABLISHED PLANTS, all of which are in the best possible condition.

CATTLEYA MENDELII.

A splendid importation, amongst which are many superb masses, some having as many as one hundred stout pseudobulbs and green sturdy leaves. These plants now offered are from the best district, and many fine things will surely flower from amongst them. We specially recommend buyers to these plants, as they are furnished with such stout bulbs and healthy foliage, which give them the appearance of established plants.

ODONTOGLOSSUM PESCATOREI.

A grand lot of plants just to hand, in the finest possible condition, having good, stout, distinct bulbs and healthy breaks. These plants are from the district whence come the large round flowering and crimson-spotted varieties. It was from this very district that we imported that most charming of Odontoglots, viz., O. excellens. There are surely some lovely novelties among the plants offered.

ODONTOGLOSSUM TRIUMPHANS.

A very good importation of this very easy growing species. All the plants offered are in the best of health, and are making strong growths. This is the very long spiked variety with larger rich brown and golden yellow flowers, which are in their full beauty during winter.

ODONTOGLOSSUM HASTILABIUM.

A noble and remarkably handsome species. We have just received a fine lot of plants which are now offered, they are in the best condition, having stout healthy bulbs and strong breaks. A splendid specimen exhibited by Messrs. Sander & Co. at the Temple Show was greatly admired. The plants flower freely, and remain in perfection for three months.

CATTLEYA MOSSIÆ.

Splendid masses with over a hundred bulbs and with fine green leaves, all possessing good sound eyes; from the best districts.

LÆLIA ANCEPS WILLIAMSIANA.

A very fine thing in the way of L. a. stella and Sanderiana. It is a very easy-growing species. The plants offered are well-established, and are making good growths.

ANGULOA SPECIES—SUPPOSED TO BE NEW.

Some good plants, just received, in fine condition. The pseudobulbs are very distinct in shape, and cannot be matched with anything in our collection.

ONCIDIUM PAPILIO MAJUS.

The beautiful, large-flowering Butterfly Orchid.

CYPRIPEDIUM SANDERIANUM.

A beautiful, long-tailed Lady's Slipper, easy to grow, and free-flowering.

ANGRÆCUM SANDERIANUM.

A very handsome, chaste flowering Orchid. The plants offered are all well-established and healthy.

ONCIDIUM SPLENDIDUM.

Some very fine strong plants of this magnificent Oncidium.

CYPRIPEDIUM ROTHSCHILDIANUM.

Some established plants, in fine condition.

CYPRIPEDIUM INSIGNE MONTANUM.

The collector, who has made a special journey for these

Continued on next column.

Continued from previous column.

plants, says that the various forms which he saw in flower were very fine. They were obtained from a hitherto unsearched district, and at a high elevation. The plants are in splendid condition, and are furnished with good green leaves—there are crimson-spotted and flaked varieties among them, and white and green varieties without spots or other markings.

ONCIDIUM CUCULLATUM.

A very handsome winter-flowering Oncid. The plants are in first-rate order, having good bulbs and leads.

ADA AURANTIACA.

A good importation of this charming orange-scarlet flowering species. ADA AURANTIACA is very easy to grow in a cool house, where, during winter it makes a grand display with its brilliant flowers.

CYPRIPEDIUM CONCOLOR.

A very handsome dwarf-growing plant requiring a warm moist atmosphere to grow in. The plants to be sold are furnished with good crowns and healthy leaves.

CYMBIDIUM EBURNEUM.

A magnificent lot of plants of this really handsome Cymbid. The health and appearance of these plants recommend them to the notice of buyers. C. EBURNEUM produces large pure white flowers, which are almond scented, and remain in perfection for a considerable time after expanding.

ONCIDIUM ÆMULUM.

A fine strong-growing species, allied to O. MACRANTHUM, but differing in the colour of the flowers. The plants have just been received, and are in good condition, having good large bulbs and healthy breaks.

On view morning of Sale, and Catalogues had.

Friday Next.—Seedling Cypripediums.

MESSRS. PROTHEROE AND MORRIS will include in their SALE of ORCHIDS on FRIDAY NEXT, a number of Seedling CYPRIPEDIUMS; DENDROBIUM NOBILE COOKSONII and NOBILIUS, D. DEVONIANUM ALBUM, and other ORCHIDS.

On view morning of Sale, and Catalogues had.

Tuesday, July 22.

900 ONCIDIUM TIGRINUM.
500 ODONTOGLOSSUM INSLEAYI.
500 ,, CITROSMUM.
700 ,, new species.

Just received in splendid condition direct from Mr. Pechacek, for absolute sale, Without Reserve.

MESSRS. PROTHEROE AND MORRIS will SELL the above extensive Importation of ORCHIDS by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, July 22, at half-past 12 o'Clock.

On view morning of Sale, and Catalogues had.

East Dulwich.—Orchids.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Seeger & Tropp to SELL by AUCTION, at their Orchid Nurseries, East Dulwich, on WEDNESDAY, July 23, at half-past 12 o'Clock precisely, the CONTENTS of TWO PRIVATE COLLECTIONS, recently purchased by them, supplemented by additions from their own stock, making a large and very varied selection of rare and valuable ORCHIDS, the whole affording a splendid opportunity to buyers, such as seldom occurs, and which will be sold absolutely without reserve. The Sale includes:—

Anectochilus
Cattleya Reineckiana
,, intricata maculata
,, Wagneri
Cologyne Cummingi
Cypripedium robustissimum
,, Kirchoffianum
,, Figaro
,, niteus superbum
,, Chlorops
,, Schroderæ
,, Hornianum
,, amabile
Vanda tricolor planilabris
,, cœrulea, ten fine specimens
Dendrobium nobile nobilius
,, ,, Cooksoni
Dendrobium nobile album
Echioglossum striatum
Lælia elegans irrorata
Lycaste Skinneri alba
Masdevallia, 110 different species and varieties
Odontoglossum aspersum violaceum
,, coronarium, perhaps the largest plant in cultivation
Sobralia virginalis
,, Warscewiczi
,, Xantholeuca
,, Cattleya, only three plants of this grand species are known to be in Europe

Messrs. Seeger & Tropp's Orchid Nurseries are within five minutes' walk of East Dulwich Railway Station (L. B. and S. C. Railway), reached by frequent trains from London Bridge and Victoria. Plants will be on view the day previous and morning of Sale, and Catalogues obtained on the Premises; or of the Auctioneers, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.

Special Sale.—Tuesday, July 29.

ORCHIDS in FLOWER.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SPECIAL SALE of ORCHIDS in FLOWER will take place as above, for which they WILL BE GLAD TO RECEIVE NOTICE OF ENTRIES AS EARLY AS POSSIBLE.

Lee, Kent.

A short distance from Blackheath and Lewisham Railway Stations.

To FLORISTS, NURSERYMEN, MARKET GARDENERS, and others.—By order of the Trustees.

MESSRS. PROTHEROE AND MORRIS have received instructions to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on THURSDAY, July 31, 1890, at 2 o'Clock precisely, the old-established long leasehold NURSERY, known as Wright's Nursery, 33A, Turner Road, Lee, containing an area of about 1 acre, and comprising 37 Span-roof and Lean-to Greenhouses, 8 Pits, also Potting and Packing Sheds, Coach House and Stabling, Cottage and Workshops, together with the Leasehold Residence, No. 17, Turner Road, and a plot of Land on the opposite side of the road, having a frontage of 289 feet, by a depth of 7 to 16 feet.

The Vines, Camellias, and Roses, planted out in the various Greenhouses, will be included in the purchase.

The property may be viewed. Particulars and conditions of Sale, with Plan, may be had on the Premises; at the Mart, E.C.; of Messrs. NEWTON AND NEWTON, Solicitors, 180, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Thursday Next, July 17.

SPECIAL SALE of ORCHIDS in FLOWER and BUD.

150 lots of fine Established Plants, from the renowned Blenheim Collection, by order of His Grace the Duke of Marlborough.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, July 17, at half-past 12 o'Clock precisely, a fine Collection of ORCHIDS in Flower and Bud, including many choice varieties and rare species. Also about 150 lots of well-grown, thoroughly established plants from the renowned Blenheim Collection, an extensive Importation of LÆLIA MAJALIS, &c.

On view morning of Sale, and Catalogues had.

Retford.

ELIGIBLE FREEHOLD INVESTMENT.

To Nurserymen and Others. *Re* C. Hodson, Deceased.

MR. HENRY SPENCER will SELL by AUCTION, at the "Pheasant" Hotel, on THURSDAY, July 17, 1890, at 4 for 5 o'Clock in the afternoon precisely, subject to such conditions of sale as shall then be produced:—

Lot 1.—All those Two Messuages or DWELLING HOUSES, situate near to Grove Street Bridge, Retford, and now in the occupation of Mr. F. W. Hodson and Mr. W. Piggott.

Lot 2.—All those PIECES or PARCELS of LAND situate near to the last described Premises, together with the valuable GLASS FORCING-HOUSES and HEATING APPARATUS now standing thereon, viz.:—One large Span House, 78 feet by 18 feet; four Span Houses, each 66 feet by 10 feet; one Lean-to House, 93 feet by 9 feet; one Lean-to House, 70 feet by 9 feet; one Lean-to House, 66 feet by 9 feet; one Span Propagating Pit, 34 feet by 10 feet. All of which are well heated, principally with the new expansion jointed pipes, within the last two years. Two large Saddle and Improved Saddle Boilers and one smaller ditto to the Propagating Pit and large House. The two large boilers are set side by side, in case of accident by frost, &c.

The Stock in-Trade may be taken at a valuation. Immediate possession can be given.

For further particulars apply to Mr. F. W. HODSON, or T. BESCOBY, Solicitor, Retford.

Cut Flowers, Plants, and Bulbs.

We hold Sales, several each week. Reference to senders of years standing. Particulars on application.

MESSRS. POPE AND SONS, Sale Rooms, 6, Phillip Street, adjoining Market Hall, Birmingham.

Mile End Nurseries, Stockport.

TO BE DISPOSED OF, owing to the decease of the Proprietor, this Old-established BUSINESS. Extent of Land about 13 Acres.

For further particulars address, EXECUTORS, Mile End Nurseries, Stockport.

TO BE DISPOSED OF, Lease, Stock, and JOBBING BUSINESS of a good Nursery, ten miles from Covent Garden. Price low, part can remain.

Particulars, M. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, by Private Treaty, within 1½ miles of Neath, an established NURSERY, comprising between 3 and 4 Acres (all broken up and prepared), planted with mixture of Forest, Ornamental, and Fruit Trees (in great demand in immediate neighbourhood). Soil eminently suitable for all Trees, Shrubs, and Rhododendrons. All Trees in excellent condition. Goodwill of business included. Also Grass Farm of 50 Acres adjoining the Nursery (in ring fence), with good Dwelling-house and complete Outbuildings in thorough repair. The whole held for unexpired Lease of 34 years. Good Road. The Nursery and Farm will be disposed of together or separate, at Purchaser's option. An excellent opportunity for Nurserymen, Market Gardeners, Farmers, and Milkmen.

Apply, W. EDWIN SHAW, Gilfach, Neath, South Wales.

Mowden Nurseries, Darlington.

TO LET, or FOR SALE, by order of the MORTGAGEES, either as a whole, or in lots to suit Purchasers, the Valuable NURSERY, lately in the occupation of Mr. T. B. Morton, containing about 2 Acres, with Dwelling-House, Stable, Cart Shed, 7 Greenhouses, &c., all fitted up with the most modern appliances; well stocked with Fruit Trees, &c.—Offers will be received by

J. T. HALL, 44, High Row, Darlington.

TO BE LET, 1 to 10 acres of GRASS LAND, suitable for Nurserymen and others, on Lease for 7, 14, or 21 years. Rent from £8 to £12 per acre, with the option of purchasing the Freehold within the first seven years. No tithe. Near the main road, Enfield Highway, about nine miles from London.

Apply H. MOORE, 59, Bishopsgate Street Within, E.C.

TO LET, a well-established NURSERY, about 12 acres in extent, well stocked and in fine condition, situated near a large city.—Full particulars on application to A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE LET, with early possession, the well-built HOUSE, with Farm Buildings, and about 7 acres of excellent Nursery Ground, situate at Sandridge, and now in the occupation of Mr. E. Hunt.

Apply, Mr. A. RUMBALL, Land Agent, St. Albans.

TO LET, FLORIST and FRUITERERS, Double Plate Glass Front. Rent £15 a year. Price £23. Bargain.

Apply, SAPSWORTH, Railway Approach, Kew Gardens.

To Gardeners, Fruit, and Flower Growers.

A splendid opportunity to an industrious capable man.

TO LET, within 6 miles of Manchester, Seven Large GREENHOUSES, mostly 60 feet long, heated with 4-inch Hot-water Pipes, on most approved principle. Boilers almost new. Plenty of Water with Land (cheap) if required. Rent £40 per year.

For further particulars, apply to T. LEASON, Acomb Street, Manchester.

NATIONAL CO-OPERATIVE FLOWER SHOW 1890.

FIFTH NATIONAL CO-OPERATIVE FLOWER SHOW, Crystal Palace, AUGUST 16, 1890.

Schedules now ready of over 825 Prizes, comprising Gold, Silver, and Bronze Medals, and £350 in cash; Special Prizes of Goods, Certificates, &c.; post-free on application to

EDWARD OWEN GREENING, Hon. Secretary.

At this Show, the Agricultural and Horticultural Association (Ld.), offer £150 for best produce grown from their reliable One and All Seeds. 3, Agar Street, Strand, W.C., and Creek Road, Deptford, S.E.

THE

GARDENERS' ORPHAN FUND.

NOTICE.

THE ANNUAL GENERAL MEETING of the SUBSCRIBERS to this FUND will be held at the Cannon Street Hotel, on FRIDAY, July 18th next, for the purpose of receiving the Report of the Committee and the Accounts of the Fund for 1889-90, Electing Officers for the ensuing year, and for the ELECTION of TEN CHILDREN to the benefits of the Fund.

The Chair will be taken at 2 o'Clock precisely, and the Ballot will close at 4 o'Clock. The Annual Dinner will be held the same evening at 5 o'Clock. Tickets, 5s. each.

A. F. BARRON, Hon. Sec.

Royal Horticultural Society's Gardens, Chiswick, London, W.—June, 1890.

P.S.—The Voting Papers have all been issued; any Subscriber not having received one is requested to communicate with the Honorary Secretary.

DAILY PARCELS EXPRESS SERVICE to the CONTINENT, *vid* Queenborough, Flushing, Kaldenkirchen.

This Parcels Service, in direct connection with the German and Austro-Hungarian Posts, is specially adapted for the rapid and regular despatch of Plants, Bulbs, &c. No Certificate required for Germany. Tariffs free on application. Goods also accepted for Conveyance by *Petite and Grande Vitesse*.

BEST, RYLEY AND CO., 88, Bishopsgate Street, London, E.C.

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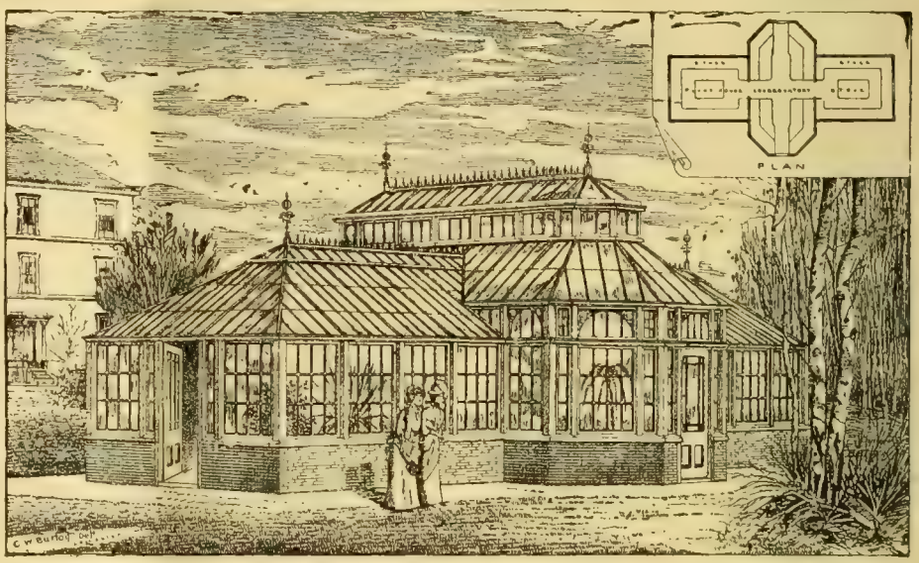
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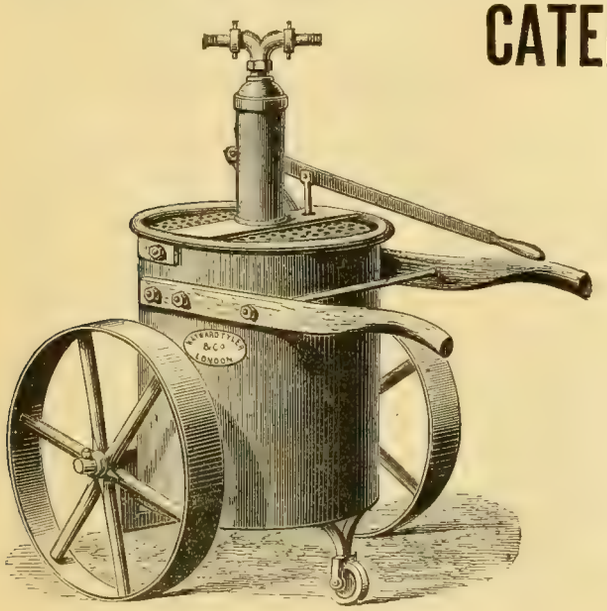


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THE

Gardeners' Chronicle.

SATURDAY, JULY 12, 1890.

FROM THE DOURO.

IN the Bordeaux district, and in nearly all the wine-growing districts of France, while the landowner finds his best profit in cultivating the Vine, he has the alternative of growing other crops. In the Upper Douro district of Portugal, from which we derive our port wine, no such alternative in the majority of cases exists.

The steep slopes of the rocky hills, which form the course of the river, and furnish fine wine-growing soil, 20 or 30 miles on either side of the swift and winding stream on its upper course, are of no use, as a rule, for anything but growing Grapes. A sheep could hardly get there, and sheep or goats could not find enough to live on, so that the devastation wrought by the Phylloxera on the vineyards of the Douro has been fraught with much greater damage to the farmers than in those regions, even in France, where the Vine was almost obliterated. The agriculturist there had the alternative of other crops, cereals, roots, or grass, but the Douro farmer saw his only source of wealth disappear from the ground, and could hope for nothing to replace his Vines, except, in some cases, the much less valuable Olive. It is melancholy to climb the slopes of hill after hill, and see the crumbling terraces, studded with degenerated Vine-stocks, much of whose former generous blood is still maturing in the lodges of Oporto, and in our English cellars. Not that re-planting has not taken place, for the re-planted vineyards one sees on every hand, but they form, on the line of country which I saw, no large proportion of the whole. Impoverished, or deficient in energy, under this gigantic misfortune, the Douro farmer, in many cases, makes no effort to regain his former position, and lets his sunny slopes lie fallow, a prey to weed, and broom, and weather. It is, however, likely, that, awakening to the possibility of fighting the Phylloxera and other enemies successfully, by the same means which his French brethren have so successfully used, and stimulated by the example of the enterprise of some in his neighbourhood, he will again have his

vineyards in bearing order. I venture to predict that, before ten years are over our heads, the production of the Upper Douro will have enormously increased, and that the wine which has for 200 years stood first in Englishmen's estimation, will be cheaper and better than ever.

We find in the Douro, as in France, our countrymen to the fore in enterprise and energy. Houses whose names are household words in the trade are showing the way in the Douro, and leading or backing the native wine-growers. Croft & Co. have purchased a large "quinta," as all the estates are here called, and are rapidly restoring the vineyards to a wine-bearing condition. Mr. George Warre, of the firm Silva & Cosen's, has quintas at Vesuvio, Tua, and Pinão, which promise wonderful things even this year; and other firms, Graham & Co. for example, are also leading the van in this good example to the Portuguese wine grower. The means used to combat Phylloxera, mildew, &c., are the same as those which the French have used against these scourges, and when one sees the vineyards stretching a thousand feet upwards to the hill tops, one can, to a certain extent, realise what an amount of money, labour, and intelligent supervision, the work of applying the remedies entails. There is no possibility, as with Messrs. Gilbey, at Loudenne, laying down a mile or so of distributing piping on land comparatively flat. All must be toilsomely carried and distributed by human labour, and in the contemplation of the task, one's mind is filled with much excuse for the Douro farmer. One grasps too what a toilsome journey much of the fruit must have ere it reaches the "lagar," or press house, where the foaming "must" runs ruddy to the "tonels."

I am indebted to Mr. Warre for much instructive information on the culture of the Vine, and the sorts used in the Douro. The favourite native stock is the Maurisco, the root of which strikes straight and deep, and resists, as a rule, the Phylloxera. The bearing of this variety is, however, very capricious, and they are chiefly used as stocks for grafting, to which use the American wild Vine is now also being largely applied. There are said to be about 1400 varieties of Vines actually grown in Portugal, but the following are the favourites in the Douro:—Red: Tinto Cão (Black Dog), Foriga, Souzão, Tinta-Franciska, Tinta-Carvallia, Tinta-Roriz, Alvarilhão, and Bastardo, this last producing a very delicate sweet juice. White kinds are:—Rabo-d'Ovelha (Sheep's-tail, from the shape of its branches), Sereio or Malvazia Grossa.

Mr. Warre is cultivating, as an experiment, at one of his vineyards a variety called by the French name of "Teinturier," which has a purplish-black foliage when mature, and the berries of which contain a juice, without pressure of the skin, black enough to write with. We can, however, tell him, from the experience of others, that when matured this Vine's colouring matter will probably dwindle to nothing.

The weather, which remained unusually cold up to the end of May, has now apparently settled, and the flowering of the Vines is taking place under very favourable circumstances. It is early days to speak, but the promise so far is of a fairly abundant vintage.

THE BULB CROPS.—It would appear, from reports sent from Holland, that the fields of Hyacinths, Narcissus, Yellow Crocus, and other leading bulbs looked very promising at the end of June. Tulips are already harvested, and they are very fine indeed this season. Crocus and Hyacinths are also expected to be of fine quality. Consequently, the prices of sorts most in demand of Hyacinths, Narcissus, Tulips, and Crocus, and which are therefore most largely cultivated, will probably range below the average, and, judging from some lists which have already come to hand, this is the case.

NEW OR NOTEWORTHY PLANTS.

ALOCASIA REVERSA, *N. E. Br.* (*n. sp.*).*

THIS is an attractive foliage plant, having the leaves variegated in a manner that is rather uncommon among Aroids; usually the ground colour is dark, with the course of the midrib and veins marked with a light tint. In this species the colouration is the reverse; and, although well-defined and strongly contrasted in the younger foliage, there is a softness about it that makes it rather pleasing to the eye. The plant has been recently introduced from the Philippine Islands by F. Sander & Co., who have forwarded specimens to Kew for determination, from which it would appear to be one of the small species, but this may be due to the plant not having attained its adult stage, since few plants vary so much in the size of their leaves and flowers, in accordance with their age, as do Aroids. Of the species known to me it would appear to come near to my A. sinuata, also from the Philippine Islands, and shows the same peculiarity in having the bract or flowering-leaf sometimes terminated by a rudimentary leaf-blade.

CYPRIPEDIUM "ELINOR" (*new hybrid*).†

This is rather a nice flower, just received from Mr. Drewett O. Drewett, of Riding Mill-on-Tyne, in whose fine collection it has been raised by Mr. A. J. Keeling. It is a hybrid between C. selligerum var. majus (female), and C. Veitchii (male), and is fairly intermediate between the two parents. As this is the first time of flowering, the peduncle is but one-flowered, but there can be no doubt that as the plant gets stronger it will become two or more flowered, the secondary bract showing every sign of producing another flower. The foliage is very large and handsome, and the flower quite equal in size to that of E. selligerum var. majus.—*N. E. Brown.*

* *Alocasia reversa*, N. E. Br., n. sp.—Plant dwarf. Petioles about 6 inches long, terete, green, smooth. Blade deflexed, 5 to 8 inches long, 3 to 3½ inches broad, ovate-sagittate, acute, or sometimes shortly and rather abruptly acute, the basal lobes separated down to the petiole with an acute and narrow sinus between them, their obtusely-rounded tips being 1 to 1½ inch distant from each other; the margin very slightly sinuate; the midrib has four widely-spreading primary veins on each side, and the pectical branch, which passes into the hind lobes, gives off two distant primary veins on the outer side, and one from the inner near the apex; the upper surface has a broad band of dark green along the midrib, running out into narrow triangular points along the course of the primary veins, the broad border of the leaf being grey-green, scolloped out by dark green along the primary veins, the margin itself is of a distinct clear green; the under-surface is of an uniform light green. Bract-leaf with a membranous sheath, pale whitish-green, simply mucronate or terminated by a rudimentary convolute leaf. Scape 4 to 5 inches long in the examples seen, light green. Spathe about 2½ inches long, with an ovoid, whitish or ivory-white tube, about half as long as the very revolute, oblong, acute limb, which is white with purple-red borders. Spadix 2 inches long, the female part about ½ inch long, male part ¾ inch long, milk-white, continuous with the bright ochre-yellow, rugulose appendix; ovaries ellipsoidal, not very crowded, light green; stigma large, two to three lobed, whitish; ovules four to seven.

† *Cypripedium "Elinor"* ×.—Leaf oblong, acute, and three-toothed at the apex, and growing to 1 foot in length, by 3 inches in breadth, the upper surface is bright green, with dark green nerves and cross-veins, the latter more or less grouped in irregular bands; under surface uniform greyish-green. Peduncle stout, brownish-purple, hairy, about 1 foot long. Bract about 1 inch long, acute, light green, rather shorter than the pedicel of the ovary, which is light green, with darker ribs, and hairy. Upper sepal orbicular, acute, nearly 2 inches broad, white faintly tinted with green in the centre, yellowish-green at the base, with numerous ochre-green nerves, slightly tinted with purple-brown. Lower sepal ovate, white, with green nerves. Petals 3¼ inches long, in shape like those of C. selligerum var. majus, but broader, more drooping, and somewhat curved back, purplish, with a whitish area under the midline at the base; the nerves purple or brownish, the midline and upper margin with a dark olive hue spread over them, the basal part above the midline for nearly half-way to the apex is rather densely marked with blackish-purple spots, and the upper margin for about four-fifths of its length is marked with wart-spots of the same colour, and there are some similar wart-spots at the middle of the lower margin; the lower nerves at the basal part are marked with small purple-brown spots; the base is light green and both margins are ciliate, with blackish-purple hairs nearly or quite to the apex. The lip is 2 inches long, and like that of C. selligerum in shape; the inflexed sides are shining purple, with darker spots, and the pubescent toe part dark brownish-purple shading into greenish at the apex. Staminode transverse, reniform, three-toothed in front, ochreous, reticulated all over with green, pubescent. From the above it will be seen that this novelty is more like the seed-parent than its male progenitor, but differs markedly in the paler colour of the upper sepal, and the more drooping and more densely spotted petals. This hybrid is a good addition to the already existing forms, and only needs to be seen to be appreciated. *N. E. Brown, Herbarium, Kew.*

INDIA.

DARJEELING.

WE started from Darjeeling, February 22, 1890, with my cook, a faithful chaprassi, and some coolies to carry provisions, bedding, &c., and joined the rest of our party the next day, when we were seven ponies with riders, and soon got into the cart road to Simana Fort where Nepaul joins Darjeeling. All along our way, right up to Phalut, we followed the boundary road along the Sangalila ridge of hills. At Mambhanjan there is a saddle, and you look down the little Ranget valley with its tea gardens on one side and cultivated ground on the other. When we got on the ridge, we passed through fairly good forest, and saw some fine large Rhododendron trees in flower, mixed with a kind of Oak and a Brassaopsis; the buds of the Rhododendrons were a delicate pink, and the fully expanded head of flowers very handsome and large, the flowers of a delicate primrose hue, with the base of the corolla of a rich plum colour, the leaves quite a foot long with a silvery white under-surface. The bark is smooth, and like that of the Scotch Fir in hue. Soon after, we saw masses of pretty pink Primroses in full bloom on the rocky sides of the mountain path, the plants were scattered prettily about the place, and a rim of green leaves helped to show off the pink centres of flowers. One or two pure white flowers were seen. After a while the trees thinned out, and left us with nearly pure Bamboo, and a pretty little Daphne in full bloom, and so sweetly scented. The plant flowers before its leaves appear, and from the bark of it the Nepalese make paper. The Bamboos continue right up Tonglu Hill, where at the top are some fine Rhododendron arboreum; in the middle of these, on a nice flat piece of ground, is the Tonglu Bungalow. I found a very pretty blue and white Gentian here, it grows all along to Phalut, 10,000 feet altitude. We slept in the Tonglu Bungalow. Rose at six, and started soon after eight. The snows were very fine, but rather cloudy. We went down the side of a very rocky hill, the path chiefly cut out of the rock, and there were plenty of rock-streams flowing below and across the road, the rocks surmounted with Bamboos, Rhododendrons, Oaks, Berberis, and other smaller plants. Primroses, with here and there a little snow, were very picturesque, while a grand view of the forest below, with the numerous valleys, rises and depressions, and the more distant ranges culminating in the snow range of Kinchinjunga, formed a scene not to be easily forgotten. When we got to the top of the ridge, we could see some eleven or twelve ranges of hills parallel to the one we were on, gradually getting fainter and fainter till they merged into mist in the distance. These views—and there are many such to be obtained—are very grand indeed, being of such length and magnitude, occupy the whole field of view, and produce a scene which can be gazed upon for hours, ever showing something new, and impressing the beholder with awe and wonder.

After skirting the rocky hill of Plongthunka we descended into a steep valley, with Rhododendrons, Oaks, and Bamboos (such as is found at lower elevations), and rose through uninteresting country to an open place called Kalipokru, where there is a black pool of peaty-water and a fine view into Nepaul, a bare hill being before us surmounted with a few Fir Trees (Abies Webbiana). We fed the ponies on a pretty, graceful thin red-skinned Bamboo, which takes the place of the Maling Bamboo at high elevations.

We did not let them graze, as the poisonous Aconite occurs here and above this very plentifully. After tiffin we went up to the top of the bleak hill (Bilshi banghan), and descended into a valley containing Fir trees, and then up a fearfully steep hill enveloped in cloud and mist, driven here and there by powerful gusts of wind, and finally, much to our delight, reached Sandakphin, 12,000 feet—a very bleak place indeed, and fearfully exposed—about 2 o'clock. No water being procurable we got some ice, and proceeded to make tea, after which we retired into the bungalow, as it was bitterly cold. Dined, and went to bed. The next morning the ground was white with snow.

After breakfast the coolies refused to go on, on account of the cold, so I went with A. B. and remonstrated with the ringleader, and my invaluable chaprassi got my coolies to start, and the others followed.



Fig. 5.—Lilium avenaceum. (see p. 46)

We got our ponies out, and then I tried to get a photo of the snows, which looked very fine, with a good many wild clouds flying about; the wind was very strong, so I had to get three men to hold the legs, and one fellow to hold the cap on, and managed to get one photo, one being spoilt by the cap being blown off; we were just about icicles by the time we had finished. Mounted our ponies, and proceeded to Phalut, the road to which is fairly level. Descended into a valley which was a real Fir forest, and very pretty with undergrowth of Bamboo and Rhododendrons. The huge masses of moss on the stems of the Firs were grotesque, the snow adding greatly to the effect. We then rose up a barish hill to Sikargaum, and here might well have imagined ourselves in the realm of the Ice King of Grimm's *Fairy Tales*; the ground, path, and grass, covered with snow; clusters of Fir trees, or solitary giants, with every branch covered with a beautiful fringe of white ice (drifting mist frozen), and the sun shining brightly on the whole, while a keen north wind reminded us that we were higher than the hot plains of India.

Phalut Bungalow shortly came in view on a nice rounded hill, without a tree on it. A steep dip, a brisk gallop along a flat ridge, and a rise brought us to the bottom of the Phalut hill, which we climbed up, and had tiffin in the Bungalow. This is the last point of British territory, and runs up like a wedge between Sikkim and Nepaul. The day was wonderfully clear, and the view of the snows was beautiful, and were not obscured by clouds until 2 P.M.; they, as a rule, become clouded over at 10 A.M. One hill rises in the foreground, and if we except this, no high ridge comes between you and the everlasting snows. The whole range is clearly visible from Everest in the West, to the low Bhotan snows in the extreme East. I suppose Phalut is not 12 miles as the crow flies from the snow-line of Kinchinjunga and its neighbours, of which the chief is Jann.

Here we spent a clear day, making an excursion to Chembhanjam in Sikkim, and saw lots of clusters of a most exquisitely pretty pink Primrose, with quite a rich brownish-yellow eye. The plants were in full flower, an edging of green leaves, and the whole centre of the plant one mass of flowers, which were covered with yellow bloom, like our Auriculas at home. They were pretty, peeping out of their rocky or mossy homes. The graceful and slender yellow-stemmed Bamboo, which grows here, is also very pretty, the secondary stems being quite red, and the leaves small and green. We saw two lovely eagles, one a pure white with a black tip to each wing; and the other a rich reddish-brown, with ragged wings and a huge tail, and they could fly with a vengeance. We saw a jolly Juniper on our way home, and at the bottom of Phalut Hill a pretty little dwarf creeping Cotoneaster microphylla, I think, covered with little red berries.

The next day we started back. All the ice had vanished from the Fir trees at Sikargaum. We got back without adventure, and, having fine weather, enjoyed the trip very much. *Extracts from an Indian Forester's Letter.*

MANURIAL REQUIREMENTS OF GRAPES AND STRAWBERRIES.

Within the last few years considerable advance has been made in the knowledge of all that relates to the application and action of manures, and not the least important is that which shows us that there is a direct connection between the supply of nitrogen to a plant, and the formation of non-nitrogenous substance.

In experiments at Rothamsted with the sugar-yielding root-crops, it was found that there was more sugar produced the larger the amount of nitrogen applied as manure, although not in proportion to the amount supplied. Also that the efficiency of a given supply of nitrogen is greatly dependent on the available minerals of the soil. Taking the mean of many investigations in which potash formed an ingredient in the manurial supply, it was found that 1 lb. of nitrogen in manure yielded about 20 lb. of sugar. Fresh ripe Grapes contain, on an average, about 20 per cent. of sugar. Now sugar is an organic substance composed of carbon, hydrogen, and oxygen, constituents which are derived from the atmosphere and water. So that if nothing were taken from the soil but pure sugar, there would be no loss of mineral constituents. But it happens in practice that nearly the whole of the constituents of the Vine-cane, and of the leaves, are lost to the soil. Besides, the skin of the berries, and the seeds, contain a large proportion of alkaline salts.

It is obvious, therefore, that in the growth of Grapes there is, besides vegetable matter, a great loss of the mineral ingredients of the soil. To show the nature of this loss, it may be mentioned that a ton of Grapes would contain about 9 lb. of alkaline salts, which would be principally potash, besides that removed by the growth of the wood and leaves. So that nearly as much mineral plant-food would be lost to the soil as by the growth of a corresponding quantity of Sugar-cane.

It is extremely desirable, therefore, that in all manurial applications to Vines, both phosphates and potash salts should enter into its composition. Hence we find Ville stating that he used to think the Leguminosæ, and the Potato, were the plants which showed a special preference for potash, but he now observes the Vine distances them in this respect in a most surprising manner. In the case of the Potato, the suppression of Potash manifests itself by a diminution of the crop; with the Vine, however, little or no fruit makes its appearance, and we virtually get no crop at all. Further, when potash and phosphates are lacking, the leaves of the Vine do not attain their full development. In the month of July particularly, Prof. Ville has noticed that the leaves become red, and spotted with black; after which they often become very dry, and are easily reduced to powder under the pressure of the fingers.

Experiments with Grapes at the State College of Kentucky, U.S., recently, have shown that the effects of fertilisers containing potash and phosphates were very marked. The Vines so treated were more thrifty, and comparatively free from blight and disease, which was more or less destructive on Vine areas not so treated.

The Strawberry.

In a recent contribution by Mr. J. H. Hale, of Connecticut, who has been an extensive cultivator of Strawberries for the past twenty years, and has sometimes obtained from 400 to 500 bushels of Strawberries from one acre of land in a single year, it is advised that a thorough preparation of the soil to start with should be carefully attended to, if we expect to make a success of cultivating this fruit.

Next, a liberal manuring of some sort is an all-important question.

Well-rotted stable-manure, if applied liberally, will give good returns, but from a careful study of the manure question in the cultivation of large fields of Strawberries for market, Mr. Hale thinks a better crop of fruit can usually be had from the use of commercial manures having less nitrogen, and the fruit will be of better texture and flavour, than when stable-manure is used, or nitrogenous commercial fertilisers. The Strawberry is a gross feeder, and whenever well-rotted manures, or fertilisers, containing a large amount of readily available plant-food of a nitrogenous character—such as blood and bone, Peruvian guano, or fish-scraps—are used, it will take them up greedily, and a very rank foliage growth is the result the first year, and the plant seems to make its plans for an enormous crop the next season. But somehow it never quite keeps its promises, making a greater show of foliage than of fruit, and what fruit there is, is watery and insipid in flavour, and lacking in firmness.

On the other hand, Mr. Hale has found a manure of raw ground bone and wood-ashes, or muriate of potash, to encourage a much less rapid plant-growth early the first season, which is steady and even the whole season through, so that a fine stand of well-developed, but not rank, foliaged plants is encouraged that will always, at fruiting season the next year, give a heavy crop of firmer, brighter coloured, and better flavoured berries than can be grown on the same soil by the aid of manures containing a large percentage of nitrogen. Whatever manure is used, it should be applied broadcast after the soil is prepared, and thoroughly harrowed or raked in.

Potash, in its various forms, have been tested on light sand, on loamy soil, on heavy clay, and on alluvial lands, and in every case this manure has been found to greatly improve the flavour of the Strawberry; its effects, however, being more marked on some varieties than on others.

It also has a marked effect on the colour of the fruit, giving it a much richer, darker colour; and while the time of application seems to make little difference with the flavour, it does with the colour, the most marked change being noticed when it has been applied early in the spring previous to fruiting. *J. J. Willis, Harpenden.*

Notices of Books.

Orchids: their Culture and Management.*

Building on the foundation laid in 1878 by Mr. J. Britten, F.L.S., and Mr. W. H. Gower, in *Orchids for Amateurs*, and by a careful digest of most of the best writings on the subject, Mr. W. Watson, Assistant Curator of the Royal Gardens, Kew, with the aid of Mr. W. Bean, a foreman at that establishment, has succeeded in producing a work on Orchids which cannot fail to be of benefit to Orchid-growers in general, and to amateurs in particular. The book commences with general cultural directions respecting the management of the houses and their occupants, the average temperatures, rules for shading, watering, ventilation, &c., followed by carefully written and comprehensive articles on insects and other pests, and on the treatment of newly-imported Orchids.

Chapter II. is devoted to interesting details on the structure and other peculiarities of Orchids, chiefly written by Mr. Britten for the former work; after which the descriptive work commences, the enumeration of the genera and also of the species under each genus being placed alphabetically—a method which greatly facilitates research. At the commencement of each genus, its general cultural management is touched on, and again instructions are given in most cases during the enumeration of each species, so that ample details are supplied, which need only to be grasped and intelligently carried out, in order that success may follow. Also at the foot of each description a reference to a reliable figure is, where possible, given, and a further enumeration of the best varieties of each species, which is, in most cases, fairly accurate, although some slips occur. For example, under Aërides odoratum, the best varieties are stated to be majus, cornutum and purpurascens; but cornutum is, we believe, a synonym of A. odoratum, and not a varietal name.

A very good feature in the book, is the chapter at the end treating of British and other hardy Orchids, which may be grown by every one with a garden, and out of which some few who cultivate them well get as much pleasure as others do out of the showier hot-house and greenhouse species. In conclusion, the work gives an enumeration of fifty select Orchids for stove, a like number for Intermediate-house, and the best selection of the same number for Cool-house, all of which will be of as great service to the amateur in his selection, as a perusal of the cultural directions given under each species will be in his management of them afterwards. Profusely illustrated with coloured plates and engravings throughout, the work should become popular. Of the illustrations, it may be said, that the greater part of them are good, although some of the single flowers given are neither accurate nor flattering to the subjects; one we note under a manifestly wrong name, viz.: "Fig. 83, flower of Odontoglossum hastilabium," which bears no resemblance to that species, but is a badly executed diagram of one of the O. grande section. A few others are also open to question. We trust that the aim and desire of both author and publisher will be accomplished, and that the work, which is good and will prove useful, will have a successful and long career of favour among lovers of Orchids generally.

* *Orchids: their Culture and Management.* With descriptions of all the kinds in general cultivation. By W. Watson (Assistant Curator, Royal Gardens, Kew), assisted by W. Bean (Foreman, Royal Gardens, Kew). L. Upcott Gill, 170, Strand, London, W.C.

A Manual of Orchidaceous Plants. Part VI. Cœlogyne, Epidendrum, &c. (James Veitch & Son)

Following the plan already well known in their previous issues of this excellent and exhaustive work on cultivated Orchids, Messrs. James Veitch & Son now publish Part VI., devoted mainly to a very clever and comprehensive review of the difficult genera, Cœlogyne, including Pleione; and Epidendrum, including Barkeria and Nanodes, together with Spathoglottis, Phaius, Thunia, Chysis, Calanthe, &c., all of which are dealt with in the same masterly manner as the subjects treated of in the previous issues and details of the history, introduction, and cultural requirements of each species given, which, on the one part, speaks of long, diligent, and careful research; and on the other, of experience which only can come to those who, like the authors, have made the collecting and cultivating of Orchids a lifetime study, and the publication of their knowledge a labour of love. The present issue, which is beautifully illustrated throughout, runs over some 134 pages, and it must be with a sigh of relief that the authors regard the finish of such terrible genera as Cœlogyne and Epidendrum. Doubtless their satisfaction will be alloyed by twinges of conscience, as now and then beauties, hidden in some collections, and not known as being in cultivation, are revealed, clamouring to know why they have not been admitted; but the same would take place if all the talent in Europe were consulted, as the writers of such a work have to discriminate between the chance shutting out of a few desirable species, and the risk of rendering the work tantalising by the enumeration of unprocurable beauties. By the same rule, purely botanical things are only touched on in a general way. In the present issue, therefore, although the showy divisions of the sub-tribe Erieæ are dealt with, the type Eria is excluded, and wisely so, for it is a large genus containing a few really pretty species, of which most of the best are not in gardens. Under each genus an enumeration and description of the hybrids is given after the species, the notes and illustrations relating to the crosses between Phaius and Calanthe being particularly interesting, and the copious foot-notes and references given throughout the work still further assist those who consult it, and will doubtless foster a love for these delightful plants with many, by inducing them to consult the references given, and examine the figures referred to. To those who already subscribe to this publication, it will be enough to say that it fully maintains its high character; to others, we recommend a better acquaintance with it.

BALANITES ROXBURGHII, AND CITRULLUS COLOCYNTHIS.

As an illustration of what one may meet with in commercial sale-rooms, and as a proof of the necessity for scientific knowledge as an aid to commercial success, the following paragraph, from our contemporary, the *Chemist and Druggist* of June 7, will be interesting:—

"At last week's drug auctions a small case of a drug imported from Bombay was offered as Colocynth, and sold at 1*d.* per lb. As there were only about 70 lb. of the article, the investment was not a ruinous one to the purchaser, but so far as regards the purposes to which Colocynth is applied, his bargain is absolutely valueless. The fruit, which is not at all like a Colocynth, is about the size of a large Walnut. It has a brownish outer shell, and an exceedingly hard inner one, which encloses one single seed rich in oil. The fruit has been identified as Balanites Roxburghii, belonging to the natural order Simarubeæ. The plant which yields it is a small one, and grows plentifully in India, Egypt, Senegambia, and other countries on the West Coast of Africa. The oil which is contained in the seed is known to the natives by the name of Zachun oil. The young fruits are purgative, and edible when ripe."

It is scarcely possible to conceive how any one could mistake a Colocynth fruit, which is produced by a Cucurbitaceous plant, the Citrullus colocynthis, for the small, woody fruit of the Balanites. The Colocynth fruits are usually about the size of an Apple, with a thin skin covering a mass of pulp, in which are embedded the numerous small brown seeds.

HAWKESYARD PARK, NEAR RUGELEY.

This place, the residence of Josiah Spode, Esq, has had, for the past thirty years, a reputation for good specimen stove and greenhouse plants, and this reputation is still well maintained, and Mr. Chapman is still recognised as a most successful grower of plants. Age, although creeping slowly on, is borne wonderfully well by him, and he works as earnestly amongst his plants as he did a quarter of a century ago, when he succeeded Mr. May, who was one of the May's of Ealing Park in the palmy days of plant growing. Mr. Chapman was also at Ealing Park when Mrs. Lawrence and Ealing Park were known far and wide for fine plants.

At Hawkesyard, a very fine lot of plants is to be seen, and Mr. Chapman has recently exhibited at the Crystal Palace and Regent's Park, but the Hawkesyard plants are not seen elsewhere excepting at a few local shows, when a few are sent, but not for competition. As exhibiting is not cared for about Hawkesyard, it is a matter for surprise that such a fine collection is not more often seen at exhibitions. A large number of Ixoras—quite eighty plants—ranging from quarter specimens to large specimens, were in full beauty in the middle of May, and a large proportion of them were quite fit for exhibiting for prizes. A selection of from thirty to forty plants at one of the great London exhibitions would have astonished south-country folk, as being in admirable health and loaded with flowers. Amongst them are Regina, raised at Hawkesyard; Dixiana, Fraserii, Pilgrimii, very fine; Williamsii, also very fine; and some superb plants of the old Coccinea and Coccinea superba. These, together with Crotons



Fig. 6.—Lilium cordifolium. (see p. 46.)

and other plants, are growing in the old Victoria Regina-house. Fine specimens of Allamandas, Crotons, a monster plant in pot of Combretum purpureum, which will be in full beauty presently, with handsome racemes of rich crimson flowers, a stove creeper very seldom seen; also a quantity of specimen Eucharis amazonica, Pancratiums, Clerodendrons, and other plants. On a rafter of the Victoria-house, a fine plant of Hoya imperialis was recently flowering.

There are some very fine Ericas and Aphelexis, amongst them a capital specimen of Child's variety of A. humilis, very pale light pink; Dracophyllum gracile, one in particular a model plant; Statices of sorts, a monster Darwinia tulipifera, well clothed with foliage and flowers; Eriostemons, Pimelias, Chorozemas, some grand Phœnocoma prolifera and other plants. Mr. Chapman is a master-hand amongst hard-wooded plants especially, and loves his work.

The rockery garden is a distinct feature here, and was formed when a quantity of stone was excavated some years ago, for building walls, &c. It is spacious, and the high surrounding banks have been planted with Rhododendrons, which thrive here; Azaleas, hardy Heaths, and other plants. It is in reality cut out of the solid rock, and soil placed in positions for planting. Two fine specimens of Magnolia Soulangeana were in full bloom in one part of it; and in the centre was an Azalea-house, of octagonal shape, the centre stage and side-stages being sold rock, the hotwater-pipes running along a channel cut in the rocky pathway. In this house is a fine plant of the old Azalea sinensis well flowered. Conifers, Rhododendrons, and other hardy trees and shrubs luxuriate here; and there is a large bushy tree, quite forty or fifty years old, of the old Halesia tetraptera (the Snowdrop-tree) in full bloom; a long subterraneous passage leads from the rockery garden to the fernery, which also was cut out of the solid rock. *W. D.*

BRITISH UREDINEÆ.

Melampsora betulina.—This common Melampsora on Birch leaves has been asserted by Hartig to have for its Æcidiospores Cæoma laricis. I have this year repeated Hartig's culture with success.

Melampsora vernalis, Niessl.—Mr. James Taylor has for some few years found Cæoma saxifragæ on Saxifraga granulata at Clark Farquhar, N.B. Last month he was kind enough to send me specimens. On examination the lower leaves and stems were found to be affected with the above-named Melampsora, which has not previously been recorded in Britain. It appears that this Melampsora is without proper Uredospores, having Æcidiospores only in the Cæoma named above.

Cæoma orchidis.—For many years past I have found this fungus on Orchis maculata on North Wootton Heath, but I have hitherto been unable to trace its life history. This year, however, I placed the ripe spores on a plant of Salix repens, and in ten days was rewarded by gathering the Uredo. Applied to other Willows, viz., S. Capræa and viminalis, no result has followed. It is probable that this is a distinct species of Melampsora on S. repens. Mr. Soppit has recently found these two spore forms growing in close proximity to one another near Southport.

Æcidium aquilegiæ.—This comparatively rare Æcidium occurs near Lewes, in Sussex, and in Lake Windermere. My friend, Mr. J. H. N. Jenner, was kind enough last August to conduct me to the Sussex habitat. After a careful examination of the grasses growing near, we arrived at the conclusion that a Puccinia on Agrostis alba was probably connected with the Æcidium. Material was brought home, kept through the winter, and applied this spring to Aquilegia vulgaris. In due course the Æcidium appeared. In May last my friend Mr. H. T. Soppitt accompanied me to the habitat, on the east side of Lake Windermere. We found the Æcidium in perfection, associated with Agrostis vulgaris of the last season still bearing the Puccinia. Specimens of the Puccinia were brought home by Mr. Soppitt and myself. They were caused to

germinate, and applied to Aquilegia plants in our gardens at Bradford and King's Lynn respectively. In both cases the cultures were successful in producing the Æcidium. The ripe Æcidiospores from Windermere were applied by Mr. Soppett to Agrostis vulgaris, and by myself to A. alba, and gave rise to the Uredo in both cases. It is evident, therefore, that Æcidium aquilegiæ is connected with a Puccinia on Agrostis vulgaris and alba, which may be designated P. agrostidis.

Æcidium periclymeni. — This Æcidium, which is widely distributed in Great Britain, has been made the subject of investigation by me since the year 1883. After twenty-eight unsuccessful experiments I this year applied the spores to Festuca ovina and duriuscula, and succeeded in producing the Uredo. The teleutospores, which are similar in form to those of P. coronata, being surmounted by a number of blunt curved processes, were also applied to a plant of Lonicera, and in due course gave rise to the Æcidium. This Puccinia may be designated P. Festucæ. It is possible that the Uredo of it was described by De Candolle under the name of U. Festucæ, on F. "glauca," although his description is, to say the least, obscure. Dr. G. Lagerheim has described a Puccinia, viz., P. gibberosa, on Festuca sylvatica, but the figure he gives of the spores, although coronate, hardly agrees with the above. The Uredo spores also are accompanied by paraphyses which I have not observed on my plant. *Charles B. Plowright.*

SHARPLESS' SEEDLING STRAWBERRY.

Although this variety was raised so long ago as 1872, by Mr. J. K. Sharpless, of Catawissa, and has in America obtained the name of the Prince of Strawberries, it has not acquired popularity in this country. Mr. Barry, of the firm of Ellwanger & Barry, nurserymen, of Rochester, who brought the fruit into notice, wrote: "We had ample opportunity to give it a thorough trial, and it pleased us exceedingly. Its vigorous growth is one of its characteristics, and no other variety that we know of produces such thrifty strong plants. It yields immense crops under ordinary treatment. The trusses are strong, and well proportioned for the burden they are intended to carry, although in many cases the fruit is so large as to bend them to the ground."

The berries are large, an average specimen measuring 1 to 1½ inch in diameter, and fruits have been grown which weighed 1½ oz. Colour light red, smooth, shining. Flesh firm, sweet, with a delicate aroma of excellent quality.

With such a high character as which, so far as appearances go, is fully borne out by our illustration, the Sharpless Strawberry would appear to be worth the attention of growers in this country.

ROSES.

ROSES ON TREES.

Those who are desirous of seeing the full beauty of climbing Roses brought out, should plant them at the base of the stems of trees, as it is only when they can have their heads, and grow away quite unrestrained, that they look natural. The kind of trees most suitable for growing them on, are old Oaks that have thin, spare tops, as the Oak does not root near the surface, and when in a state of decrepitude forms a capital prop to any climber that is hardy enough, and sufficiently strong-growing, to find its way up the branches.

To have the Roses flower well, the trees they are planted against should be out in the open, or fully exposed to sun and light, and climbing sorts put on them. Climbing Devoniensis is such an unruly grower in a garden, and makes such long shoots, that it seldom flowers well; but for planting on a big tree it is one of the best, as, with a tree for its support, and unrestricted space, it tames itself, and then comes the bloom. Gloire de Dijon is a grand Rose under the same conditions, and, untouched by the knife, flowers in the greatest profusion. There are many other good sorts that are quite robust enough to climb up trees, and among them may be named Cheshunt Hybrid, Reine Marie, Henriette, Madame Berard, Dundee Rambler, and Ayrshire Rambler.

As growers keep most sorts of the climbing Roses in pots for sending out, it is a good time to plant now, as by winter they will have established themselves, and then they will start strongly in the spring. To give them a fair chance at the start, large holes should be dug, and filled with fresh rich soil; or the ground broken up where the plants are to go, and a heavy dressing of manure worked in. *J. Sheppard.*

TREES AND SHRUBS.

ASIMINA TRILOBA.

This hardy shrub is somewhat rare in cultivation, and for this reason, added to its being in flower at the present season, and its pretty effect when in full foliage, I wish readers of the *Gardeners' Chronicle* to become acquainted with its value in the garden. The height of specimens grown in this country is about 10 feet, although in forests in its native habitat it is said to attain to a height of 30 feet, with a trunk 8 inches in diameter. The plant in the Botanic Garden, Cambridge, measures 9 feet 6 inches in height, and has a nearly symmetrical head, 12 feet in diameter. Where the two leading branches spring from the bole, they have a circumference of 11 inches, and measuring at 12 inches from the ground. From information gathered as to the size of this tree when it was planted, it must now be thirty years old at the least. Loudon, in his *Arboretum et Fruticetum Britannicum*, writing of its rate of growth, says it "seldom produces shoots exceeding 5 or 6 inches in length." These figures are, of course, dependent upon climate, soil, position, and other minor influences. It is said not to flower until its fifteenth or twentieth year; here it has flowered for many years, and during the past five years it has not failed to flower. The flowers, which expand before the leaves are fully developed, are solitary, and borne on short peduncles on shoots of the previous year, drooping, and bell-shaped. The calyx is three-lobed, from whence it derives its specific name. The outer petals are considerably longer than the sepals, which when first opening are green, finally changing to a deep purple, recurving; the inner and smaller ones have a yellowish warty excrescence on their inner surface, from which a sweet juice exudes, of which ants are very fond. The flowers measure 2 inches across, and have a rather fœtid odour, as have the leaves and other parts of the plant. The leaves are oblong, cuneated, acuminated. The growth is somewhat close and twiggy. The berries are said to be large, yellow, ovate, oblong and eatable, containing a yellow pulp of a sweet luscious taste. It is called by the North Americans the Papau or Custard Apple. It grows on the banks of streams in the middle, southern, and western United States. The plant here grows in a sandy loamy soil, near to the bog garden, some few yards from the edge of the pond. In planting, care should be taken to avoid sites where it will be overhung by other trees. It may be propagated by autumn-layering, or from seeds sown in peat, sand, and loam, and kept in a cool pit, where also the young plants should be wintered until they acquire strength. *W. Harrow, Botanic Garden, Cambridge.*

Fabiana imbricata.

This South American plant, of Heath-like appearance, was named after Francisco Fabiano, a promoter of botany, makes a nice plant for the shrubbery, it flowering profusely each year when the treatment is of the right kind. We have it growing in the centre of a bed of low-growing hardy Heaths, the soil of which consists of peat and sand. Here the plant makes free growth, and produces its white, funnel-shaped flowers abundantly. The finest plant that I have seen is growing under a glass-roofed verandah, which doubtless assists the ripening of the wood.

Cuttings slipped off during September with a heel, strike freely when dibbled into sandy soil, in a cold frame, and kept close until a callus forms, and by the following April the now nicely-rooted plants may be planted out. The Fabiana should have plenty of water at the roots whilst growing.

Pernettya mucronata.

This low dense-growing evergreen shrub is just now smothered with its pure white drooping blossoms, which makes it a very attractive little shrub, the contrast between the flowers and the foliage being great. On the summit of a large rockery, or at the margin of a bed or clump of large American plants, or planted as a shield to more tender subjects, where these are wind swept, this species of Pernettya is a good subject to plant, as the wind does not injure, however strong it may blow. The growths are of a deep green colour, and in some soils peat is good for it, but not in all, as it is known to do well in clay in certain localities. The propagation of the plant is easily effected by means of the suckers which spring up freely about its base. *E. M.*

Spiræa Lindleyana.

A large clump of this stately Himalayan species is a fine object in the gardens at Wycombe Abbey, and it is just now throwing up in plenty its large drooping panicles of flowers. The stems are apt to die down, but others are produced from the roots, which send up strong shoots to take their places. It is sometimes recommended that the shoots should be cut back to within 2 feet or so of the ground in order to induce fresh growths. When at Wycombe Abbey, I remarked to Mr. Miles the freedom with which the plants were blooming, and he said that it was owing to his having now adopted the practice of cutting back the stems to just below where they blossomed, instead of much lower, as generally recommended. The result is, they branch freely, and blossom with remarkable abundance, and in this treatment it retains more of the arborescent form than the shrub-like character when the branches are more severely cut back. *R. D.*

THUNIAS.

It may be safely affirmed that no other group of Orchids of the same size surpasses in general usefulness the few species and varieties included under Thunia. If given proper care they flower abundantly and remain in beauty for a long time, whilst their foliage is as handsome as it is distinct amongst Orchids. Owing to the structural similarity of the flowers with those of Phaius, they have, by Bentham, been merged into that genus. So manifestly distinct are they, however, in other respects from Phaius proper, that, for garden purposes at least, it is much preferable to keep them separate, thereby following the late Professor Reichenbach. Their deciduous habit, terminal racemes and leafy stems, not to mention their cultural requirements, all markedly distinguish them from those Phaius of which P. grandiflorus is the best known example. Although some five or six forms are known under specific names, it is probable that they are no more than varieties of, or hybrids between, two reliable species: T. alba and T. Bensoniæ. In style of growth and foliage they are scarcely distinguishable from one another, having erect stems from 1 foot to 3 feet in height, tapering from the base upwards, and clothed with two opposite rows of pale green leaves, which are more or less glaucous beneath, and fall away in autumn. The short, drooping, sub-corymbose racemes are produced from the apices of the stems about the time they reach their full size. The sepals and petals are spreading, and arranged in a semicircle above the lip, the latter having the side lobes

rolled over the column and the middle one expanded. Except in colour, which is not approached by any of the Phaius, the general aspect of the flowers is similar to those of that genus.

My experience of the genus teaches me that T. alba in its typical form is not to be so strongly recommended as any of the others. Although decidedly handsome, it frequently fails to open its flowers to their full extent, owing to the stout, boat-shaped bract which encloses the base. They can, however, to some extent be liberated by pushing back or slitting the bract. The sepals and petals are white, broadly lance-shaped and pointed, the lip being also white, but prettily veined on the front lobe and on the disc with pale purple. It flowers in June and July, and is a native of Nepaul, where it is said to grow as an epiphyte.

T. alba var. Marshalliana—or, as it is perhaps better known, T. Marshalliana—is by far the most desirable of the Thunias available for general cultivation. Its pseudobulbs and leaves are like those of T. alba, but its flowers are much superior, and their diameter is sometimes more than 5 inches. All parts of the flower are of the purest white, excepting the beautifully frilled front lobe of the lip, which is of a rich yellow, and much veined with deep orange-red. As many as fifteen flowers will be found on one raceme. It was introduced from Moulmein in 1871.



Fig. 7.—Sharpless' seedling strawberry. (see p. 42.)

T. Bensoniæ is a beautiful species, with the habit of the preceding one, although it is scarcely so robust. The flowers are quite distinct; the pointed, narrowly oblong sepals and petals of a bright red-purple, paler towards the centre of the flower; the larger portion of the lip of the same colour, the base, however, being white, and the crest yellow. They are some 4 inches across, and from eight to a dozen (sometimes more) are produced on the raceme. The species show a considerable variety in shades of colour, some forms being darker than others. It blooms about July, and rivals any of the Orchids flowering even at that season. It is a native of Rangoon, and first flowered in this country in 1867 with Messrs. Veitch.

T. pulchra I have not had much experience with, but judging from plants which flowered at Kew about three years ago, it does not appear to be of any horticultural value. The flowers are creamy-white, and do not fully expand; they differ from those of T. alba (to which this is nearly allied) in the shape and brown markings of the lip.

T. Veitchiana× is a hybrid between T. Bensoniæ and T. Marshalliana; as might be expected from the offspring of such parents, it is of great beauty. Although in a measure intermediate between the two, it is more suggestive of T. Bensoniæ—the prevailing colour being purple of various shades. It was exhibited in good form at the Temple show of last summer.

The easy cultivation of these plants, and their capability of quickly recovering from the effects of wrong treatment, add greatly to their value. When the young growths pushing from the base of the last year's stems have grown about an inch, the plants should be repotted. In doing this, all the old soil should be shaken off, and only sufficient roots allowed to remain to fix them firmly in the new soil. The stems should be sorted according to size, and the largest planted three or four together in 8-inch pots, or, if preferred, singly in 6-inch pots, the smaller ones, of course requiring proportionately less root room. When several are potted together, the young growths should face outwards, and a stake be placed in the middle, to which the tops of all the stems may be tied. The compost I have found the most suitable for the robust T. alba and T. Marshalliana is a mixture of equal parts of loam and peat fibre, to which is added chopped sphagnum moss and silver sand in small proportion. For T. Bensoniæ and weaker samples of the others a greater proportion of peat is required. It is the practice of some cultivators to entirely dispense with loam in the compost, but after making use of it for several years, and always finding the pots crammed with roots, I have not been able to detect any disadvantage in its use. Care should be taken, however, by shaking and sifting, to remove the greater portion of the earthy particles. Although gross feeding plants, they dislike a close or heavy compost. After potting, the plants should have a moist position in an intermediate-house, and no water afforded them until the roots have pushed into the new soil, as the old pseudobulb furnishes an adequate supply of moisture in the early stages of growth, and it is most important not to apply water at that time. Afterwards the supply may be gradually increased until, in full growth, it should be given unstintedly; manure-water may also be given once a week. In autumn, when the leaves begin to show signs of decay, the amount of moisture must be gradually reduced until the foliage has fallen, and for a few months none at all is required. It is at this time, however, that they are often most neglected; they require a light, dry position in a cool house; in most gardens a shelf in a vinery at rest might be used. Next to the strength and health of the plants, the main factor in the production of abundance of flowers, is the careful ripening and resting of the old pseudobulbs.

W. B.

STRAWBERRIES FOR MARKET.*

This crop is most extensively grown for market in the county of Kent, and I propose in the first place to give a *résumé* of the usual way they are cultivated there, and then to detail the varieties. Soil and situation will come first.

The best soil is a deep, stiff loam, rather inclined to clay than a lighter sandy mixture, and by preference such as does not feel the summer drought to a great degree, but avoiding the chalky uplands and the sandy drifts. Strawberries seem to flourish on all other soils provided deep and clean culture is carried out, and a heavy manuring is applied before the plants are put in. I have seen them grand in

* A paper read by Mr. G. Bunyard at the British Fruit Growers' Association, Royal Aquarium, June 27.

cool clay bottoms, and in the higher flinty and pebbly soils which are common in the Crays district near Swanley.

Situation is unimportant; all that is requisite is an open space free from trees, and the larger the field the better, the aim being to reduce manual by substituting horse-labour in hoeing, and such open fields are more readily kept clean than where they are bounded by woods, and intersected with hedges.

It is important to have the land thoroughly clean at first; and, in order to do this, a crop, such as Potatos, Cauliflowers, Peas, or Beans, may be taken the previous years, when the ground can be kept quite free from weeds, and be frequently stirred and laid up for the action of sun, wind, and frost, to purify and mellow it.

Preparation of the Soil.—This must be deeply cultivated; large fields may be ploughed by steam, and, if both ways, so much the better. In smaller ones the land may be deeply dug or trenched, being previously manured with 35 to 50 tons of manure per acre, and harrowed down two or three ways about a fortnight before planting. The cost of manure, carting, spreading, ploughing, coal, &c., will be about £15 to £20 per acre, or if dug, £25 to £30.

Planting.—This is generally done in March, when all danger from the runners being lifted by frost is passed, and the plants are about making their rootlets, when they strike at once, and soon develop fine healthy foliage; an ingenious marker with spokes on a wheel, which strike the land at regular distances, is used, and the planters then follow with the dibble, and plant by the acre. The distance preferred in Kent is 32 inches between the rows, the plants being 16 inches apart. Care must be taken that the crowns are not buried beneath the soil, and they should be set as firmly as possible.

Summer Cultivation.—The first year consists in removing the runners about four times with a sharp knife, horse-hoeing to keep down the weeds, and hand-hoeing between the plants.

Autumn Cultivation is completed by earthing-up the plants with a mould board plough to protect the foliage, and to allow the water to drain away from the crowns, the plough is set as shallow as possible.

Cultivation in Spring.—The field will require horse-hoeing to level down the plough ridges in March or April when the land is dry, and after a hand-hoeing when the plants are in bloom; the fields are littered with Barley-straw, requiring about 2½ to 3 loads per acre (about 1½ ton) preparatory to picking.

Cultivation First Year of Cropping. As soon as the crop is cleaned the straw is raked off, the runners and old dead foliage having been removed by a bagging-hook; the horse-hoe is used again, and every encouragment given to the plants to develop foliage and make plump crowns for the second season's crop, which is generally the best. The straw is used in the cattle yards, and thus pays for cost of removal.

Expenses per Acre.—Estimated roughly the cost per acre up to the time of picking may be set at nearly £50 per acre—*i.e.*, £25 per year first and second years per acre; the expenses for the rest of the series of years the crop is on the land being very much less. If five years, an average of £15 to £20 per acre.

Duration of Crop.—About five years is considered the utmost that a profitable crop can be expected, as when the fruit becomes small the market value will not be remunerative.

Average Yield.—Two tons per acre is considered a fair yield, much more is occasionally taken, and rarely less.

Price.—This varies year by year according to the weather, a dry warm time stimulating the consumption, from £16 to £28 per ton will be a fair average. The cost of picking and packing is about 4*d.* to 6*d.* for 12 lb., this is done by women, boys, and girls, and they are paid by the dozen or gross in punnets, and by the peck later in the season, this is included in the expenses quoted per acre.

The usual plan is to place a shed at a convenient spot for the vans to load and for the pickers to assemble, and as each set of punnets or peck basket is brought in, a tin tally is given to the picker, which is turned into cash as required. Some large growers dress the Strawberry land three times a year, using soot or artificial manure, and an autumn and spring dose of farm-yard dung. After the third year a mulching of manure, about 15 to 20 tons per acre, must be placed round the plants to assist them, and this might be annually repeated, as the Strawberry lands are so well cared for that one or two crops can be taken after they are ploughed up without extra manure.

The uses of Strawberries are well known. As a dessert fruit they take the first place, and as a preserve are very rich. The custom is to send all the earlier pickings for table use in punnets, and to "plum" the rest for the jam makers when they are stripped off the stalks. As regards the consumption, it increases year by year in a remarkable degree, and when the price gets low they are eagerly purchased by the working classes. In 1888 the crop was very large, and one retailer in Maidstone sold 1200 lb. over the counter on a Saturday, though formerly you could scarcely buy a basket in the town at all; truly the luxuries of one generation become the necessities of the next.

It may be asked as to the profits of Strawberry growing. The growers are naturally reticent at giving these particulars, but I gather from various sources that from £20 to £40 per acre may be expected where the plantations are well done and cared for, and put on the market in good condition. None but the best make top prices, and care to the little details of culture will reap an adequate reward, and at times an exceptional profit. My notes give 6000 pecks of 12 lb. each as the largest picking at the Crays on one farm alone; while another grower is said to have 2000 acres, and picked 360 tons in one week.

As Strawberries are very perishable, the plantations should be near a railway to avoid as far as possible the bruising in transit. In the great Strawberry districts, picking commences as soon as daylight allows, and the earliest pickings go in special vans for Manchester, Birmingham, and the large centres of consumption, later pickings being in time for the London markets. Growers in other parts deliver to the towns daily in spring vans. This enables to put them in the market in a fresh condition. The bottom of the van should have 1 foot of straw in it to prevent jolting, and a neat light cover should be placed over them to exclude the sun and dust.

As regards sorts, in market work only those that carry well can be largely grown, and in this respect none approach Sir Joseph Paxton, its fine rich colour, firm flesh, and glossy skin make it attractive in appearance. It is as hardy as any kind, and most productive. For an earlier crop, Alice Maud or Vicomtesse de Thury are used in some grounds, and Sir Charles Napier for a main crop, while Elton Pine and Eleanor are favoured for a late crop. Laxton's Noble will be very much grown in a few years, its large size and freedom of crop and vigorous growth are what the growers desire. We picked fruit nearly an ounce in weight on June 13, and no other kind can compare with it for earliness and bountiful crop. This is the early market Strawberry of the future.

The practice in other counties is slightly different; for example, in Scotland, where they are extensively grown about Aberdeen, the small early kinds, Black Prince and King of Earlies, furnish the first gatherings, and Eliza, President, and British Queen are grown, and as the rainfall there is considerable, the beds will last in good order as long as eight years.

British Queen is well grown near Sandwich, where the cool, deep, and rather heavy loam, suits them; but, as a rule, this variety is not a paying crop, as it bears sparsely, and the beds must be renewed every other year.

For preserving, Mr. Beach, the contractor for Lord Sudeley's extensive fruit farms in Gloucestershire, prefers the old Carolina Pine to any other for jam purposes; the colour is bright, and it makes a delicious whole-fruit preserve. In the same district, Sir Charles Napier, Stirling Castle Pine, are preferred with Paxton for punnet sale.

In the Cornish system, the plant is only 20 by 14 inches for small growing kinds, and 20 by 16 for others. Here again by deep cultivation and heavy manuring, beds are sometimes retained as long as fifteen years. Possibly the rainfall keeps the plants in health and vigour, while the proximity to the sea may be advantageous. One farmer there picks an average of 2 tons per day, and as all are marketed with baskets, this represents an enormous picking.

In conclusion I would venture to suggest a trial of more varieties, such as James Veitch for earlies, and Waterloo, Laxton's Jubilee, and Aberdeen Late for late sorts. Waterloo is of very dark colour (quite a Mulberry), but its fine appearance would in time command a sale. A grower says it sells for double the price of others at the same season. Jubilee is an enormous cropper. A plot of land should be set aside, and two or three new or fresh varieties tried every year, as both early and late Strawberries are much appreciated.

Other promising varieties are Laxton's Latest of All, a grand berry of the richest flavour; Prince Teck, an improved Paxton; and Aromatic, a finely-coloured midseason fruit. The American varieties have not yet been of much service, or equal to existing sorts.

For preserving, enormous crops are produced by Newton Seedling, a very strong grower. John Powell (Kitley's Goliath) and the old Elton Pine are also useful for this purpose. Crescent Seedling, from America, is the earliest, and the fruit could probably be gathered at two pickings, as it produces a very large crop of small berries, and will prove invaluable for jam to start the factory. King of the Earlies would also make a fine whole-fruit jam, and is very productive. I am of opinion that, as far as culture is concerned, we have reached the best possible; and the only thing I object to in our Kent field system, is the late hoeing which is often given.

If the land is thoroughly cleaned and pulverised, by the time the flower trusses show, and before they open, it would be preferable to finish hoeing at this stage, and not delay the work until the flower is out; but the weather is a factor in all operations, and is often wet when such work would otherwise be done. The object of the final hoeing is to destroy seed weeds, and to prevent evaporation. Great care is exercised in laying on the straw or the annual mulching; in May the dung is sometimes carried on by rough hand-barrows, to prevent the closing of the soil, as happens when wheelbarrows are used. If short stuff is at hand, baskets and bodges are used. To sum up the culture in a few words—deep cultivation, heavy manuring, clean culture, and care in sorting the fruit, appear to be essentials.

We appear to have reached the best market Strawberry in Sir J. Paxton, but those who have time and patience should try hybridisation, taking this as one parent. In Prince Teck we have a reputed advance on this old favourite, and earlier and later Strawberries that have the same characters as Paxton would be valuable additions to market varieties. At this date (June 27) several promising varieties are under trial, but must be proved before we can admit them in a list of market kinds.

The Orchid Houses.

The East India-House.—In dull or rainy weather the moisture inside this house should be moderated, otherwise spotting of the leaves will be likely to appear. Cœlogyne Massangeana, now again in flower, is a most useful species, flowering usually twice in the year from the same leads, if the plant be well done. Miltonia Morelliana and its varieties are now coming into flower, and the plants prosper in this house. I used to consider them very shy bloomers, and "miffy" in growth, until on going

round a London nursery I saw them growing in great heat, and remarked their robust appearance. I have since that time experienced no difficulty with them. Paphinia grandis and P. Sanderiana are two beautiful Orchids, with flowers extraordinarily large, compared with the size of the plants. They grow freely in baskets if planted in a compost of sphagnum moss and fibrous peat, and hung up near to the roof glass, where they get a moderate amount of light without ever getting the full rays of the sun; they are now in flower. Cypripediums of the Stonei section, growing fast, will be benefited by having weak liquid manure afforded them occasionally; guano is a safe manure if given in small quantities.

The earliest plants of Cattleya aurea and C. Dowiana are now throwing up flower-spikes from the sheaths, and the watering-pot must be cautiously used at this stage. If the plants are strong, the main rooting season for these plants is after flowering. The plants of C. Sanderiana and C. gigas which flowered the earliest, if requiring repotting or rebasketing, should be attended to at once, the plants being taken back to the Cattleya-house, and placed in a position to receive full sunlight, so as to thoroughly ripen the last made pseudobulbs. Under this kind of treatment, the plants will root freely into the new peat and sphagnum, amongst which it is good practice to mix a few potsherds. The temperature of the East India-house should be kept up to that given in the last Calendar, but it must be borne in mind that air should be always passing through the house. *A. G. Catt, Parkfield, Hallow.*

THE FLOWER GARDEN.

BEDDING PLANTS.—The showery weather has conduced to the growing away of most subjects without the aid of the watering can, and the beds will stand in need of having the soil stirred. Thinning, stopping, and pegging down plants should be regularly and frequently performed, especially such trailers as Ivy-leaved Pelargoniums and Verbenas. Heliotropes, Gazanias, Phlox Drummondi, Petunias, &c., will also require some little attention in this way, until such time as they cover the ground.

Carpet Bedding.—The various species and varieties of plants used for this purpose will now be making rapid growth, and as neatness, and regularity of outline are essentials in making this kind of bedding pleasing, strict attention must be given to the pinching off of the flowers, stopping the shoots, pegging down of side branches, and the shearing of those plants which encroach on their neighbours or deviate from the lines of the design.

Pyrethrums should have their flower-buds picked off on their first appearance, also their foliage plucked, to keep to the perfect line of the design, as this plant is often used in this kind of bedding for dividing lines. Alternanthera should be kept pegged down, and the growths kept pinched to a uniform height. The flowers of Echeverias are generally kept pinched off also; their straggling habit spoiling the effect of a design if allowed togrow. Groundwork plants of Sedums, Mentha, &c., should be thinned out, and cut with the hand-shears into line, in order to secure even surfaces and edges.

Roses.—These should be cleared every morning, when in conspicuous places, of faded flowers, and the shoots after flowering should be pruned back, in order to secure some blooms in the early autumn.

The budding of Roses should be commenced as soon as possible after the shoots have matured sufficiently, and the bark will "run." Briers budded at an early date will often produce strong shoots the same season. Many gardeners prefer later budding, so that the buds may remain dormant during the winter, and these often produce heads equally good as those budded earlier.

Shrubs.—The young growths of common shrubs are now easily cut with a reaping-hook, and this is a good tool to use where there is a great quantity to be cut, a man getting over a large quantity of work in a short time. The sides of walks, avenues, and drives, and clumps that are intended to be kept low, should at the present time, while the growths are young and tender, be trimmed in this manner. Ivy on walls that was not sheared in the spring, and have made straggling growths, should now be shorn back slightly, otherwise there is danger of the Ivy being forced away from the wall by wind.

Lawns should be mown regularly every week, and the edgings of walks and flower-beds clipped, so that, in conjunction with the directions for keeping the flower-beds already given, all will be done that is possible to attain good keeping for the next few months. *D. C. Powell, Powderham Castle, Devon.*

FRUITS UNDER GLASS.

CUCUMBERS.—If exhaustion, in the form of short crooked fruit, shows itself, the plants should have much of the old bine removed, and a considerable amount of young shoots laid in, and a short rest be given, which will soon enable them to recover strength if the plants be free from red-spider or other insects. Top-dress the surface of the beds as often as the roots show through it, and water liberally with liquid manure, damping the floors at closing time with dung-water, and using the syringe freely. Let there be no overcropping or crowding of shoots. Use gentle fire-heat in damp cloudy weather, to promote a gentle circulation of the air, and so avoid the Cucumber disease. Sow seeds to supply plants for autumn and early winter, but be careful to grow the plants stocky, and with firm shoots and stems. The true Rollison's Telegraph is a trustworthy variety for winter or summer alike.

Tomatos, fruits of which are now plentiful, should be afforded liquid manure if they have borne heavily. Continue the gradual removal of laterals, growing the plants on the cordon principle, this giving the most satisfactory results. Heavier crops are produced by stopping each lateral at the joint above the first flower, but overcrowding of fruits or shoots must be guarded against. As a rule, the smooth varieties of the Perfection type do not set so freely as some others—notably the Old Red. If 1 oz. of Calvert's carbolic soft-soap (10 per cent. guaranteed) be put into 1 gallon of water, it furnishes an effectual cure for the white-fly which infests Tomatos, but several syringings are necessary at intervals of three days, so as to destroy the late-hatched insects. Let the atmosphere be buoyant at all times, or the plants will become diseased, especially such as have luxuriant growth. Fresh manure or very rich soil favours the disease, and produces the worst-flavoured fruits.

Strawberries.—Next season's supplies of forced Strawberries will depend upon the proper preparation of the plants at this season. I like all my Strawberry plants to be in their fruiting-pots before the end of July, and I begin with the earliest kinds. La Grosse Sucrée has all the good properties of a first early forcer, a good constitution, large leathery leaves that are seldom attacked by red-spider, setting well in a high temperature, and swelling off of a good size, and it is a handsome-looking fruit of fair flavour. Pots of 5 inches diameter are best for very early forcing, 6-inch ones for mid-season and late kinds; pots larger than this are unnecessary. It is the best plan to set apart a piece of land, and plant it thinly in August with selected plants for the production of runners, as those taken from a crowded bed seldom produce the highest class of fruit. Layer the runner as soon as it is fit direct into the fruiting-pot, and stop it at the first joint, unless the stock of it is scarce, when a second one may be taken, and secure the runner in position. The best soil is turf cut from an old pasture or park, pared off about two inches thick, and stacked for six months. It should be chopped up with a spade, giving half a peck of bone-meal crushed fine, and a similar quantity of soot to each barrowful, adding according to the retentive character of the loam (when the fibre has decayed), a suitable quantity of coarse gritty sand, or old, finely-sifted mortar rubbish, sufficient to keep the soil open and porous. The soil should be well rammed into the pots. Those who have not this kind of soil will find a good substitute for it in roadside parings and scrapings; but manures from animals should be avoided in pot culture. The handsome Noble does not commend itself for flavour when forced, but its proper place is a warm border outside, where the flavour is fairly good. For a rich-flavoured Strawberry, British Queen still holds the palm. Waterloo appears to be the latest variety, it has very dark crimson pulp of good flavour and it is large; we are preparing many pots of it. Latest of All is good outside.

Vines.—The scalding of Lady Downes' berries appears to have been this season unusually prevalent whilst the berries were stoning, and was due to the variableness of the weather, and the extremes of temperature reached. The best remedy is, as I have proved again and again, to keep up a gentle warmth in the pipes day and night, never to quite close the house, and increasing the amount of air in the early morning, before the sun reaches it during the few days previous to colouring, a time when this danger threatens.

A slight extension of laterals may be allowed, as root action is thereby better kept up, but not so as to allow the new growth to crowd the old leaves. If the mulching is become impoverished, a little fresh material may be added. Examine closely for red spider, and if any slightly yellow patches of foliage appear, well wash these with clean water, by means of the syringe, using some degree of force in doing it. A few applications will prevent it spreading further. If mealy-bug be present, touch them with a camel-hair pencil dipped in petroleum. This will not harm the Vines in active growth, but it must not be used on Vines in a dormant state. It is not too late to plant Vines, and these will have advantages over those planted next spring. *W. Crump, Madresfield Court, Malvern.*

THE KITCHEN GARDEN.

DWARF KIDNEY BEANS.—From plants raised from seeds sown in the middle of the month of April, beans are usually obtainable by the first or second week in July, and at which date the final main crop should be sown, for, unless we get a very fine autumn, it is almost useless to sow later than that date. By the end of the present month more seed may be sown in frames or pits, where they can be protected on cold nights, and pushed along with artificial heat, if required. Osborn's Dwarf, and Ne plus Ultra are good varieties for this purpose, and whether sown in frames or outside, they should not be crowded. The soil should be deeply dug, and enriched with decayed manure, and be well sheltered on the north side. Sow in drills, 2 to 3 feet apart, and 10 inches from bean to bean. As fast as the early crops become fit to gather, the useable pods should be picked every other day, so as to keep the plants in bearing as long as possible. Earth-up succession crops, and ply the hoe freely between the rows.

Parsley.—Where the demand for Parsley is great, a sowing should be at once made on a border, and in such a way that frames may be placed over the plants in winter; some of the plants being also lifted later on from the spring sowing, and planted 6 to 8 inches apart, on a sunny border where frame or handlight protection may be afforded them.

Tomatos.—These should be secured to strong stakes, or to the wall with shreds and nails, and all side shoots pinched clean out, which will prevent overcrowding of the leaves; the tips of the shoots may be cut off sparingly. To get good crops of fruit, the plants must, from the first, be kept neatly trained, allowing the leaders to run till a sufficient number of bunches of fruit have formed, and which will ripen by the end of the season; after this has been done, the points may be pinched out. Mulch the ground over the roots with manure; and attend well to those in pots, supplying abundance of water in hot weather, and occasionally manure.

Spinach.—A large breadth for autumn use should now be sown on the ground which has been under early Potatos, &c., and if poor, it should have a coat of manure. If the strong-growing Viroflay Spinach be sown, the drills must be 20 inches apart, and the plants may stand at 10 inches apart. Less vigorous varieties need not be sown so wide.

Plant out Savoys, Cabbages, Chou de Burghley, Kales, &c.; also Walcheren and Autumn Giant Cauliflowers may be planted. I would just add a word of praise for Gilbert's Universal Savoy; it is a capital variety, mild in flavour, and solid.

Herbs should be cut in sufficient quantity for drying, and laid out thinly on paper or boards in an empty frame or house, and afterwards bunched and hung up in any airy shed for use. *H. Markham, Mereworth Castle, Maidstone.*

EDELWEISS.—Mr. BURBIDGE sends us, from the College Garden, Dublin, a nice bunch of this sentimental plant. Mr. BURBIDGE tells us that he grows it from seed every year, and then plants it in sandy earth and old lime rubbish. In rich soil it forms too many leaves, and its bracts become sage-green rather than downy.

EDITORIAL NOTICES.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

NEWSPAPERS. — *Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY,	JULY 15	Wolverhampton Horticultural Society (three days).
THURSDAY,	JULY 17	Bedford and Bedfordshire Horticultural Society. National Rose Society, at Birmingham. Helensburgh. Hammersmith.
SATURDAY,	JULY 19	Manchester Royal Botanical Society.

SALES.

TUESDAY,	JULY 15	Final portion of the Studley House Orchids, at Protheroe & Morris' Rooms.
THURSDAY,	JULY 17	Plants, at Powlet Lodge, Twickenham, by Protheroe & Morris. Orchids, in Flower and Bud, at Stevens' Rooms.
FRIDAY,	JULY 18	Imported and Established Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°.4.

Trade Legislation.

QUITE recently, two measures which affect the interest of nurserymen and market gardeners, have been under the consideration of the House of Commons.

By the Public Health Act, 1875, sec. 211, it is provided that the occupier of any land used as arable, meadow, or pasture ground only, or, as woodlands, market gardens, or nursery grounds, shall be assessed to the general district rate in an urban district, or to a separate rate levied in respect of special expenses within the meaning of that Act in a rural district, in the proportion of one-fourth part only of the net annual value or rateable value of such land. This Act has received a judicial construction in favour of nurserymen and market gardeners, but it has always been a question of considerable doubt as to whether orchards are comprised within the scope of the Act. The impetus which has lately been given to fruit-growing has caused the matter to be one of importance to those who have embarked, or who contemplate embarking, in that branch of industry. The Bill now before Parliament seeks to remove such doubt, and provides that from and after October 1 next the section above referred to shall read and be construed as if the word "orchards" were inserted after the word "woodlands."

If the Bill passes, it will be a distinct gain to fruit growers—that is, if they take advantage of it. We say this advisedly, because we understand that the exemption already enjoyed by nurserymen in this direction is not taken advantage of to anything like the extent that it might be. Notwithstanding the decision of the Court of Appeal, we believe that nurserymen and market gardeners are still rated to the full amount in respect of local rates, and that it is quite the exception if they are rated only in the proportion of one-fourth part of the net annual value or rateable valuable of the land held by them. And why is this? Here is Parliament saying, "We recognise the unfairness of charging you full rates, and we accordingly enact that you shall be entitled to deduct three-fourths from your assessment before being rated for your local rates." Says the nurseryman, "Thank you, very much. I appreciate your kind consideration; and have no doubt the Assessment Committee will respect your enactment." But does it do so? Says the Assessment Committee to the nurseryman: "Shut your eyes, open your purse, and pay whatever you're asked to." Replies the confiding nurserymen: "You are a body duly appointed by law to carry out its directions—therefore, whatever you say, must be right; at all event, I have no time to inquire into the matter, and the law is too complicated for me, so whatever you say I must do—I must." And he does; and the Assessment Committee chuckles, and rubs its hands, and says, "What a grand thing it is to have to do with men who don't understand their rights."

We may perhaps be inclined to admire the simple trustfulness of the nurserymen in the matter, and if there were no one to look after and protect his interests, we might be inclined to excuse his natural temerity in opposing so august a body as an Assessment Committee: but there are those who can and will assist him to enforce his rights, if he will but place them in a position to do so. We gather from the last report of the Nursery and Seed Trade Association, that in all cases which have been taken up by the Association, reductions have been obtained in the amounts of local rates hitherto paid. Here, then, is an organization at hand for the express purpose of seeing that the Assessment Committee does not outreach the law. *Quis custodiet ipsos custodes?* That may be very pertinent, but when an Assessment Committee is appointed for the purpose of carrying out the rating laws, and watching the interests of those whom the law says are to be protected, and they fail to do so, it is advisable that others should watch their acts and set them right when they go wrong. To their credit, however, be it said, that they are very easily led into the right path. When the illegality of the rate is pointed out, says the committee, "How strange we have not noticed it before. We will see at once that the mistake is set right," and so it is.

We repeat, therefore, that the Bill, if passed, will be a gain to fruit growers if they take advantage of it.

The other Bill referred to is the Hares' Preservation Bill. At first sight, perhaps, it may not appear that there is much connection between this and the trade, but when we say that it seeks to impose a penalty for killing or attempting to kill hares between March 15 and July 1, and that at this period of the year the nurserymen's and market gardeners' outdoor stock is of great value, it will be seen that the proviso in the Bill that it shall not apply in cases where the hare has been killed, wounded, or taken inside a nursery or other garden, is another protection extended to the trade. Thus it will be seen that the interests of the trade are being protected by the highest authority in the land, and the trade will have to thank themselves only if they stand in their own light, and refuse to take advantage of such protection.

LILIES.—Captain ELWES' address on these beautiful plants at the meeting of the Royal Horticultural Society, on Tuesday last, was bright and crisp. No one so competent as he could be found to address the Society on such a subject, as he is not only a cultivator, but has seen and studied most of the species in their native haunts. His *Monograph*, published some ten years ago, is simply invaluable, and, as it turns out, little that is new has to be added to it. Captain ELWES, with unnecessary modesty, disclaimed pretensions as a botanist; but what greater claims can be advanced than the compilation and publication of such a monograph as his?—dealing, as it does, not with dried specimens only, but with the life-history and habits of these beautiful plants. What better evidence can be found in support of the proposition that scientific knowledge, as distinguished from mere empiricism, lies at the root of all progressive horticulture? The very first species mentioned by Captain ELWES was the superb L. giganteum (fig. 8), which he stated to be so amenable to culture, that it is almost wild in the plantations of Lord WALSINGHAM and others. One of the most interesting points touched on was the question of hybridisation. It is certainly curious that hybrid forms are rare in this genus, but with the very beautiful L. Parkmanni× in evidence, it is surely clear that a promising field is open to the experimenter. Only in our last number we had occasion to mention an interesting, and by no means unattractive, hybrid raised by Mr. POWELL, between the dark variety of L. Martagon, known as L. dalmaticum, and the Californian L. Hansoni. In connection with hybridisation, Captain ELWES remarked, that although, in general, hybrids possess extraordinary vigour of constitution, yet among Lilies there seemed to be an exception, L. testaceum, a supposed hybrid between L. chalcedonicum and L. candidum being an exception. A hybrid was also shown by Mr. WARE between L. pardalinum and L. Parryi. Correct nomenclature was a point insisted on by Captain ELWES, and assuredly no more potent means of securing it can be imagined than such a carefully drawn up and splendidly illustrated monograph as his own. The reckless formation of vernacular names, as he says, only doubles the difficulty; indeed, we may add, considering the cosmopolitan nature of botany and horticulture, more than doubles it. This statement, however, by no means deprecates the employment of such well-known names as the Turk's Cap, the Tiger Lily, the white Lily, and a few other names which no one would wish to suppress, were it possible to do so. Lilium Bolanderi, shown by Mr. WARE, was almost the only new form shown; it is allied to L. maritimum, but has different leaves, and the flowers are of a deep purple colour. L. Grayi was mentioned, but this species is not at present in cultivation. It is allied to L. superbum, but differs in both flower and leaf. The dark-coloured form of L. Martagon, known as L. dalmaticum, was stated to revert to Martagon in Mr. ELWES' garden. We refrain from further notes on Captain ELWES' discourse, and especially on the cultural details recommended, as no doubt in due course they will find a place in the Society's *Journal*.

ROYAL HORTICULTURAL SOCIETY.—There will be a Conference and great Exhibition of Carnations and Ferns in the Society's gardens at Chiswick on July 22 and 23. The National Carnation Society offers several prizes for Carnations and Picotees, and two Silver Challenge Cups will be awarded to amateurs by the Royal Horticultural Society, one for the best collection of hardy Ferns, the other for the best collection of Filmy Ferns grown without heat. The Conference on Carnations will begin at 2.30 P.M. on the 22nd inst., and the following papers will be read viz.:—"The Carnation, from a Botanical Point of View," by Mr. F. N. WILLIAMS, F.L.S.; "The Florists' Carnation and Picotee as Exhibition Flowers," by Mr. HARRY TURNER, F.R.H.S.; "Carnations and Picotees in Towns," by Mr. MARTIN ROWAN; "Border Carnations," by Mr. RICHARD



Fig. 8.—Lilium giganteum. (see p. 46)

Dean, F.R.H.S. On the 23rd, the Fern Conference will open at 2 p.m., and papers will be read as follows:—"The Systematic Relations of Ferns," by Professor Bower, F.L.S.; "The Cultivation of Exotic Ferns," by Mr. W. H. Gower; "Hybrid Ferns," by Mr. E. J. Lowe, F.R.S.; "Plumose British Ferns," by Mr. C. T. Druery, F.L.S., F.R.H.S.; "Hardy Ferns and their Cultivation," by Mr. J. Birkenhead, F.R.H.S. Intending exhibitors are requested to communicate with Mr. Barron, Superintendent, Royal Horticultural Society's Gardens, Chiswick, on or before Friday, July 18, stating the classes in which they propose exhibiting, and giving an approximate idea of the amount of space they will require.

The Linnean.—A meeting of this Society was held on June 19, Prof. Charles Stewart, President, in the chair. Messrs. W. H. Beeby and Mr. H. E. Milner were admitted, and Messrs. W. Cross and S. Schonland were elected Fellows of the Society. Mr. W. H. Beeby exhibited a specimen of Rumex propinquus, new to Britain, and procured in Shetland. Mr. Thomas Christy exhibited, and made remarks upon a specimen of Callistemon rigidum. Mr. E. M. Holmes exhibited some marine Algæ new to Britain, including Ascocyclus reptans, Halothrix lumbricalis, Harveyella mirabilis, Sorocarpus uvæformis, and Vaucheria litorea; also specimens of Rhodymenia palmata with antheridia, and Punctaria tenuissima in fructification; the last two not having been previously recorded to occur in this state in Great Britain. The following papers were then read:—"Observations on the Protection of Buds in the Tropics," by M. C. Potter; "On the Distribution of the South American Bell-birds belonging to the genus Chasmarhynchus," by J. E. Hartney; "On the Vertical Distribution of Plants in the Caucasus," by Dr. Gustav Radde; and "Notes on the Forficulistæ, with descriptions of new genera and species," by W. F. Kirby. This meeting terminated the session of 1889-90.

Manual of Orchidaceous Plants.—The sixth part of Messrs. Veitch's *Manual* has been published. It is devoted to the description, and frequently the illustration of Cœlogyne, Epidendrum, Thunia, Calanthe, and other genera. This is no mere example of book-making for a special purpose, but a genuine authentic work of high merit, embodying the results of original observation and research. While thus botanically a standard work, it is equally or more important to the cultivator, as detailing the experience of these renowned growers. Descriptions of the various hybrids and their source are also given. We shall take another opportunity of alluding to it.

"Conspectus Floræ Europæ."—Mr. Nyman, of Stockholm, has recently published a second supplement to his useful Conspectus. It is devoted to additions, to corrections of, and commentaries upon, the text of the main volume. It is, of course, indispensable to the botanist and botanical gardener. The type is small, but very clear.

Mr. J. Alford.—It may interest some of our readers to know that the above gardener, who for nearly seven years held the post of head gardener to Bluett Stanford, Esq., Pyt House, Tisbury, is emigrating to Australia.

An Orchid Society.—The establishment of a special society to deal with Orchids has often been proposed, and is now again talked of because the Council of the Royal Horticultural Society and the Orchid Committee entertain different opinions about a matter of little horticultural significance. We do not think such a society is really wanted, and we believe that more would be lost than gained, especially in dignity and repute, by dissociating from the Royal Horticultural Society. In all such cases we believe in Imperialism, combined with Home Rule for the special committees. Any question of prize-winning could be easily arranged by means of special subscriptions administered by special committees. Anything like disloyalty to the Society under existing circumstances would be worse than a blunder.

Hybrid Lily.—We have received flowers of a Lily raised by Mr. C. B. Powell, of Southborough, out of L. Martagon var. dalmaticum by the pollen of L. Hansoni. The plant is, we learn, intermediate in character. In form, the flowers are like those of the female parent, but slightly larger, whilst the colour of the recurved perianth segments is curiously intermediate between that of the parents, being of a peculiar rich yellowish or golden-brown, with purplish dots at the base, whilst the under surface of the segments is glabrous, flushed with purple, and marked with a broad central furrow. The stamens are purplish, about half the length of the segments. The ovary is Pear-shaped, green, with six rather deeply-winged angles; the style is deflexed, and of the same length as the stamens.

The Late Mr. George Deal.—The funeral of this gentleman took place at Woking on Saturday last, but a short service was held previously in St. Peter's Church, Ealing, near Mr. Deal's residence, and where, in spite of the early hour and the stormy weather, a large number of friends and associates gathered together to pay their last tribute of respect to their lamented friend. The church, a temporary structure, shortly to be replaced by a handsome edifice, in the prospects of which Mr. Deal took great interest, was redolent with the fragrance of the flowers sent by loving friends. The Vicar of Christ Church gave a short address. In addition to Mr. Deal's relatives and business associates, several horticulturists were present, the Gardener's Orphan Fund being represented by Mr. Harry Veitch and Dr. Masters, Vice-Presidents, and by Mr. Barron, the Secretary. Mr. Deal's services to the Fund should always be held in grateful recognition. We suggest that the best way of perpetuating his memory in this connection, and the way which would in all probability have been most consonant with his feelings, could they have been ascertained, would be to raise a sum sufficient to place one or more orphans on the Fund. We should be happy to co-operate in this good work.

Nepenthes cincta.—We have received from Messrs. Veitch a pitcher of this species of larger size and deeper colour than any we have before seen. The pitcher is 10 inches long, of a purplish tint, but mottled and blotched with longitudinal streaks of a deep purple colour. The mouth of the pitcher is very oblique, so that the inner surface is exposed for a considerable distance, and is pale glaucous-green with purplish blotches. The revolute rim is finely striated, and beneath it, and concealed by it, is the ring of fawn-coloured hairs, to which the species owes its name. The species was originally described and figured in our columns (p. 576, vol. xxi.) 1884; but, as often happens under cultivation, the plant turns out to be a finer thing than was at first suspected.

A Sporting Pink.—A correspondent sends us two flowers of a Pink forming part of one and the same inflorescence. In one flower the petals are white with a deep violet spot at the junction of the claw and the blade, and with an intramarginal band or lacing of the same colour. In the companion flower the petals are of a clear white, except at the junction of the claw with the blade, where there is a deep reddish-violet spot. It is really very reprehensible for a Pink to depart from the standard of properties, but some folk, it must be admitted, find it all the more interesting in consequence.

A New (?) Japanese Lily.—In the last number of the *Journal of the Japanese Horticultural Society*, is a coloured figure of a dwarf white Lily. On referring it to Mr. Baker, he has stated his opinion that it is one of the many forms of Lilium elegans of Thunberg. It is of special interest botanically, as throwing light upon Thunberg's Lilium lancifolium. The plant formerly called in gardens as lancifolium is more properly designated L. speciosum, Thunberg, and the true L. lancifolium of Thunberg is something of an enigma. Certainly the description given by Mr. Baker at vol. xiv., p. 251 of the *Journal of the Linnean Society* (1873), accords very closely with the Japanese figure above mentioned.

Williams Memorial.—We understand that a committee is being formed, in order to take steps to perpetuate the memory of this distinguished horticulturist. Such a movement will command general sympathy. Communications on the subject may be addressed to Mr. Alfred Outram, 7, Moore Park Road, Fulham, London.

Mr. Bull's Orchids.—We noted this extraordinary exhibition at the commencement of the season, but as time goes on, changes necessarily occur. Truly we may say its interest increases. At this season it is particularly interesting, from the large number of distinct species which are represented in flower. Cattleyas, such as Sanderiana, gigas, Warneri, eldorado, splendens, make a brave show; Oncidium ornithorhyncum, Phaius Humbloti, Lissochilus Krebsi, various Thunias and Sobralias, the curious yellow Epidendrum Wallisi, Cœlogyne speciosa, the summer-flowering form of Angræcum sesquipedale side by side with Calanthe oculata gigantea, Aërides crassifolium, Acanthephippium bicolor, Oncidium phylloglossum, with a lip like a brown leaf; Epidendrum nemorale, with long, narrow, violet segments; the beautiful white Dendrobium Dearei, Promenæa citrina. But it is time to stop! We have said enough to give an indication of the great variety of species now in flower, and which give the exhibition special interest to the real Orchid lover.

Monstrous Odontoglossum.—We are indebted to Mr. Outram for a spike of O. crispum, in which nearly all the flowers are more or less distorted. The conditions were different in all the flowers. In some there were no side petals at all. In other cases there were but two sepals and no lip. These changes were probably due to some check or arrest of development in an early stage, but it is impossible to say what. The plant was grown by Mr. Wilson, gr. to Hugh Stevens, Esq., West Mount, Kelvin Side, Glasgow, who has a fine display of Odontoglossums at this time, including many fine forms and distinct varieties.

Ostrowskya is not a pretty name, but the plant is not responsible for that, and its flower is something to marvel at. We gave a figure of it at p. 65, of our second volume for 1888. But it has some peculiarities that render it a little difficult, as the French would say. Mr. Gumbleton tells us it takes at least five years to grow it to flowering size from seed. Its growth the first year, says Mr. Gumbleton, is the least of any plant he ever saw; it throws up only the two little cotyledons the first year and nothing more. The seed leaves remain about six weeks, a rhizome like a piece of white cord is formed, and then the plant goes to rest. Here is a case for study and experiment. If the plant could be induced to produce root-buds or side buds which could be struck, the flowering process might be accelerated.

Landscape Gardening.—Mr. Henry Milner is about to issue an illustrated treatise on the art and practice of landscape gardening. From such a man, the inheritor of such noble traditions, and one who has shown himself capable of turning them to account, much may be expected. The work will be what the French call an *ouvrage de luxe*, with numerous illustrations, and will be published by Simpkin, Marshall & Co.

The Vine-louse Phylloxera.—If we may judge from the infrequency with which specimens are now sent to us, as compared with what was the case a few years ago, gardeners have nearly succeeded in

this country in stamping out the pest from our vineries. Of late years we have seen only the root-form, but when specimens were first sent to us, it was the leaf-form which predominated. Now again we have the leaf-form before us, and we regret to say from an establishment near home, and from a new vinery, in which the plants are placed in a newly-made border. How it was introduced is not known.

Finsbury Square.—An elegant pavilion has been erected in this square, and was opened to the public on Friday evening last, when the gardens were illuminated, and Finsbury was festive. The building, which is very elegant, was designed and constructed by Mr. Fawkes (Crompton & Fawkes). As we intend shortly to give an illustration of the structure, we shall defer the publication of further details for the present.

Rose Fairs in connection with flower shows are happy innovations, when the money obtained by the sale of the flowers is devoted to some charitable object. Visitors toflower shows areoften anxious to carryhome with them some of the floral beauties on which they have gazed,and Rose fairs give them the opportunityof satisfying their own desires, and of aiding some charity at the same time. The Gardeners' Orphan Fund has received £6 6*s*. 6*d*. from a Rose fair at the recent Richmond show, and from a similar source at Croydon as much as £15 11*s*. At the Tunbridge Wells Horticultural Society's Show, held on Wednesday last, the local hospital was the institution to be benefited. Large exhibitors of Roses always bring to the show-ground more blooms than are to be staged, and if a few are given over to the "fair," they lose nothing, and, indeed, they have responded liberally on these occasions.

Vanda teres.—We take the following from the *Journal des Orchidées*:—On the occasion of the visit of the Queen to Waddesdon, a bouquet composed entirely of flowers of Vanda teres was presented to Her Majesty. *Apropos* of this, it is stated that the first flower produced in England expanded in 1833, in the gardens of the Duke of Northumberland, and was offered by the Duchess to Princess Victoria, then about thirteen years old, and residing with her mother in Kensington Palace.

Mr. W. B. Hemsley.—Consequent upon the retirement of Professor Oliver, various changes in the staff of the Kew Herbarium have been made. We have already alluded to the fact that Mr. Baker succeeds Professor Oliver, and now it is a matter of great satisfaction to announce that Mr. Hemsley has been appointed in Mr. Baker's stead. Mr. Hemsley has already seen nearly thirty years' service in the Herbarium, but interrupted for a few years by ill-health. Like his colleague, Mr. Baker, Mr. Hemsley has always been ready to render service to horticulturists, and it is a matter of no small moment to horticulture to know that the Kew staff contains such tried friends as Baker, Hemsley, Brown, Rolfe, not to mention the members of the garden and museum staffs.

Fasciated Lilies.—From time to time extraordinary fasciations in Lilium auratum have been noted and figured in these columns. On Tuesday last Captain Elwes showed a remarkable case of the kind in L. Martagon, and we have before us a splendid example of the same malformation in the same species, sent us by Messrs. Peter van Velsen & Sons, of Haarlem, and which bore about 160 flowers in various stages of expansion. What is the cause of this overgrowth and production of buds is as yet a mystery.

Plants and Their Culture.

The Stove.—If this house has been rearranged, and the larger Palms and other plants removed, growth will have a better chance to develop and gain firmness. Some warm houses are insufficiently heated, which is a cause of a great anxiety to the cultivator, as he loses much of his summer's labour by the loss of foliage in the winter; and where such houses exist, every care should be taken to get the wood of all plants that have to be wintered in them well-ripened. I do not approve of the plan often adopted of allowing the heating apparatus to be entirely stopped in the summer time, but advise a little warmth to be maintained in the pipes at all times to prevent injurious falls in the temperature of the house; it being better to admit air by the top ventilators when it is too warm, than to have no artificial heat. Sometimes the water used for syringing and watering purposes is obtained from tanks through which the hotwater-pipes are made to pass, and when the fires are put out the water is cold, and the plants watered with it receive a check just at a time when they ought to be in full vigour. The stoves must be kept very moist, as dryness is always followed by some insect plague. Syringing evening and morning is not enough, but plenty of moisture must be distributed several times daily, and always the last thing in the evening. Many out-of-the-way dry corners can be kept moist by putting moss into them, and keeping it wet. At this date Crotons must be syringed heavily, and supplied with liquid-manure when the pots become filled with roots. Syringing the top of the plants merely is insufficient, and red-spider will soon put in an appearance, bringing disfigurement to the young growth. Crotons should be wetted on all sides, especially the underside of the leaves. Other fine-foliaged plants need somewhat the same treatment to check red-spider and thrips.

Anthuriums which have lost their brightness should now have the faded spathes removed, and if they have been hitherto kept cool, they should now have a close warm corner in the stove, and be encouraged to grow, the young growth being kept clean by frequent sponging. Ixoras that have been in bloom will soon make a new start if they were kept rather dry when in bloom; a moist warm atmosphere should be afforded them. Plants coming into bloom, if mealy-bug be present, should be cleaned at once, it being impossible to clean them afterwards without injuring the flowers. Gardenias which were cut back and have now started, will require to be repotted, partially shaking them out; placing them when potted in bottom-heat. Young stock should be shifted. Gardenias give but little trouble if they are kept freely syringed and rapidly growing. A few crushed bones or bone-dust in the compost, and an occasional watering with soot-water when well rooted, give the plants a deep green colour. The old stock plants of Poinsettias, if they have afforded a sufficiency of cuttings, will give useful bloom in the autumn if they are now shaken out and repotted, growing them in a cold frame, which should be shut up early. These plants, when the bloom is over, may be thrown away. Gloxinias should be removed to a cooler house as they come into bloom, and succession plants get a shift into larger pots, the last lot of seedlings being pricked off to supply bloom in November. Achimenes may now be watered freely, giving them liquid manure sometimes. A cooler house should be found for those in bloom. Clerodendron Balfouriana, as soon as the bloom is over, should have the blooms picked off, and be shifted if large specimens are desired, taking care to preserve the tender roots in doing so, and letting the new growth travel freely over the roof, no tying or training being attempted, only keeping the shoots in place. This plant, when making its growth, delights in heat and moisture, and when its pot is full of roots liquid manure may be afforded it two or three times a week till the growth is ended. A temperature of 50° to 55° is high enough for them. *G. Wythes, Syon House, Brentford, W.*

The Hardy Fruit Garden.

The Prospects of the Fruit Crop.—Although fruit crops are not what was at one time anticipated, great improvement in the appearance of the trees has taken place, and these are making healthy shoots. If stopping the shoots of the trees which suffered worst is carried out not too closely nor too early, it will not cause a check, but if they are allowed to grow unrestricted for a short time, it will restore the trees to a healthy state. In a wet season like the present, trees in retentive soils that have been closely pinched,—I notice, have failed to carry fruit the next season, while others which were left unrestricted bore good crops.

Raspberries.—The stools have thrown up many more suckers than usual, and the weaker of these should be pulled up, leaving only five or six canes to a stool. If stock is wanted, or any making-up in plantations required, those throwing up a distance away from the stools should be left alone. Fruit is now ripening, and must be netted against birds, keeping the net high enough to allow the canes to grow to their full length, otherwise the nets will get very much damaged as well as the canes. If not mulched as advised previously, straw or long litter may be laid over the roots. In fruit-picking time there is always much to do, especially in such showery weather as we are having. Strawberries are rotting fast, and no chance therefore, of picking the fruit when dry should be lost. Raspberries and Currants, all of which have heavy crops, are beginning to colour fast, but they lack sweetness, and are nearly flavourless.

Currants should be pruned and thinned, but the young growths must not be cut too short, as a moderate quantity of foliage protects the fruit from sun and rain, and favours keeping, but too much hinders the quick drying of the fruit after rain. Net closely; and where Cherries, Gooseberries, and Currants occupy north walls, and Strawberries are planted on the borders, the late varieties come in most useful, and the net should be made so as to cover all by having laths or poles stretching from the edge of the walk to the coping to carry the nets. *A. Evans, Haslemere, Surrey.*

Home Correspondence.

The late Mr. B. S. Williams.—Much to my regret, I was prevented from paying the last tribute of regard to my old friend. On Thursday last, I met at the Trentham Flower Show Mr. F. Sander, of St. Albans, who suggested that something should be done to perpetuate our departed friend's memory, and that it should take the form of a medal, similar to the "Veitch Medal." I quite agree with the suggestion, and shall be most happy to do all in my power to assist in carrying out this most desirable object. Mr. Williams always took a most lively interest in horticultural exhibitions, and no one contributed more to their success, and no one was more highly esteemed amongst horticulturists of all grades; the main cause of this was his naturalness; there was nothing assumed; or, to use a figure of speech in common use in the present day, he put "no side on;" and, in this respect, I think all of us may learn an important life-lesson, summed up in two words—"Be natural." I am not wedded to the "Medal" idea; the fund might be devoted to "The Orphan Fund;" [or the Gardeners' Benevolent] but this, of course, is a matter of detail, which the trustees appointed would determine to the satisfaction of all concerned. *Bruce Findlay, Manchester.*

Pea Chelsea Gem.—This is one of the best early Peas we have had. It is good in flavour, and a heavy cropper, requires no sticks, and it is much larger in the pod than most early varieties are with us. It is better than American Wonder, William I., or Veitch's Selected, and it may be grown in rows close together, or wide enough apart for Cauliflowers to be planted between them. *W. A. Cook, Compton Bassett.*

Fittonias as wall plants.—The Fittonias or Gymnostachyums, are, as is well known, among the most beautiful of dwarf stove herbs, and planted out on rockwork in good masses they have no rivals, and make equally charming masses in pots or pans, and are some of the most useful of subjects for dinner-table adornment, harmonising with Ferns, mosses, &c. Whilst admitting the beauty of this plant as generally grown, one of the best places to grow them, and where their fine colours can be seen, is the surface of a wall, in which position they are brought near to the eye, or looked down at. There is no objection to using them on walls or rocks of considerable height, but they are more effective when on low ones, the upper surface of the leaf being more richly coloured, and much of this is lost to view on elevated spots. The shady sides of walls, suit the Fittonias best, and if they are planted on sunny aspects, the plants must be densely shaded to bring out their beauty. The Fittonias, like many other variegated-leaved plants, have the peculiarity that their delicate leaf-colouring can only be perfected in a subdued light, and not only do the colours get richer under shade, but the plants become more robust. Fittonias love moisture as well as shade, their roots clinging to walls which are damp, and in these places the branches root at every joint. All species of Fittonia may be used to clothe walls, but F. gigantea is rather too large in its growth, and is not so richly coloured as F. Pearcei,

F. Verschaffelti, and F. rubro nervum. The finest of all is the silver-veined and richly reticulated-leaved F. argyroneura, which is a species whose leaves make good contrast to the above varieties, which have variously-coloured veins. To plant a wall effectively, "pockets" should be provided about a foot or 18 inches apart; in these a little peat, loam, and moss should be placed, and a single plant or even a cutting put into each pocket, watering and syringing freely till it gets established. The small flowers of these plants are not to be despised in such positions; and some of the plants may be allowed to bloom. *A. Evans, Haslemere.*

EPHEDRA DISTACHYA.—The note and figure of E. altissima, in a recent issue of the *Gardeners' Chronicle*, brings to mind the attractive specimen which is in these gardens. This plant is perhaps the finest in the country; its width being 16 feet 6 inches, breath 12 feet, and height 6 feet. In habit it is erect, and very dense, bearing numerous dark green, slender, articulated branches, with small inconspicuous leaves. The Ephedras should be planted in an open sandy soil. E. altissima is readily raised from good seed, as are others of the genus, and doubtless the above-named plant could be so raised; or, failing this, it might be increased by taking up the growths which spring up through the turf around about the plant. Our specimen very rarely fruits. *W. Harrow, Botanic Gardens, Cambridge.*

THE SHRUBBY CALCEOLARIA.—About the middle of July is a good time to sow a pinch of seed of a good strain of these showy Calceolarias. The seed-pan should be large, with 2 inches of crocks, the smaller ones being put on the top, and over these some moss or half-decayed leaf-mould, and filled up to within half an inch of the rim with light, sandy mould, making it fine on the top, and pressing it together; half an hour before sowing the seeds, watering the pan with a fine rose can. Scatter the seeds thinly, press them into the soil, and place the pan under a handglass on the north side of a hedge or wall. The pan may be covered with a piece of glass. In sunny weather put a mat over the handlights. The seeds, if good, will germinate within a fortnight, and no water being necessary, none should be given during the interval. As soon as the seedlings appear, light and air must be admitted, and the seedlings be pricked out, when large enough, in pans or boxes filled with a mixture of three-parts fine sandy loam and one of sweet leaf-mould. *H. W. Ward.*

ARAUCARIA IMBRICATA.—Seeing in your issue of July 5 a paragraph referring to the above, some of your readers may be interested to know that we have here several trees which bear cones, and from the seed of one I have succeeded in raising three plants. The seed was sown in April, 1889, in a vinery, the plants being planted out in the spring of this year. They are now 7 inches in height, and making three or four shoots. *W. Meredith, Scorrier House Gardens, Cornwall.*

HEREDITY IN PLANTS.—I am anxious to record all cases that I can hear of, of variations in plants, which have arisen under cultivation in different soils or other external conditions, whether they occur in roots, stems, leaves, flowers, fruits, or seeds, and have become hereditary by seed. I shall be much obliged if any readers will kindly communicate with me, if any instances have come within their experience. *George Henslow, Rev., Drayton House, Ealing, London, W.*

CARNATION MRS. REYNOLDS HOLE.—A note on p. 12 of your last issue, infers that planting-out in the open ground is the cause of "gout" in the above variety, and that pot culture will dispel it. This is not my experience. Each year since its introduction I have grown it in increasing quantity, and have confined it to 6-inch pots throughout, so far as growing it is concerned. I have, however, had "gouty" plants annually—indeed the variety in question appears prone to this evil, and something more than pots alone will be needed to effect a cure. The variety is naturally a gross grower, and from experiments I incline to the belief that a poor soil and equally firm potting are more likely to prove beneficial in this direction, and, to a great extent, check its gouty inclinations. I have had several hundreds in pots this season, and under the treatment accorded, I notice a welcome reduction in the number of gouty plants. Occasionally, I have noticed the same thing occur in the old Crimson Clove and Gloire de Nancy, and though the instances are rare, its occurrence is invariably noticeable in plants of exceptional vigour. *E. J.*

ROSES AND PRUNING.—A common belief exists amongst gardeners that Roses live only to be pruned hard, but if these ardent knifemen would look around them and observe the flowering capabilities of a wild Rose growing in, shall we say, hungry soil in a hedge-row, or at the foot of an aged tree, it would be understood how well Roses grow without their assistance. The standard Rose is often condemned, and rightly so, as generally treated for its ugliness, but just let standards alone, or at least only thinning out weak flowerless shoots, and these same mop-handled plants will extend all round, forming heads 5 feet to 7 feet in diameter, with the tips of the lower tiers of branches touching the earth, and be smothered with hundreds of blooms in place of the score or dozen of the pruned head. A capital example of an unpruned standard Rose is, or was, quite recently in bloom at Highgate Cemetery in the old portion near the catacombs. *A. V. E.*

RAINFALL IN JUNE.—We have recorded more rain during the past month than in any previous month this year, and have registered 3·41 inches as against 1·09 inches last year. Rain has been heavy on several dates, and it has rained more than ·05 on each of sixteen days. *W. A. Cook, Compton Bassett.*



Fig. 9.—Lilium candidum.

PINE-APPLE AND LORD NAPIER NECTARINES.—For growing under glass, I hold these varieties amongst the best, they being good growers and free bearers; the fruits large, high coloured, and of good flavour. The skin is somewhat tender, and easily injured if the sun's rays strike it about the time the fruits are taking their second swelling, and they are in close proximity to the glass. Therefore, where the trellis is less than 1 foot from the glass, a light shading of No. 3 tiffany, tacked on to the lights, or lime-wash syringed over the glass, should be had recourse to at the time indicated to prevent the fruits being burnt by the sun. *H. W. W.*

WHITE VARIETIES OF LÆLIA ANCEPS.—At p. 15 of your last issue, Mr. Catt refers to these plants as making larger growth, and hopes for their blooming in consequence. His experience seems like ours here. Since I bought my plants in 1885, but one solitary spike of L. a. stella has appeared; that was last year. That spike came on a deformed bulb that carried no leaf, and I see there are two spikes now appearing on similar leafless bulbs. Among the plants (which formed a large mass, and which was broken up) are a dozen or more that had they been typical L. anceps would have all bloomed ere now, for they have been amply strong enough two years past. I am much interested in these newer white forms, and have never observed this deformed bulb with a spike in L. anceps before, and should much like to hear if others have found the same vagary in them. We have latterly transferred them to baskets from their pots, their roots evidencing an antipathy to remaining in anything, but we have no basket full of flowers, though we have it full of plant. Speaking of baskets—has anyone tried Cattleya Mendelii in them? Two years ago, wishing to make an experiment, one imported plant was put in; it turned out a grand variety, and now, its second season, has made wonderful improvement, feeling the flowers less than the potted plants. It has made me decide to risk all the most valuable varieties to the care of the basket. At any rate, they are not easily knocked over. *D. B. Crawshay, Rosefield, Sevenoaks.*

SOCIETIES.

ROYAL HORTICULTURAL.

July 10.—The exhibition at the Drill Hall last Tuesday was comparatively poor, there being no great attraction in the way of novelties. Orchids were very few, but the display of fruit was much better than usual. Several lots of fine Strawberries and some equally good Cherries were contributed. The afternoon lecture was on "Lilies," the subject being handled in a masterly manner by Mr. H. J. Elwes, who was listened to with attention by a good number of visitors.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. S. Hibberd, H. Herbst, J. Walker, W. C. Leach, H. B. May, T. W. Girdlestone, H. Cannell, B. Wynne, T. Baines, Ch. Noble, J. Fraser, C. T. Druery, W. Holmes, W. Goldring, F. Ross, G. Nicholson, and Dr. M. T. Masters.

As a fitting accompaniment to the remarks on Lilies made by Mr. Elwes, there was an interesting display of these flowers from Mr. T. S. Ware, Hale Farm Nurseries, Tottenham. The most noticeable was the recently introduced Lilium Bolanderi, remarkable by reason of the rich colour of the flowers, which are deep claret-red, with darker spots. The flowers recall those of L. maritimum in form, but the perianth segments are narrower, and more reflexed; the bulb is like that of L. californicum, and the dark green glaucous leaves are whorled, sometimes in double series. Other noticeable species were L. tenuifolium, L. elegans vars., L. davuricum vars., L. Parryii, L. Brownii, L. odorum, L. pardalinum, and L. p. lutea, L. Martagon, &c., and also several hybrids, including a noteworthy one, the result of crossing L. Parryii and L. pardalinum, the resulting plant, named Francis Fell has flowers of Indian-yellow, with small brown spots on the lower half of the segments. We believe this is the first hybrid from L. Parryii.

An extensive display was made by Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, S.W.; flowering shrubs formed the larger portion, among them being Stuartia pseudo-Camellia, with its beautiful satin-like white flowers; Berberis aristata, pale yellow; Indigofera floribunda alba, very pretty; Escallonia Philippiana, Spiræa Bumalda variegata, a very dwarf shrub, with prettily variegated leaves, yellow, sometimes tinged with red—a plant which would look well in the front of a small shrubbery. Among other exhibits from the same source were hybrid Anthuriums (A. Rothschildianum ×), showing spathes of various degrees of colouring; a prettily variegated Zingiber named D'Arceyi; also Gloxinia Gaiety, very pretty rich crimson, with a wide outer band of white; and another variety, Novelty, of intense scarlet; greenhouse Rhododendrons, a collection of cut herbaceous plants, including Gaillardias, Sweet Williams, Campanula Medium-calycanthema vars., Phloxes, Poppies, Delphiniums, &c., and three fine specimens of Lilium auratum platyphyllum, measuring 8 feet in height.

A collection of Roses, nine boxes of twenty-four each, came from Messrs. Paul & Son, Cheshunt, blooms of the leading H.P.'s being well represented. Among the finest were Baroness Rothschild, Mrs. J. Laing, S.-M. Rodocanachi, the new Bourbon, Mrs. Paul, Sultan of Zanzibar, Comte Raimbaud, and Pride of Waltham. Specimens of Magnolia Thompsoni, with flowers of pale creamy-brown were shown, and blooms of the new Rose, J. D. Pawle, with Paul's Scarlet, for the sake of comparison, and they were seen to be quite distinct in colour.

Mr. W. C. Leach, Albury Park Gardens, Guildford, had a large lot of Alstrœmeria seedlings in a good variety of colour, and were very effective.

Messrs. H. Cannell & Sons, Swanley, Kent, had blooms of single and double tuberous Begonias, the latter including several fine forms, and also plants

of zonal Pelargonium. Turtle's Surprise, a double variety with deep scarlet flowers and a good-sized truss; a double Begonia, June, bright scarlet and of good form, came from Messrs. J. Laing & Sons, Forest Hill, S.E.

Mr. J. Hall, Cambridge, sent plants of Scolopendrium vulgare cristata Morgani [?], a prettily-crested form raised true from spores.

Flowering branches of Clethra arborea, the Lily of the Valley tree, and of Stuartia virginica, a pretty hardy shrub, were sent by Mr. G. Wythes, Syon Gardens, Brentford.

From Mr. J. T. Gilbert, Dyke Bourn, Lincoln, came specimens of Polyantha Rose, of rich carmine colour, named the Engineer; and from the Society's gardens at Chiswick, a specimen of Babiana rubrocyanea, with very pretty, rich blue flowers.

A large group of Carnation Germanica was sent by Mr. Hill, gr. to Lord Rothschild, Tring—and very pretty the display was. Plants of another yellow Carnation were shown by Mr. H. J. Jones, Hither Green, Lewisham, it was a free flowering variety, with large flowers, the petals large, and fringed slightly; it will probably be a good border variety, the name given was Mrs. Saunders. Seedling Petunias and old Gold Pansies, in various shades, came from the same source.

A collection of several varieties of Sweet Peas came from Mr. H. Eckford, Wem, Salop, including Stanley, rich purple-red, the standard being flushed on the outer face with a metallic lustre; and Dorothy Tennent, a delicate lilac-mauve.

Messrs. Barr & Son sent a collection of herbaceous plants in great variety, including Eryngiums, Campanulas, Poppies, Potentillas, Sweet Williams, &c.; and Mr. T. J. Saltmarsh, Chelmsford, sent some fine cones of Abies nobilis glauca.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. De B. Crawshay, T. B. Haywood, H. M. Pollett, Ch. Pilcher, H. Ballantine, J. Dominy, E. Hill, L. Castle, J. Douglas, A. H. Smee, and J. O'Brien.

From the collection of Sir Trevor Lawrence, Burford Lodge, Dorking, came a curious Bulbophyllum named grandiflorum; it has long perianth segments, tesselated with chocolate-brown on a dull pale yellow ground; Sarcopodium psittacoglossum, with curious flowers of yellow, and a deep crimson lip; also a fine flower of Cypripedium Curtisii, and a plant of Aganisia cœrulea, with a raceme bearing five of its beautiful flowers of soft blue with a pale lilac-brown lip.

Messrs. F. Sander & Co., St. Albans, had a few interesting plants on view, including specimens of Cypripedium Rothschildianum and C. Elliottianum, about which a good deal of argument has taken place as to whether they are distinct or not. As shown on this occasion, the main difference consisted in the ground colour of C. Rothschildianum being white, and that of C. Elliottianum yellowish; but this nomenclature does not agree with the figure in *Bot. Mag.*, t. 7102, where C. Rothschildianum is represented with the yellowish ground; and, moreover, in the original description of the plant by the late H. G. Reichenbach, published in our issue for April 14, 1888, p. 457, we read that the odd sepal is "yellowish-white," the ground colour of the petals being stated to be "yellowish-green," whereas, in the description of C. Elliottianum in our issue, or November 3, 1888, p. 501, Mr. O'Brien gives the ground colour of that flower as white; and in a subsequent description by Reichenbach, published on p. 556 of our issue for November 10, of 1888, the ground colour is also referred to as white; so we conclude the names have got interchanged. Mr. Sander also had Lælia grandis, sepals and petals dull orange-brown, and the lip finely developed, and of good colour; Cattleya Sanderiana, with irregular mottlings of crimson on the petals and sepals; Vanda suavis, a heavily-spotted variety; Odontoglossum crispum punctatissimum, a finely-spotted form; Oncidium hastatum var. Ernesti, a handsome-looking plant, with flowers of light green spotted brown, and lip pale brown; and Aërides expansum Leoniæ. An interesting hybrid, Cypripedium Youngianum ×, was also sent; the parentage was C. superbiens × Roebeleni, the latter being the pollen parent; the flower is large, white, with a few prominent lines of brownish-green on the dorsal sepal; the lip is hairy, and dull olive-brown; the petals are long and narrow, white, with greenish lines, and spotted with deep crimson-brown, the margins being ciliate; the whole flower has a beautiful white appearance.

Mr. Ballantine, The Dell Gardens, Egham, showed a pretty little Masdevallia Schroderiana; it is allied to M. Rothschildiana, and the flowers are rich crimson, the lower part, however, being white. Also Cattleya Mossiæ and C. Dowiana var. Emperor Frederick, white, having a broad very rich crimson-magenta lip, with a narrow white edge.

Mr. Hill, gr. to Lord Rothschild, Tring, sent Zygopetalum crinito-maxillare, a hybrid with three flowers, the lip violet, with a few white areas, and the petals and sepals green, with bold brown spots.

Fruit Committee.

Present: R. D. Blackmore, Esq., in the chair; and Messrs. P. Crowley, H. Weir, G. Bunyard, J. Willard, T. J. Saltmarsh, G. Wythes, J. Hudson, R. Balderson, F. Q. Lane, and T. F. Rivers.



Fig. 10.—[illegible] PONTICUM.

Strawberries were largely shown by nurserymen and private growers, and were, in almost all instances, of large size, if not of the best flavour; the wet weather having increased their size, whilst it had lessened or much diluted the flavour and aroma of the fruits.

From Messrs. J. Veitch & Sons, Chelsea and Slough, came the new Fig, Saint John, a small plant in a pot, carrying a dozen fruits of about the same age, but unripe. The delicious green Fig, with a pinkish flesh Violet Sepor, about which favourable notices have been given in these columns, and Figs Pingo de Mel, another Portuguese variety, and Brown Turkey, were also shown. The collection of Strawberries from the Slough nurseries of the firm, included all the varieties of Strawberries of good quality grown in this country. We may single out a few of those less well known, of which good samples of fair flavour were shown, viz., Presiden Delacourt, a conical-shaped fruit, with prominent seeds; Auguste Boisselot, like Filbert Pine, but larger; the famous Bothwell Bank Seedling; the rather shy Loxford Hall Seedling; Unser Fritz, a somewhat poor sample of it—it usually has larger fruits than those shown.

A Bronze Banksian Medal was made the award for this collection.

Messrs. G. Bunyard & Co., Maidstone, exhibited boxes of immensely large examples of Strawberries, John Powell (Kitley's Goliath), Dr. Hogg, Aromatic, Bicton Pine, J. Veitch, Kimberley, British Queen, and others.

Messrs. Paul & Son, Cheshunt, exhibited twelve dishes of the same kind of fruit, including Pauline, Noble, of immense size; King of the Earlies, Elton, J. Veitch, Vicomtesse Héricart de Thury, La Grosse Sucrée, A. F. Barron, a very fine sample; and others. A Bronze Banksian Medal was awarded.

Mr. W. C. Leach, gr., Albury Park, Surrey, showed two boxfuls of Sir Joseph Paxton and President, very fine fruits, of about 1 peck each variety.

A glossy, wedge-shaped, dark crimson Strawberry, named Collis's Seedling, was shown by the raiser, J. Collis, Acton Green; Lord Napier and Waterloo were likewise fine samples.

Mr. H. Ridgwell, The Gardens, Histon Road, Cambridge, showed Strawberry Incomparabilis, a seedling from Keen's Seedling, but bearing a strong resemblance to Sir J. Paxton. It has a nice flavour, with just a suspicion of British Queen flavour, and is said to bear carriage well. Exhibitor sent good fruits of other varieties.

A good many Melons were shown, but the season hitherto has been inimical to good flavour in these fruits. Mr. Goodacre, gr., Elvaston Castle, showed his variety, Countess, a large, handsome, netted, yellow-skinned fruit. Mr. C. W. Cook, gr. to Major Heneage, Compton Basset, showed a new Melon, the product of crossing Hero of Lockinge with Golden Perfection; it has thick flesh, pink in colour, with a thin rind, and, if it be of good flavour and constitution, it should become a valued variety. He also showed a new Pea. Mr. Wythes, gr., Syon House, Isleworth, brought Syon House Seedling, a Beechwood in shape, but with a yellow smooth skin; and Mr. Wilkinson, gr., The Highlands, Minchin Hampton, had Highland Hybrid.

New Cucumbers came from Mr. W. Field, Brunswick Street, Leamington, smooth green, dark in colour; and from Mr. Allan, gr., Gunton Park, Norfolk, three fruits in perfection of Allan's Favourite. They measured each more than 2 feet. An Award of Merit was given in this case.

The exhibit of F. T. Rivers & Sons, Sawbridgeworth, Herts, was one of the most taking, and included house-grown Peaches, Nectarines, Cherries, and Plums of great excellence, and for which a Silver Banksian Medal was awarded. Of less common varieties of the Cherry, mention may be made of Griotte Imperial, Black Hawk, Ludwig's Bigarreau, Olivet, and D'Espagne—these last two of a claret colour; Bigarreau Noir de Guben, a very large black fruit; Hâtive de Bourbon, also black fruited; Monstrueuse de Mezel. The Peaches were Early Rivers, Princess of Wales, very large; and two other seedlings; Early Louise, Early Beatrice, Alexander, Stump the World, and the yellow-fleshed Exquisite, said to be good at this season. It is certainly very large. Plums were Monarch and Jefferson. Mr. H. J. Jones, of Ryecroft, Hither Green, S.E., showed the Peach Tomato, a small dull red fruit, and prolific. Mr. Rodway sent from British Guiana dried fruits of Bananas which were highly thought of by the Committee.

NATIONAL ROSE.

July 5.—Considering the unfavourable weather which has been prevalent of late, the metropolitan exhibition of this Society, which was held at the Crystal Palace last Saturday, was very satisfactory. The Roses looked fresh, and the colours were generally bright, although thin, and the Teas in many cases showed the effects of rain. The particulars of the classes, as given below, are simply those taken from the entry cards, as we had not received a schedule, and were unable to procure one at the show.

General Classes.

In the *Nurseryman's* division, the leading class was for a collection of seventy-two blooms, distinct, and the best lot was that from Mr. F. Cant, Col-

chester, who thus won the Challenge trophy. He had bright well-formed flowers of good substance. The whole collection was of very even merit, but perhaps the following were superior:—Louis van Houtte, Marie Verdier, Madame de Watteville, Comtesse de Ludre (a very striking flower), Lady Mary Fitzwilliam, Her Majesty, Etienne Levet, François Michelon, Madame Lambard, Madame Gabrielle Luizet, Duke of Edinburgh, Merveille de Lyon, Baroness Rothschild, General Jacqueminot, Madame H. Pereire, John Hopper, Mrs. J. Laing, Crown Prince, Duchess of Bedford, Mrs. G. Paul, Duke of Teck, Sir R. Hill, Ulrich Brunner, Mons. Matt. Baron, Horace Vernet, and Camille Bernardin. The competition ran very close all through the class, and the English Rose and Fruit Co., Hereford, was a capital 2nd, having, as the best blooms, very good examples of Madame C. Wood, Mrs. J. Laing, Constantin Tetriakoff, Comtesse d'Oxford, Baroness Rothschild, Madame G. Luizet, Marie Finger, Mrs. Baker, General Jacqueminot, Horace Vernet, Magna Charta, Marquise de Castellane, Merveille de Lyon, and Duke of Wellington. Mr. B. R. Cant, Colchester, was 3rd, also showing a very fine lot of flowers: Paul Neyron, Camille Bernardin, Victor Verdier, Captain Christy, Marie Finger, Prince Arthur, Duke of Wellington, Ulrich Brunner, Mrs. Baker, Souvenir d'un Ami, Suzanne-Marie Rodocanachi, and Madame de Watteville were the finest. The 4th prize stand was that of Messrs. Harkness & Sons, Bedale, Yorkshire, who also made a highly creditable display, with flowers of rather smaller size than were seen in the other stands; in this collection was the premier H. P. and T. of the nurserymen's classes, the respective varieties being Mrs. J. Laing and Catherine Mermet — two beautifully-formed flowers; Madame I. Pereire, Et. Levet, Comte de Raimbaud, Duke of Edinburgh, and Madame Cusin may also be named.

For forty-eight varieties, three trusses of each, there was also a good show, Mr. B. R. Cant being placed 1st; he had a well-coloured and even lot, and distinctly superior; the best were Madame de Watteville, François Michelon, General Jacqueminot, Mrs. J. Laing, Dupuy Jamain, Marie Bernardin, Marie Finger, Madame Cusin, A. K. Williams, Pride of Waltham, Duke of Edinburgh, Madame C. Joigneaux, Baroness Rothschild, Prince Camille de Rohan, and Mrs. Lambard. The English Fruit and Rose Co. was 2nd, having a lot which was noticeable for the bright colours of the blooms, Marie Baumann, Merveille de Lyon, Pride of Waltham, Etienne Levet, Mrs. J. Laing, Fisher Holmes, Magna Charta, Duke of Wellington, and Louis van Houtte, being among the best. Mr. F. Cant was 3rd, also having a clean and even lot, A. K. Williams, Madame de Watteville, General Jacqueminot, and Mrs. J. Laing, being good examples.

In competition for forty-eight single trusses, distinct, there were several lots staged, and the 1st prize stand of Messrs. J. Jeffries & Son, Cirencester, fully merited the award made, the blooms were very fresh, clean, and bright, Mrs. J. Laing, Ulrich Brunner, Marie Baumann, Magna Charta, Comtesse d'Oxford, F. Michelon, Madame Montet, Duke of Teck, and Comte de Raimbaud, were first-class specimens. Messrs. Curtis, Sandford & Co., Devon Rosery, Torquay, were 2nd, with a lot of smaller flowers in equally good condition, Madame J. Desbois, Heinrich Schultheiss, Madame Bois, and Mrs. J. Laing, being well represented. 3rd, Messrs. D. Prior & Son, Myland Nursery, Colchester, Marie Baumann, Madame Cusin, and Pride of Waltham, being good examples.

In twenty-four single trusses, distinct, Mr. G. Mount, Canterbury, was 1st, showing a nice lot of good substance, in which the best were: Maréchal Niel, Comtesse d'Oxford, Mrs. J. Laing, Alfred Colomb, Prince Arthur, Etienne Levet, and Merveille de Lyon. Very closely following was the stand of Messrs. G. Bunyard & Co., Maidstone, who had a very fine Countess of Folkestone, A. K. Williams, and Dr. Andry; other blooms were also satisfactory. 2nd, Mr. J. Mattock, New Headington, Oxford, with a grand Horace Vernet, Dupuy Jamain, Ulrich Brunner, and Mrs. J. Laing, also being good.

There was a good competition for the prizes offered for the best twenty-four varieties, three of each: Messrs. D. Prior & Sons being 1st, with a capital lot very fresh and bright, the best blooms were Viscountess of Folkestone, Merveille de Lyon, Fisher Holmes, Madame de Watteville, and a finely coloured Madame Lambard; 2nd, Messrs. Keynes, Williams & Co., Salisbury, the best flowers being seen in Madame Eugène Verdier, Heinrich Schultheiss, Ulrich Brunner, Merveille de Lyon, Countess of Oxford, and Catherine Mermet, but the general effect of the collection was spoilt by the too close packing of the blooms. Messrs. G. & W. H. Burch, Peterborough, were 3rd, showing neat flowers, but small: Mrs. J. Laing, Etienne Levet, Madame C. Wood, and Duchess of Bedford, were the best.

The *Amateur* classes were well sustained, and in general the flowers left but little to be desired, in the leading class for forty-eight distinct. Mr. E. B. Lindsell, Bearton, Hitchin, was placed 1st, for a collection of much merit, but might have been better; there was a lack of substance noticeable, the blooms were fresh, however, and the colours good. Marie Verdier, S.-M. Rodocanachi, Comtesse de Nadaillac, Ulrich Brunner, Horace Vernet, F. Michelon, Comte Raimbaud, Duke of Wellington, Baroness Rothschild, Beauty of Waltham, and A. Rigotard, were among the best examples. The Rev. J. H. Pemberton, Havering-atte-Bower, Essex, was 2nd, with a stand containing some very fine reds—Lady Arthur Hill was well represented, and others were La France, Etienne Levet, Auguste Rigotard, Dr. Andry, Marie Verdier, François Kruger, and Madame Eugène Verdier; 3rd, Rev. A. Foster Melliar, Sproughton Rectory, Ipswich, whose stand had some fine examples of Ulrich Brunner, Baroness Rothschild, Comtesse d'Oxford, Duke of Wellington, Dr. Andry, and Madame Eugène Verdier.

In sixteen varieties, in threes, the Rev. J. H. Pemberton and Mr. Lindsell were placed equal 1st. In the latter's stand were moderately large blooms of Comtesse d'Oxford, Louis Van Houtte, Marie Verdier, Heinrich Schultheiss, and A. K. Williams; while the other contained Prince Arthur, Countess of Rosebery, Heinrich Schultheiss, and Comtesse d'Oxford, in good specimens. Mr. R. N. G. Baker, Heavitree, Devon, came 3rd, having a good display of large flowers, Merveille de Lyon, Etienne Levet, Ulrich Brunner, Madame Eugène Verdier, and Mrs. J. Laing being the best.

For thirty-six distinct single trusses there was a good competition throughout, the 1st place being taken by Mr. C. J. Salter, gr. to T. B. Heywood, Esq., Reigate, with a good solid lot, in which Baroness Rothschild, Duke of Teck, Heinrich Schultheiss, Ulrich Brunner, Comtesse d'Oxford, Camille Bernardin, Louis van Houtte, and A. K. Williams were the leading flowers. Mr. J. Brown, gr. to Mrs. Waterlow, Great Doods Gardens, Reigate, was 2nd, with smaller flowers, but very neat and fresh looking, Abel Carrière, Marie Verdier, Ulrich Brunner, Etienne Levet, François Michelon, Louis van Houtte, Mrs. J. Laing, Le Havre, and Camille Bernardin being the finest; 3rd, Rev. H. A. Berners, Harkstead Rectory, Ipswich, with an elegant lot of blooms, having as the best General Jacqueminot, Marie Finger, Prince Arthur, Xavier Olibo, Le Havre, and Madame G. Luizet.

For twelve distinct, in threes, Mr. J. Brown was leading, having Her Majesty, Duke of Edinburgh, Ulrich Brunner, and Madame G. Luizet, as the best. Mr. C. J. Salter, gr. to T. B. Haywood, Esq., Woodhatch, Reigate, was a good 2nd, with even blooms, Beauty of Waltham, Ulrich Brunner, and Marie Verdier being fine.

Mr. J. Gurney Fowle, Woodford, Essex, was 1st for twenty-four distinct, having fairly good blooms, of which Etienne Levet, Star of Waltham, Comtesse d'Oxford, La France, Duchesse de Morny, and Madame Lambard were the best; Mr. R. E. West came in 2nd, following very closely; Suzanne-Marie Rodocanachi, Merveille de Lyon, and Marie Finger were good. In the 3rd prize stand of Mr. E. M. Bethune, Horsham, was a fine bloom of Dr. Andry.

Mr. West had the best eight varieties in threes, showing well; Baroness Rothschild, F. Michelon, and Duke of Edinburgh were the best.

Mr. E. M. Mawley, Rosebank, Berkhampsted, led for eighteen singles, showing a very fine collection, in which was the premier H.P. bloom of the amateur section, being Ulrich Brunner; others were Ch. Lefebvre, Duke of Wellington, La France, and S.-M. Rodocanachi, all solid and good. Mr. T. Budgen, gr. to Miss Frances Baker, Holmfels, Reigate, was 2nd, following closely, the best flowers being Ulrich Brunner, F. Mills, and Duke of Edinburgh.

There was a good competition in the class for twelve distinct, Mr. R. L. Knight, Bobbing Place, Sittingbourne, leading with a really fine stand, of which the best were La France, Sultan of Zanzibar, Madame C. Wood, and Le Havre.

Mr. G. Miles, Hitchin, Herts, had the best nine, showing solid and even blooms, Mrs. J. Laing being fine.

In the class for six distinct, in threes, Mr. Burmand, Reigate, led well, La France, General Jacqueminot, and A. K. Williams being the best; while Miss F. Baker, who was 2nd, showed three fine bloom of Charles Lefebvre.

Some very fine flowers were shown by Mr. C. J. Grahame, Coombe Road, Croydon, being well developed and clean. He had the best twelve, distinct, grown within 10 miles of Charing Cross, Baroness Rothschild, Madame de Watteville, Comtesse de Nadaillac, and Her Majesty, being striking flowers; all the exhibits in this class were well coloured and fresh. Mr. J. Bateman, Rosevale, Archway Road, N., who took the 2nd, had Ulrich Brunner and Baroness Rothschild in fine form.

A class was provided for flowers grown within 8 miles of Charing Cross, and Mr. White, Muswell Hill Road, Highgate, had the best stand (six); while the best six of any H.P. was Marie Baumann, from Mr. E. H. Bethune, Dene Park, Horsham.

Teas and Noisettes.

Flowers of this section were generally good, and some of the leading stands contained really excellent flowers, but in others there was a want of size and substance.

Nurserymen.—Mr. G. Prince, Oxford, led for twenty-four distinct, showing a grand lot; decidedly the best—Comtesse de Nadaillac, Adam, Innocente Pirola, Anna Olivier, Niphetos, Rubens, Madame de Watteville, and Souvenir d'Elise Vardon, being highly creditable well-coloured examples. Mr. B. Cant followed with flowers of somewhat rough appearance, Madame Chauvry and Madame de Watteville being notable exceptions, however. In the 3rd prize stand of Mr. F. Cant, Madame Cusin was very well represented.

Competition ran close for eighteen distinct (nurserymen), Messrs. Harkness & Sons leading with an elegant lot of moderate size, even, and clean, Jules Finger, Marie van Houtte, Souvenir d'un Ami, and Comtesse de Nadaillac, being the best; Mr. J. Mattock came 2nd, with a fine lot, in which Souvenir de Thérèse Levet, Madame de Watteville, Adam, Innocente Pirola, and Rubens were good.

In the class for twelve of any Tea (except Maréchal Niel), Mr. G. Prince led with a superb lot of Comtesse de Nadaillac; and Mr. B. R. Cant was 2nd, showing prettily coloured Madame de Watteville.

Mr. Prince also had the best eighteen varieties, three of each, showing well-coloured flowers, Comtesse de Nadaillac, Madame Cusin, Adam, Souvenir d'Elise, and Innocente Pirola, being among the finest; 2nd, Mr. B. R. Cant, who included Comtesse de Nadaillac, Innocente Pirola, Madame de Watteville, and Jules Finger in good specimens.

Amateurs.—The chief class in this section was for eighteen single trusses, and the place of honour was accorded to the Rev. F. R. Burnside, who thereby won the Challenge Trophy offered for Teas and Noisettes. He had a fine lot of blooms of good form and substance, in which were Ethel Brownlow, Souvenir d'un Ami, Catherine Mermet, The Bride, Rubens, Francisca Kruger, and Marie van Houtte. The Rev. H. A. Berners was placed 2nd, also showing well, and including Madame de Watteville, Comtesse de Nadaillac, Comtesse de Riza du Parc, and C. Mermet. The Rev. F. Page Roberts, Scole Rectory, Norfolk, was 3rd, following well.

The best twelve varieties were from Mr. O. G. Orpen, Hillside, Colchester, who won with large flowers, in which Comtesse de Nadaillac, Maréchal Niel, and Madame de Watteville were good. Mr. J. Brown was placed 2nd with neat flowers, Catherine Mermet, and Alba rosea being pleasing samples.

Miss F. Baker had the best nine, the flowers being very neat, but small; and the best six came from Mr. E. Mawley, Madame Bravy being a good flower.

For twelve varieties, three blooms of each, the Rev. H. A. Berners led with flowers which were rather rough, Comtesse de Nadaillac and Madame de Watteville being good, nevertheless. The Rev. F. R. Burnside was 2nd, with well formed smaller flowers, but was to the fore in the class for nine, single trusses of Catherine Mermet showing well, and with this stand was the bloom selected as the premier Tea in the amateurs' classes, to which a silver medal was therfore awarded. The best six of any Tea were from the Rev. A. Cheales, Bockham, Surrey, who led with a good lot of Maréchal Niel; the Rev. A. Foster Melliar was 2nd with Marie van Houtte.

Open Classes.

The flowers here were generally very creditable, and competition was close in most classes. Mr. G. Prince had the best yellow (not Maréchal Niel), in Comtesse de Nadaillac, showing capital flowers. The

best twelve white (not Niphetos), was Rubens, a beautiful lot, from Mr. J. Mattock. Mr. B. R. Cant had the best stand of crimson in A. Colomb, winning in a strong competition, the finest twelve velvety-crimson in Prince Arthur, and was also 1st for Maréchal Niel. Mr. F. Cant had a fine lot of Victor Hugo in the class for velvety-crimson. Messrs. G. Bunyard & Co., led for Marie Baumann, with very fine flowers; the finest, Lady Mary Fitzwilliam, were from Messrs. D. Prior & Son. A. K. Williams and Niphetos (twelve of each), were best from Mr. B. R. Cant; and Messrs. Paul & Son, Cheshunt, led for Her Majesty. For any H. P. not named above, Mr. F. Cant was 1st with a good stand of Mrs. J. Laing; and Messrs. G. Bunyard were a good 2nd, having Ulrich Brunner. For twelve trusses of any new Rose, Mr. G. Prince led with his Souvenir de S. A. Prince.

In the class for twelve new Roses, distinct, Messrs. Paul & Son led, having an interesting lot, all very fine flowers, the best being Sir R. Hill, deep crimson; Lady A. Hill, rose-magenta; Mrs. James Wilson, cream; Ernest Metz, soft pink; and J. D. Pawle. In the 2nd prize stand of Mr. B. R. Cant, Comte H. Rignon, white, and pinkish centre; Sir R. Hill, and Lady A. Hill were the most conspicuous.

A Gold Medal, for a new seedling Rose, was given to Messrs. W. Paul & Son, for Salamander (H. P.), a flower of rich deep crimson-carmine; and for Mrs. Paul, soft pink, heavily flushed with crimson, very distinct, from the same exhibitors.

Garden Roses were well represented in the collection of Mr. C. E. Cuthill, Dorking, who had them in perfection, and was justly placed 1st.

Miscellaneous.

Under this head there is not much to record. Messrs. W. Paul & Son, Waltham Cross, Herts, sent a large and effective group of plants and cut flowers of Roses. From Messrs. J. Veitch and Sons, Chelsea, was an extensive lot of cut blooms of popular varieties. Mr. G. Prince showed Souvenir de S. A. Prince; and Mr. H. Bennett, Shepperton, had a fine new pedigree Rose (H.P.), named Captain Haywood, which is of a most beautiful brilliant scarlet-carmine colour. Among other exhibits was a bank of Begonia flowers, arranged on moss, from Messrs. J. Laing & Sons, Forest Hill; herbaceous plants, from Messrs. J. Cheal & Sons, Crawley; Gloxinias, from Messrs. H. Cannell & Sons; a collection of several varieties of Strawberries, from Mr. C. Turner, Slough; and from Messrs. Ryder & Son came a fine new self Pink, of a pale pink-lilac hue, and named Souvenir de Sale.

SCOTTISH HORTICULTURAL ASSOCIATION.

The monthly meeting of this Association was held in 5, St. Andrew Square on the 1st inst., Mr. Morrison, Vice-President, in the chair. Mr. D. McLellan, Superintendent of Public Parks, Glasgow, read a paper "On Horticulture, Villa Gardening, and Open Spaces in Large Centres of Industry," briefly glancing at horticulture as practised by the Egyptians, the Assyrians, the Jews, the Greeks, and the Romans, and also the Dutch and the French. In the outset, Mr. McLellan drew the general inference that the art was the outcome of civilisation, and the accumulation of wealth, while at the same time it was no doubt largely due, especially in cities, to the innate desire of man to surround himself with and enjoy the beauties of Nature. The immense strides which had been made in the progress of horticulture during the last fifty years was, he thought, to a large extent ascribable to the holding of flower shows throughout the country, and latterly to the creation of public gardens and parks, where the people might become familiar not only with the plants themselves, but with their treatment for the purposes of decoration and utility. In the lecturer's own experience of thirty-five years' administration of the public parks and gardens of Glasgow, he noted great and beneficial changes in the attitude of the public, particularly the young, towards the flowers, trees, and shrubs, which adorn the Glasgow parks. When first the Corporation of that city set their enlightened policy of providing attractive places of resort on foot, it was a difficulty to prevent injury to the floral and arborescent furniture of the parks and gardens. Now, however, the flowers are respected to such an extent that it is no unusual thing to see the children of the poor on Glasgow Green—which is more than any other breathing space in that city, the recreation ground of the poor—kneeling down to smell the flowers rather than to pluck and destroy them as formerly. Mr. McLellan advocated the multiplying of attractive breathing spaces and places of recreation in cities on sanitary, moral, and æsthetic grounds. The paper concluded with advocating the better adornment of streets, squares, private squares, and disused burying-grounds, the providing of winter gardens in which concerts and other amusements could be given, while they would also form pleasant promenades and means of shelter in inclement weather. Mr. McLellan received a cordial vote of thanks for his paper.

Mr. McMillan, Trinity, exhibited a number of varieties of zonal Pelargoniums of the bronze class, to show the result of a number of years' endeavour on his part to improve the flowering qualities of this class. The chief endeavour had been made in the direction of introducing double flowers, along with greater freedom of flowering. In this the exhibitor had achieved some success, and three of the several varieties tabled were considered worthy of receiving a First-class Certificate of the Association.

Mr. Foote, Parson's Green, Edinburgh, exhibited a very good Lobelia, suitable for either bedding or pot culture. The committee, however, considered that though as good as many of its kind, it was not sufficiently distinct or characteristic to merit a Certificate.

Mr. Cockburn of Cottbridge Hall, Edinburgh, exhibited some very fine samples of dwarf Hydrangea Hortensia, in 6 and 7-inch pots, each bearing from three to five heads of flower, of great size.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending July 5.	Accumulated. Above 42° for the Week.	Accumulated. Below 42° for the Week.	Accumulated. Above 42°, difference from Mean since Jan. 1, 1890.	Accumulated. Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1890.	Rainfall. Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1890.
		Day-deg	Day-deg	Day-deg.	Day-deg.	10ths Inch.		In.		
1	3 —	64	0	+ 117	— 72	4 —	129	24.0	23	26
2	4 —	74	0	+ 9	— 58	1 +	111	14.5	20	29
3	5 —	80	0	+ 7	— 93	8 +	95	11.3	17	27
4	6 —	92	0	- 21	— 39	8 +	99	11.6	31	35
5	6 —	87	0	— 35	— 26	3 +	91	11.0	31	31
6	5 —	97	0	— 19	— 68	14 +	94	14.0	28	33
7	3 —	85	0	+ 32	— 73	1 +	114	24.6	34	31
8	5 —	83	0	+ 28	— 81	3 +	107	15.7	28	29
9	6 —	86	0	— 15	+ 12	5 +	109	18.4	31	35
10	5 —	81	0	+ 7	— 55	0 av.	122	15.8	38	31
11	5 —	86	0	+ 18	— 14	0 av.	122	21.8	29	33
12	5 —	94	0	+ 71	— 22	14 +	115	17.7	27	40

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 5, is furnished from the Meteorological Office:—

"The *weather* has continued cold, wet, and very unseasonable in all parts of the kingdom. Rain has fallen almost daily, accompanied at times by thunder and lightning; the rainfall on the 4th and 5th was unusually heavy over some of the southern and south-eastern counties.

"The *temperature* has again been below the mean, the deficit having ranged from 3° or 4° in Scotland to 5° in Ireland, and to 5° or 6° over England. The highest of the maxima were recorded on somewhat irregular dates, and varied from 62° in the 'Channel Islands,' and 64° in 'Scotland, N.,' to 70° in 'England, S.' and 'S.W.,' and to 71° in 'Ireland, N.' In many instances the daily maxima were below 60°, except at our southern and south-western stations. The lowest of the minima, which were registered either on June 29 or July 4, ranged from 36° in 'Scotland, N.,' and 'England, N.W.,' and 37° in the 'Midland Counties,' to 43° in 'England, N.E.,' and to 55° in the 'Channel Islands.'

"The *rainfall* has been less than the mean in 'Scotland, N.,' and about equal to it over Ireland; in all other parts of the kingdom, however, an excess is shown, that in 'England, S.,' and the 'Channel Islands' being very striking. The amount collected during the night of the 4th to 5th was more than an inch at several of our southern and south-eastern stations, while at Lynsted (Sittingbourne) as much as 3·59 inches fell between 3 A.M. and 5 P.M. on the 5th.

"*Bright sunshine* has continued very deficient generally, the percentage of the possible amount having ranged from 17 in 'England, N.E.,' and 20 in 'Scotland, E.,' to 34 in 'Scotland, W.,' and 38 in 'Ireland, N.'"

MARKETS.

COVENT GARDEN, July 10.

The heavy rain of the past few days has completely upset our market, and prices have suffered considerably. Strawberries have been in heavy supply. Raspberries and Currants heavier than was expected. Business middling. *James Webber, Wholesale Apple Market.*

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Fuchsia, per doz.	4 0- 9 0
Arum Lilies, per doz.	8 0-12 0	Heliotrope, per doz.	5 0- 8 0
Aspidistria, doz.	18 0 42 0	Hydrangeas, doz.	12 0-18 0
— speci. plants, each	7 6-10 6	Ivy Pelargonium, doz.	3 0- 6 0
Begonias, per doz.	6 0-18 0	Liliums, various, per dozen	18 0-36 0
Cactus, per doz.	4 0-12 0	Lobelia, per doz.	4 0- 6 0
Calceolaria, p. doz.	6 0- 9 0	Marguerites, doz.	6 0-12 0
Cyperus, per dozen	4 0 12 0	Mignonette, per doz.	3 0- 6 0
Dracæna terminalis, per dozen	30 0-60 0	Musk, per dozen	2 0- 4 0
— viridis, per doz.	12 0 24 0	Nasturtiums, p. doz.	4 0- 6 0
Euonymus, in var., per dozen	6 0 18 0	Palms in var., each	2 6-21 0
Evergreens, in var., per dozen	6 0-24 0	Pelargoniums, scarlet, per dozen	3 0- 6 0
Ericas, various, doz.	8 0-24 0	— per doz.	6 0-12 0
Ferns, in var., doz	4 0-18 0	Petunias, per doz.	6 0- 9 0
Ficus elastica, each	1 6- 7 0	Roses, various, doz.	12 0-24 0
Foliage plants, various, each	2 0-10 0	— (Fairy), per doz.	6 0- 9 0
		Saxifrages, per doz.	18 0-24 0

*** Bedding plants in variety in boxes, and also in pots.

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun.	2 0- 4 0	Pelargoniums, scarlet, 12 spr.	0 3- 0 6
Bouvardias, per bun.	0 6- 1 0	— dozen sprays	0 6- 1 0
Calla æthiopica, 12 bl.	3 0- 5 0	Primulas, double, 12 sprays	1 0- 1 6
Carnations, 12 blms.	1 0- 2 0	Pansy, or Heartsease, 12 bunches	1 0- 2 0
— 12 bunches	4 0- 6 0	Poppies, various, doz. bunches	1 0- 2 6
Cornflower, 12 bun.	1 6- 3 0	Pyrethrum, 12 bun.	3 0- 6 0
Eschscholtzia, 12 bn.	2 0- 3 0	Roses, Tea, per doz.	0 6- 1 6
Eucharis, per dozen	4 0- 6 0	— coloured, dozen	1 0- 1 6
Gardenias, 12 blooms	1 6- 3 0	— red, per 12 bun.	2 0- 6 0
Iris, various, 12 bun.	6 0-18 0	— Safrano, dozen	1 0- 2 0
Heliotropes, 12 spr.	0 6- 1 0	— outdoor, 12 bun.	1 0- 3 0
Lilium, var., 12 bl.	0 6- 4 0	Spirea, doz. sprays	0 6- 1 0
Maiden Hair Fern do	4 0- 9 0	Stephanotis, 12 spr.	1 6- 3 0
Marguerites, 12 bun.	3 0- 6 0	Sultan, 12 bunches	3 0- 4 0
Mignonette, 12 bun.	2 0- 4 0	Tuberoses, 12 blms.	0 6- 1 0
Myosotis or Forget-me-nots, 12 bun.	2 0- 4 0		
Pinks, various, 12 bn.	2 0- 4 0		

Orchid-bloom in variety.

Vegetables.—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Asparagus, English, per 100	12 0- ...	Mushrooms, punnet	1 6- ...
Beans, French, lb.	2 0- ...	Mustard and Cress, punnet	0 4- ...
Beet, red, per dozen	1 0- 2 0	Onions, per bunch	0 5- ...
Carrots, per bunch	0 6- ...	Parsley, per bunch	0 6- ...
Cauliflowers, each	0 3- ...	Shallots, per lb.	0 6- ...
Celery, per bundle	1 6- 2 0	Spinach per bushel	6 0- ...
Cucumbers, each	1 0- 1 6	Sprue, per bundle	1 6- ...
Endive, per dozen	2 0- ...	Tomatos, per lb.	1 0- ...
Herbs, per bunch	0 4- ...	Turnips, per bunch, new	0 4- ...
Lettuces, per dozen	1 6- ...		

Potatos.—Trade firm. Jersey and French supply decreasing fast. Prices for Rounds, 6s.; Kidneys, 7s. to 8s.; English Kidneys, 8s. to 10s.; Beauties, 6s. to 7s. per cwt. With better weather, heavy supplies of home-grown will come forward, that would cause prices to lower. *J. B. Thomas.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	7 0	Lemons, per case	12 0	20 0
— Tasmanian, case	15 0	20 0	Melons, each	1 6	3 0
Cherries, ½-sieve	2 0	10 0	Peaches, dozen,	2 0	10 0
Currants, red, ½-sieve	3 3	3 9	Pine-app'es, St. Michael, each	2 0	6 0
— black, ½-sieve	5 3	6 0	Strawberries, lb.	0 2	0 9
Grapes, lb.	1 6	3 0			

SEEDS.

LONDON: *July* 9.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, write that buyers were absent from to-day's Seed Market. For Trefoil there has been some speculative inquiry, and prices, owing to the bad weather, exhibit a further substantial advance. White Clover seed, also for the same reason, is likewise firmer. There is a somewhat improved demand for sowing Mustard and Rape seed. No change can be noted in either Canary or Hemp seed. Blue Peas keep steady. The Board of Trade returns, just published, give the following figures:—Imports of Clover and grass seeds for six months ending June 30, 1890: 259,33 cwt., value £530.257, against 182,630 cwt., value £400,086, for the corresponding first half of 1889.

CORN.

Averages.—Official statement of the average price of British corn, imperial measure, for the week ending July 5:—Wheat, 32*s.* 6*d.*; Barley, 22*s.* 8*d.*; Oats, 19*s.* 10*d.* For the corresponding period last year:—Wheat, 28*s.* 4*d.*; Barley, 20*s.* 9*d.*; Oats, 19*s.* 7*d.*

FRUIT AND VEGETABLES.

STRATFORD: *July* 9.—The supply has been good during the past week, and a fair trade done. Cabbages, 2*s.* to 3*s.* per tally; Turnips, 2*s.* to 3*s.* per dozen bunches; Mangels, 12*s.* to 17*s.* per ton; Onions, Egyptian, 7*s.* to 8*s.* per cwt.; Watercress, 7*d.* per dozen; Gooseberries, 5*s.* to 6*s.* per flat; Black Currants, 4*s.* 6*d.* to 5*s.* 6*d.* per half-sieve; do. 4*s.* to 5*s.* do.; Tomatos, 8*d.* to 9*d.* per box; Cherries, English) 5*s.* to 5*s.* 6*d.* per basket; do. foreign, 3*s.* to 3*s.* 6*d.* do.; Strawberries, 2*s.* to 2*s.* 6*d.* per peck; Carrots, 3*s.* to 3*s.* 6*d.* per dozen bunches; Mint, 2*s.* to 3*s.* do.; Cucumbers, 2*s.* to 3*s.* do.; Pine-apples, 9*d.* to 1*s.* each.

POTATOS.

BOROUGH AND SPITALFIELDS: *July* 8.—Quotations:—New: Jersey and French Flukes and Kidneys, 120*s.* to 140*s.*; do. Rounds, 100*s.*; Myatts', 120*s.* to 170*s.*; Hebrons, 100*s.* to 120*s.* per ton. Old: Magnums, Scotch, 60*s.* to 80*s.*; Lincolns, 60*s.*; Essex and Kent, 50*s.* to 55*s.* per ton.

Obituary.

JOHN STEWART.—The Royal Caledonian Horticultural Society lost one of its oldest and most faithful supporters by the death of John Stewart, Esq., who for twenty-five years acted as secretary to the Society, and whose kind, genial manner, made for him a host of friends. The deceased was seventy-six years of age, and was interred in the beautiful cemetery of Inveresk, a few miles from Edinburgh, on July 4. About 150 friends and horticulturists paid their last tribute of respect by following him to his grave.

NOTICES TO CORRESPONDENTS.

***** We regret that, owing to pressure on our space, several Show Reports, and other articles, have been crowded out of this week's issue.**

CUCUMBERS SEEDING: *B.* We often hear of these plants producing few seeds in the fruits. This is not a matter for surprise when seed is expected to be produced in the late fruits, that is, after the plant has been severely taxed by a long course of cropping; and, even if some amount of seed is obtained from these exhausted plants, it is not always of good germinating power. In the summer season, fertilisation of female blossoms is brought about by wind and insects, but in the close, steamy atmosphere of the winter forcing-pit, artificial impregnation is desirable, and all fruits intended for seeding purposes should have their blossoms so set at any time of the year, and this operation should not be deferred till the plants are exhausted by fruiting.

DRACÆNA: *L. F.* A fungus, which we will endeavour to name for you. Try dusting with sulphur.

FLORIST: *J. B., Adelaide.* Yes, the same.

GAS-LIME AND WIREWORM: *Holmby.* Fresh gas-lime cannot be used whilst crops are on the land, as the sulphuret present in that substance would kill insects and plants as well. Strew it rather thickly over the land early in winter, and plough or dig it in; and if seeds are going to be sown on the land late in the following spring—as, for instance, Turnips and Mangolds—or Cabbages planted, a slight top-dressing of gas-lime may follow the ploughing, &c. Fifty bushels per acre, ploughed or dug in, is not too much—that is, rather less than 1 bushel to 3 square rods. If the land is under grass, pare and burn first.

HUFFCAP: *J. W.* Many thanks. It is in hand.

HUMEA: *G. P. D.* Humea elegans is sometimes attacked by a fungus similar to that which destroys the Potato, and is difficult of cure. Get some clean young plants, and grow them in a greenhouse pit or cool frame for the summer, and winter them in a warm greenhouse. Burn every vestige of diseased plants, and the soil they grew in.

CUCKOO SPIT: *S. H.* This white, frothy liquid, is secreted by the larvæ, or grubs, of the frog-hopper (Aphrophora spumaria), an insect allied to the green-fly, or aphis. The object of the secretion is



FIG. 11.—THE CUCKOO SPIT INSECT.

to protect the insect, which dies from exposure if the fluid be removed; hence, by brushing the fluid away when the sun is shining, the insect is killed. It does mischief by sucking the juices of the plant. It derives its name of frog-hopper from the surprising leaps it takes in the air when touched.

INSECTS: *W. H. R.* The insects which have renewed their attacks in the cottage alluded to, destroying a wicker-basket, eating a woollen rug and other articles, are the small longicorn beetle (Obrium minutum). The rooms should be well fumigated with brimstone, carefully closing all crevices. This, renewed two or three times, would destroy them. *I. O. W.*

LONDON PURPLE: *H. B. P.* If not too strong, it would not injure the Vines after the Grapes are cut. It is used with a syringe, but as it is a violent poison, it must be used with greatest care. Try a weak solution first.

MUSHROOM SPAWN: *J. Brock & Son, U.S.A.* If you will get *Mushrooms for the Million*, by Mr. J. Wright, price 1*s.*, 171, Fleet Street, London, E.C., you will there find all that you want to know.

NAMES OF PLANTS: *W. S.* Rhamnus carolinianus? Philadelphus (material too bad to determine); Cratægus orientalis; Spiræa canescens.—*W. L.* Gloriosa Plantii.—*Henry Fisher.* 1, Taxodium distichum; 2, Robinia pseudocacia var.; 3, Paulownia imperialis; 4, Ailanthus glandulosa.—*G. S.* 1, Campanula (next week); 2, Potentilla, garden var.; 3, Veronica (next week); 4, Ranunculus acris, double; 5, Lysimachia vulgaris; 6, Veronica (next week).—*J. K.* We cannot undertake to reply by post; 1, Deutzia crenata; 2, Bromus sterilis; 3, Tsuga canadensis (Hemlock Spruce); 4, Abies grandis. Thank you for sending good specimens. Oh, that all our correspondents were as reasonable! *P. J.* 1, yellow Composite (next week); 2, Malva moschata, white-flowered var.; 3, Sedum Kamschatikum; 4, Lysimachia nummularia, golden-leaved form; 5, Sedum (next week); 6, Œnothera (next week). Many thanks. We are always desirous to oblige, but the demands on our time necessitate our making restrictions.—*R. T.* 1, Tsuga canadensis; 2, Picea morinda; 3, Abies nobilis; 4, Cryptomeria japonica; 5, Picea orientalis; 6, Abies magnifica.—*T. W. E.* 1, Pernettya mucronata; 2, Campanula garganica; 3, Kalmia angustifolia.—*J. R.* Astrantia helleborifolia, from the Caucasus.—*W. J. D.* Cistus ladaniferus; 1, Glaux maritima; 2, Phleum arenarium; 3, Trifolium arvense; 4, Arenaria peploides; 5, Lychnis diurna; 6, Atriplex portulacoides; 7, Statice limonium; 8, Spergularia marina; 9, Sedum acre.—*J. C. W. & S.* 1, Thalictrum aqueligifolium; 2, Veratrum nigrum; 3, Spiræa Ulmaria.—*R. M.* Stanhopea saccata.—*Ferii.* 1, Zephyranthes atamasco; 2, Asplenium flabellifolium; 3, Malva lateritia; 4, Heliotropium peruvianum; 5, Daphne Mezereon; 6, Acalypha tricolor.—*W. T. O.* Epidendrum fragrans, very fine specimens; Promenæa stapelioides; Odontoglossum læve.—*Taplow.* Some species of Kennedya—cannot say which, in the absence of flowers.

NEW GUINEA: *H. G.* (1), The vegetation differs materially in different localities. The mountain vegetation is not unlike that of Australia. The low-land flora is Malayan in character. Baron von Mueller has published several papers on the Flora of the island, as you will see by looking to our back numbers. The reason more is not known is, that the country is very partially explored as yet. (2), Yes; several have been already imported, and no doubt there are more to come; but the climate is frightful, and the natives do not altogether appreciate the visits of the collectors.

NUMBER OF PEACHES PER SQUARE FOOT OF WALL SURFACE COVERED WITH BEARING WOOD: *P. C.* Weakly or aged trees will carry one fruit to every 1½ foot; vigorous trees, one per square foot, or less space if much wood is at the same time likely to be produced. Trees recently planted should be rather lightly cropped, unless the removal has been very carefully and early performed. There is no hard-and-fast rule.

PASSIFLORA×: *C. W.* Curious and pretty, very free-flowering, but not so good as either parent. We will examine and report further.

PLANTS FOR TWO WALLS FACING SOUTH, NEAR HULL: *T. C. K.* Magnolia grandiflora, Lonicera flexuosa aurea—variegata, Banksia roses, Euonymus radicans, Garrya elliptica, Myrtle, the large-leaved species; Jasminum revolutum, Smilax aspera, and others; Berberis Darwinii, B. stenophylla, Ceanothus azureus, and many others; Cotoneaster microphylla, C. Simonsii, Escallonia macrantha, and E. Phillipiana. You might try Ruscus racemosus, the Alexandrian Laurel.

PORTABLE BOILER: *J. P.* There used to be a nice portable boiler made by Burbage and Healy, which may still be known in the copper-boiler trade; ask Pontifex & Co., Shoe Lane, E.C. One in cast iron, in shape like a coffee pot, was made by Messrs. Jones, iron merchants, Upper Thames Street.

RHODODENDRONS: *W.* R. hybridum, except the earliest; R. Catawbiense and some alpine species. These were in bloom in and about London at the end of June, and in the Midlands they would be later.

STRAWBERRY: *W. J. J.* Smashed during transit—unrecognisable.

CATALOGUES RECEIVED.

E. H. KRELAGE & SON, 17 to 27, Kleinen Houtweg, Haarlem, Holland—Wholesale General Catalogue.

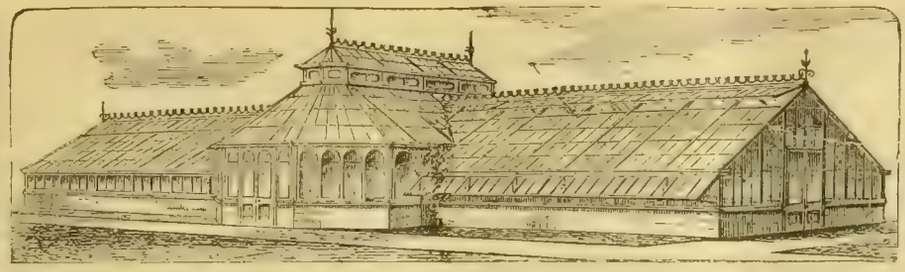
ANT. VAN. VELSEN & Co., Haarlem, Holland—Wholesale Catalogue of Dutch and Cape Bulbs, &c.

ANT. ROOZEN & SON, Overveen, near Haarlem, Holland—Dutch and Cape Bulbs.

THOMAS METHVEN & SONS, 15, Princes Street, Edinburgh—Bulbs and Spring Flowering Roots.

COMMUNICATIONS RECEIVED.—H. E.—Dr. K., Vienna.—C. & F.—F. W. B. (letter will follow anon).—T. H. S., Oodeypore.—Photo.—J. B. (not received).—P. L. S.—Dr. M.—Dr. J. McF.—A. M. J.—J. L. & Sons.—C. S.—H. J. C.—P. J.—G. S.—G. P. D.—N. E. B.—W. R.—A. Planter.—R. W. A.—J. Smythe.—J. D.—A. D.—J. S.—H. Evershed.—R. A. R.—H. James.—E. Gilman (many thanks for report).

Five 1st Prize Medals recently awarded in open competition.



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LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, **25s.**; sacks, **4d.** each.

BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, **22s.**; sacks, **4d.** each.

COARSE SILVER SAND, 1s. 9d. per bushel; **15s.** per half ton; **26s.** per ton, in 2-bushel bags, **4d.** each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.

SPHAGNUM MOSS, 8s. 6d. per sack.

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London, Wholesale Agents:—Messrs. CORRY, SOPER, FOWLER & CO. (Limited), Finsbury Street Messrs. HOOPER & CO. (Limited), Covent Garden.

May also be had of Messrs. BARR & SON, 12, King Street, Covent Garden; BARCLAY & SONS (Limited), 95, Farringdon Street; JAS. VEITCH & SON, Royal Exotic Nursery, Chelsea; and others.

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The GARDENERS' CHRONICLE *says:*—"The 'PERFECT' WEED KILLER I have tried with very good results. . . . Weed Killer should be used annually on every drive, walk, courtyard, and similar area which is near to grassland."

Maintains its Superiority over all Rivals

for permanently destroying vegetation on Walks, Carriage Drives, Ash Tennis Courts, Stonework grown green, &c.

Used at Kew Gardens, Royal Horticultural Gardens, &c., &c.

COMPLETE SATISFACTION GUARANTEED

to all using WEED KILLER bearing our Trade Mark, without which none is genuine. *Refuse Imitations.*

PRICE—Gallon, 2/-; 5 gal., 1/9 per gal.; 10 gal. 1/6 per gal.; 40 gal. 1/4 per gal. SPECIAL QUOTATIONS FOR QUANTITIES. Carriage paid on 10 gals. and upwards.

Used in the proportion of 1 gallon to 25 gallons of Water.



DISTRIBUTOR for "Perfect" Weed Killer.

Holds 40 gallons. Wrought-iron frame-work neatly painted. Galvanized tubes with tap to regulate flow. Gives spray 36 in. wide. Price £4 net on rail Glasgow.

SOLE MANUFACTURERS: THE

HORTICULTURAL & AGRICULTURAL CHEMICAL COY.

Works: 97, Milton Street, Glasgow.

Principal Agents: BLACKLEY, YOUNG AND CO., 103, Holm Street, Glasgow.

NOTICE.—*We originally had our Works at Tonbridge, Kent, but removed them to* **GLASGOW** *in January, 1887, since which time our* **ONLY ADDRESS** *has been* **GLASGOW.**

SOLD BY SEEDSMEN AND FLORISTS.

BROWN FIBROUS PEAT for ORCHIDS, 31s. 6d. per Ton, or 12s. per Truck of 4 tons; Bags, 5s. each; 10 Bags, 45s.

BROWN and BLACK FIBROUS PEAT, 25s. per Ton, or £5 per Truck of 4 Tons. Bags, 5s. each; 10 Bags, 45s.

PEAT for forming Rhododendron, Bog, and American Plant Beds, 21s. per Ton, or £4 4s. per Truck of 4 tons.

THOMAS WALKER, Tekels, Camberley, Surrey.

ORCHID PEAT, best quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. RHODODENDRON and AZALEA PEAT. Samples and Prices to WALKER AND CO., Farnborough, Hants.

GENUINE GARDEN REQUISITES, as supplied to the Royal Gardens.
RUSSIA MATS—New Archangel, 9 ft. 4 ins. by 4 ft. 6 ins., 20*s.* doz.; Heavy Petersburg, 7 ft. by 3 ft. 8 ins., 12*s.* doz. SPECIALITE TOBACCO PAPER, 10*d.* per lb., 28 lb. for 21*s.* TOBACCO CLOTH, 1*s.* per lb., 28 lb. for 26*s.* ORCHID PEAT, 8*s.* per sack. PEAT, LOAM, SAND, MANURES, and SUNDRIES. Price List free. — W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

GARDEN REQUISITES.
TWO PRIZE MEDALS.
Quality, THE BEST in the Market. (All sacks included.)
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* 4*d.* each; 10 sacks, 12*s.* 6*d.*; 15 sacks, 17*s.* 6*d.*, 20 sacks, 20*s.*; 25 sacks, 24*s.*; 30 sacks, 27*s.*; 40 sacks, 35*s.*; 50 sacks, 40*s.*; Truck-load, loose, free on rail, 30*s.*
GENUINE ORCHID PEAT, 8*s.* 6*d.* per sack; 5 sacks, 40*s.* BEST BROWN FIBROUS PEAT, 5*s.* per sack; 5 for 22*s.* 6*d.* BLACK FIBROUS PEAT, 4*s.* 6*d.* per sack; 5 for 20*s.* COARSE SILVER SAND, 1*s.* 6*d.* per bushel; 14*s.* half ton; 24*s.* per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1*s.* per bushel. Tobacco Paper, 1*s.* per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, Shell Shingle, Charcoal, Mushroom Spawn, and Russia Mats.
GARDEN NETTING, 2 yards wide, 1½*d.*, or 100 yards, 10*s.*; 4 yards wide, 3*d.*, or 100 yards, 20*s.* SCRIM CANVAS, 1 yard wide, 3*d.*, 2 yards, 6*d.* per yard. TIFFANY, 38 in. wide, in 20 yard pieces, 3*s.* 6*d.* per piece.
BAMBOO CANES, 3 feet 10 in., 3*s.* 6*d.*, 5*s.*, and 7*s.* per 100; extra long, 5*s.* per dozen.
DAHLIA STAKES. and all kinds of Flower Sticks, Cheapest in the Market. Marquees, Tents, Flags, and all kinds of Garden Tools and Sundries.
Terms strictly Cash with order. Price LIST on application from
CHUBB, ROUND & CO., West Ferry Road, Millwall, London, E. *Bankers—Smith, Payne, & Smiths.*

THE COMING FUMIGATING MATERIAL.
Tobacco Paper Entirely Superseded.
Tobacco Paper is disagreeable, unsafe, and uncertain.
CAMPBELL'S FUMIGATING INSECTICIDE
is cheaper, more effectual, perfectly safe, and unquestionably the coming Fumigating Insecticide. Numerous testimonials to this effect:—
"Please send me —— rolls of Campbell's Fumigating Insecticide to the above address. I like it much better than Tobacco Paper."
In rolls, post-free, for houses of a capacity of—
100 cubic ft., 8*d.* 500 cubic ft., 1/-. 1000 cubic ft., 1/3. 2000 cubic ft., 2/3.
OR FROM YOUR SEEDSMAN.
CLIBRAN'S, Oldfield Nurseries, Altrincham; also 10 and 12, Market Street, Manchester.

"Always use the best materials; your plants can not do well in common soil."
SPRING POTTING.
1 sack BEST LEAF MOULD, 3*s.* 6*d.*; 1 sack PEAT, 3*s.* 6*d.*; 1 sack YELLOW FIBROUS LOAM, 3*s.* 6*d.*; 1 sack BEALE'S CONCENTRATED FARM-YARD MANURE, 6*s.*; 1 cwt. COARSE SILVER SAND, 3*s.* 6*d.* Or, 1 sack Mixture of above to suit any purpose, 5*s.* Over 10*s.* value, free delivery by Carter Paterson, or to rail. Send 6*d.* extra for sack.
New Importation.
BAMBOOS and CANES.
SPECIAL FOR CHRYSANTHEMUMS (see samples at Royal Aquarium and other shows this month), in 5, 6, 7, 8, and 9 feet lengths. Thin quality with tips at 5*s.* 6*d.*, 7*s.* 6*d.*, 9*s.* 6*d.*, 11*s.* 6*d.*, and 13*s.* 6*d.* per 100. Very stout at 11*s.*, 15*s.*, 19*s.*, 23*s.*, and 28*s.* per 100. Can be ordered through any Seedsmen or Florist, or direct from the importers: R. BEALE AND CO.
Suitable sizes for ROSES, DAHLIAS, HOLLYHOCKS, CARNATIONS, BEGONIAS, TOMATOS, &c., from 1 foot, 1*s.* per 100; 1 ft. 6 in., 1*s.* 6*d.*; 2 ft., 2*s.*; 2 ft. 6 in., 2*s.* 6*d.*; 3 ft., 3*s.*; 3 ft. 6 in., 3*s.* 6*d.*; 4 ft., 4*s.* per 100.
SOLID HARD CANES, colour of ROSE STOCKS, very heavy, 3 ft., 3*s.* 6*d.*; 4 ft., 4*s.* 6*d.* per 100.
VERY STOUT HARD BAMBOOS, hollow at the ends, and can be jointed with thin canes so as to make 6, 7, and 8 feet lengths, 3 ft., 3*s.* 6*d.*; 4 ft., 4*s.* 6*d.* per 100.
OPEN AIR MUSHROOMS.
SPAWN for meadows, lawns, and paddocks. By following our directions and using our SPECIAL MEADOW SPAWN, excellent crops may be gathered through the summer and autumn. Price 5*s.* per bushel. 1*s.* extra for sack and carriage.
R. BEALE AND CO.,
NEW SOUTHGATE, LONDON, N.
Contractors to the London County Council.

CLIBRAN'S SPECIAL GARDEN SUNDRIES
LEMON OIL INSECTICIDE. Owing to its efficacy, cheapness, and safety—even in the hands of the most careless operator, this preparation is now looked upon by most practical horticulturists as the best Insecticide for dipping or syringing. Post-free—pints, 1*s.* 10*d.*; quarts, 3*s.* 3*d*; half-gallons, 5*s.* 9*d.*
EUCHARIS MITE KILLER. This has proved itself a boon to many Eucharis growers. By its aid all may grow this favourite flower free from that dreadful pest "The Eucharis Mite." Testimonials free on application. Post-free—half-pints, 1*s.* 9*d.*; pints, 2*s.* 9*d.*; quarts, 4*s.* 9*d.*; half gallons, 8*s.*
N.B.—ABOVE POST-FREE, OR FROM YOUR SEEDSMAN.
CLIBRAN'S Oldfield Nurseries, Altrincham
Also 10 and 12, Market Street, Manchester.

CERTAIN SUDDEN DEATH
To all Grubs, Aphis, Lice, Red Spider, Thrip, Mealy Bug, Caterpillars, &c., &c
PERFECTLY HARMLESS to the Hands and Skin, but will cure Ringworm in Animals, and all diseases produced by parasites.
FIR TREE OIL
(SOLUBLE) INSECTICIDE
A combination of Hydrocarbon Oils, made soluble in Water, for destroying ALL INSECTS & PARASITES that infest Trees and Plants, whether at the Roots or on the Foliage.
Sold by Seedsmen and Chemists, 1*s.* 6*d.*, 2*s.* 6*d.*, & 4*s.* 6*d*; ½ gallon 7*s.* 6*d.*, 1 gallon 12*s* 6*d.*, or less in larger quantities.
A Treatise on FIR TREE OIL as an INSECTICIDE, its application to Plants and Animals, sent Post free on receipt of address, by the Manufacturer,
E. GRIFFITHS HUGHES, Manchester.
Wholesale: HOOPER & Co.; CORRY, SOPER, FOWLER & Co.; C. E. OSMAN & Co.; and from all the London Seed Merchants and Wholesale Patent Medicine Houses. NEW YORK—ROLKER & SONS.

HUGHES' FIR TREE OIL SPRAY PUMP

HUGHES' FIRTREE-OIL SPRAY PUMP PRICE 25/-
Throws a fine spray 20 ft., and a jet 30 ft., with great force.
A splendid substitute for the Syringe for using Insecticide, Price 25s. A larger size for watering purposes, 45s.
Carriage Paid.


HUGHES' APHICIDE
1/6 Post Free 1*s.* 8*d.*
Directions with each.
For Glass Houses, HUGHES' GREEN & CREAM COLOR SHADING
Convenient, Inexpensive—Easily applied—Lasts all the Summer, and can then be easily washed off. 1*s.*, post 1 3.
For Fixing Bloom of Azaleas, &c., and for Cut Flowers. HUGHES' FLORAL CEMENT.
A great boon to Florists and all lovers of Flowers. Dries instantly. Sold in bottles, 1*s.* & 2*s.* Per Post 3*d.* extra.
HUGHES' STYPTIC
For Preventing Vines Bleeding after Pruning.
Very effectual in preventing the flow of sap in Vines being wasted. In bottles, 1 6 and 2 6. Per post, 3*d.* extra.
For Destroying Beetles, Cockroaches, Crickets, Bugs, Fleas, Mosquitos, &c. HUGHES TROPICAL BEETLE POWDER
Most effectual in Greenhouses—for Animals and Bed Clothing. Price, 6*d.*, 1*s.* & 2 6. Per post 3*d.* extra.
E. GRIFFITHS HUGHES *OPERATIVE CHEMIST.*
VICTORIA & CATEATON STREET, MANCHESTER.

SLUGICIDE (Registered).—Certain death to Slugs; Fertiliser to Soil, perfectly harmless to plant, vegetable, and animal life. Delicate Seedlings are absolutely secure if sprinkled with Slugicide. Price 1*s.* 6*d.*, post-free.—The SLUGICIDE CO., 6, Mary-le-port St., Bristol, and all Seedsmen.

MACKEY'S CATERPILLAR EXTERMINATOR and UNIVERSAL INSECTICIDE, as recommended by the Board of Agriculture, for Green and Black Fly, Mealy-bug, Red-spider, Camellia-scale, Blight, &c. No boiling or mixing required. One pound dissolved in 10 gallons will form the Exterminator for Caterpillars, as recommended by the Board of Agriculture; 1 lb. to 300 for Greenfly, Blight, &c. Price, in 1 lb. tins, 1*s.* 6*d.*; 5 lb., 3*s.*; 10 lb., 5*s.*; per cwt., 45*s.* Sample gratis on application.
MACKEY, MACKEY AND CO., 1 and 2, Bouverie Street, Fleet Street, London, E.C.

BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1*s.*, 2*s.* 6*d.*, 5*s.* 6*d.*, and 10*s.* 6*d.* each, or 1 cwt. Bags, sealed, 13*s.* By all Seedsmen, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

NORMAL FERTILISER
For GREENHOUSE or GARDEN.
Price:— 7 lb. 2*s.* 14 lb. 3*s.* 6*d.* 28 lb. 5*s.* 6*d.* 56 lb. 9*s.* 1 cwt. 14*s.*
And in 6*d.* and 1*s.* packets.
To be had of Seedsmen and Florists, or the NORMAL MANURE COMPANY, Ltd., 121, Bishopsgate Street Within, E.C., and Farnham Road, Guildford. Usual Trade Discounts.
Wholesale of Messrs. HURST AND SON, 152, Houndsditch, London

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.*, from the Trade, Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

CHEAP FRAMES.

PORTABLE CUCUMBER FRAMES.
R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.
Prices, delivered free to any station in England:

		£	s.	d.
1-light frame, 4 ft. by 6 ft.	Carriage and Packing Cases FREE.	2	0	0
2-light frame, 8 ft. by 6 ft.		3	2	6
3-light frame, 12 ft. by 6 ft.		4	15	0
6-light frame, 24 ft. by 6 ft.		8	10	0

Larger sizes at proportionate prices.
R. HALLIDAY & CO.,
Hothouse Builders and Engineers, Royal Horticultural Works,
Middleton, Manchester.
London Agent—Mr. H. SKELTON, Seedsman, &c., 2, Holloway Road, N.

GET YOUR HEATING APPARATUS
FIXED in PITS, FRAMES, GREENHOUSES, &c., before cold weather and the busy season sets in. Our GAS and OIL BOILERS are patented, and are unequalled in economy of Gas or Oil.
Illustrated CATALOGUES and Estimates free. All Goods guaranteed.
C. TOOPE AND SON, Stepney Square, High Street, Stepney, London, E.

NETTING — NETTING — NETTING.—For Lawn Tennis Courts, 100 yards long, 2 yards wide, 8*s.*; 100 yards long, 3 yards wide, 12*s.*; 100 yards long, 4 yards wide, 16*s.*; 100 yards long, 5 yards wide, 20*s.*; these Nets can be sent on approval, carriage paid. Note the address—
GEORGE ROBINSON, Net Merchant, Rye, Sussex.

EXTRA Strong Tanned NETTING, 50 yards by 4 yards, 8*s.* per net; 100 yards by 2 yards, 8*s.* per net. RAFFIA GRASS, 7*d.* per lb.
J. W. WILLCOCKS, 14, St. Mary's Street, Stamford.

Now is the best time to take your winter supply of
ANTHRACITE COAL
The Best and Cheapest Fuel for use in GREENHOUSE BOILERS, STOVES, and HEATING APPARATUS generally being the **HENDREFORGAN ANTHRACITE COAL.**
Absolutely Smokeless. Specially sized for these purposes.
United Anthracite Collieries, Ld., 23, Lime St., London.

BONES! BONES! BONES!

CRUSHED BONES in all sizes, for **VINE BORDERS, LAWNS, POTTING, GRASS LANDS, &c.**

Also BONE MEAL for POULTRY FEEDING.

GARDEN GUANO, DISSOLVED BONES, SPECIAL MANURES and FERTILISERS for all purposes.—For prices apply to

HARRISON, BARBER & CO., Limited,
GARRATT LANE, WANDSWORTH, SURREY.
AGENTS WANTED — AGENTS WANTED.

ESTABLISHED 1818.

55, LIONEL STREET, BIRMINGHAM.

HENRY HOPE

HORTICULTURAL BUILDER and HEATING ENGINEER.

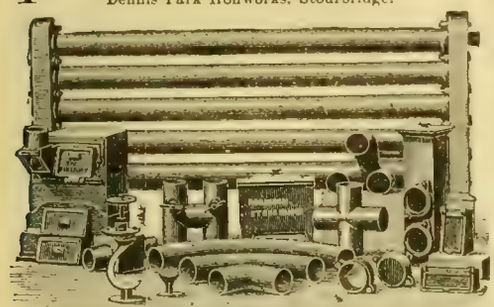
NEW CATALOGUE of Greenhouses & Garden Frames, just issued, will be sent, post-free, to any address, on reference to this advertisement.



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SEND FOR NEW PRICED ILLUSTRATED CATALOGUE.

THOS. W. ROBINSON,
Dennis Park Ironworks, Stourbridge.

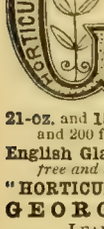


EXPANSION JOINT HOT-WATER PIPES.
SOCKET HOT-WATER PIPES.
Illustrated revised Price List on application, free.

HORTICULTURAL GLASS

STOCK SIZES		SHEET GLASS SIZES	
Inches.		Inches.	
14×12		20×15	
16×12		20×16	
18×12		22×16	
20×12		24×16	
16×14		20×18	
18×14		22×18	
20×14		24×18	

21-oz. and **15-oz. Foreign,** of above sizes, in boxes of 100 feet and 200 feet super.
English Glass, cut to buyers' sizes, at lowest prices, *delivered free and sound* in the country, in quantity.
"HORTICULTURAL PUTTY." Own Special Manufacture.
GEORGE FARMILOE & SONS,
LEAD, GLASS, OIL, and COLOUR MERCHANTS,
34, St. John Street, West Smithfield, London, E.C.
Stock Lists and Prices on application. Please quote *Chronicle.*



CONWAY C. WARNE
(Successor to JOHN MATTHEWS),
Royal Potteries, Weston-super-Mare,
FOR
FLOWER POTS,
AND
HORTICULTURAL POTTERY
of all descriptions.

GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Raffia, Mats, Bamboo Canes, Rustic Work, Manures, &c. Cheapest Prices of WATSON AND SCULL, 90, Lower Thames Street, London, E.C.

PAINT TRY LEETE'S 2½ Per ON IRON, WOOD & STONE ALL COLORS CASH 2½lb
A. LEETE & Co PAINT WORKS, 129 LONDON Rd SE



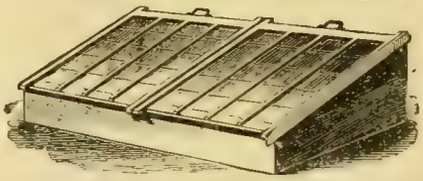
To Nurserymen, Seed Merchants, and Florists.
J. BLACKBURN AND SONS are offering Archangel Mats lower than any other house in the trade; also Petersburg Mats, and Mat Bags, Raffia Fibre, Tobacco Paper, and Shading. Prices free.—4 and 5, Wormwood Street, E.C.

PROTECT YOUR GARDENS from the Ravages of Birds.—Strong NETTING supplied by G. Robinson at 3*d.* square yards for 1*s.*; is oiled and dressed; will not rot if kept out in all weathers; sent any width; carriage paid on all orders over 5*s.*; can be sent on approval; hundreds of testimonials. Read the following:—"Broadstairs, Kent, May 12, 1889. To my fellow-gardeners,—I have had Garden Netting from G. Robinson, Fish Merchant, Rye, Sussex, and it gave me great satisfaction.—Yours truly, G. HAWKINS, Gardener to S. E. Wyatt, Esq." Commoner Netting at 50 square yards for 1*s.*
GEORGE ROBINSON, Fish Merchant, Rye, Sussex.

HY. VAN & CO.,
25, Tooley Street, London Bridge, S.E.
PROTECTION for FRUIT and FLOWERS.
GARDEN NETTING, 2 yards wide, 1½*d.*, or per 100 yards, 10*s.*; ditto, 4 yards wide, 3*d.*, or per 100 yards, 20*s.*
SCRIM CANVAS, 1 yard wide, 3*d.*, and 2 yards, 6*d.* per yard.
TIFFANY, 38 inches wide, in 20 yard pieces, 3*s.* 6*d.* per piece.

BOULTON & PAUL,

HORTICULTURAL BUILDERS, **NORWICH.**



No. 75.—MELON & CUCUMBER FRAMES

A large stock of these always ready. Made of good red deal. The lights are 2 inches thick, with iron bar across, and one handle at the top. Glazed with 21-oz. English sheet glass, and painted three coats.

		Length.	Width.		
1 Light	Frame,	4 ft.	by 6 ft.	Cash Prices, Carriage Paid.	£2 0 0
2	,, ,,	8 ,,	by 6 ,,		3 0 0
3	,, ,,	12 ,,	by 6 ,,		4 5 0
4	,, ,,	16 ,,	by 6 ,,		5 10 0
5	,, ,,	20 ,,	by 6 ,,		6 15 0
6	,, ,,	24 ,,	by 6 ,,		8 0 0

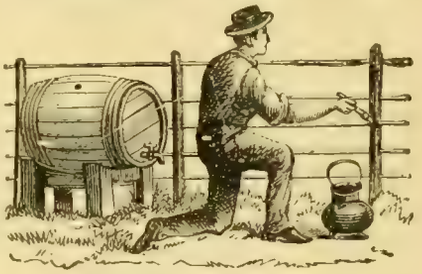
CARRIAGE paid to any goods station in England and Wales. Also to Dublin, Cork, Glasgow, and Edinburgh, or stations equivalent.

CUCUMBER FRAME LIGHTS.
6 ft. by 4 feet glazed and painted ... 15*s.* each.
Unglazed and unpainted ... ... 6*s.* each.
Carriage Paid on Orders of 40*s.* value.

SURVEYS MADE, and every description of Horticultural Buildings and Appliances fixed by experienced workmen in any part of the kingdom.

CATALOGUES of all our manufactures, including CONSERVATORIES, GREENHOUSES, FRAMES, BOILERS, HORTICULTURAL IMPLEMENTS, IRON BUILDINGS, POULTRY and KENNEL REQUISITES, IRON FENCING, WIRE NETTING, &c.

HILL & SMITH'S
BLACK VARNISH
for Preserving Ironwork, Wood, or Stone.



(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.
Price 1*s.* 6*d.* per gallon at the manufactory, or carriage-paid to any railway station, 1*s.* 8*d.* per gallon in casks of 36, 18, or 9 gallons.

CAUTION.—Every Cask bears the above Registered Trade Mark. Beware of cheap imitations.

HILL & SMITH,
Brierley Ironworks, Dudley;
118, Queen Victoria Street, London, E.C.;
47, Dawson Street, Dublin.

STEEL FENCING WIRE
of all kinds, Barb Wire, Hay Bands, Wire Netting and Fencing Materials. Wood's Patent Wire Mattresses.
Send for Price Lists to the
LONGFORD WIRE, IRON and STEEL COMPANY, Ltd., WARRINGTON.

Protect your Fruit Trees and Seeds.
EXTRA STRONG TANNED NET, 4 yards wide, 3*d.* per yard; or 2 yards wide, 10*s.* per 100; 4 yards wide, 20*s.* per 100 yards. New TWINE NETTING, 1 yard wide, 2*d.* per yard; 2 yards wide, 4*d.* per yard; 4 yards wide, 8*d.* per yard. COTTON NET, nine meshes to square inch, 1½ yard wide, 7*d.* per yard run.
W. CULLINGFORD, 127, Field Road, Forest Gate, E.

YOUNG WOMEN who WANT TO BE INDEPENDENT, and make their own way in the world, should write for a Prospectus of the SCIENTIFIC DRESS CUTTING ASSOCIATION, 272, Regent Street, London, W. Situations for all Pupils at good salaries.

THE GARDENERS' CHRONICLE

Scale of Charges for Advertising.

Head Line charged as two.

4	Lines	..	£0	3	0	15	Lines	..	£0	8	6
5	„	..	0	3	6	16	„	..	0	9	0
6	„	..	0	4	0	17	„	..	0	9	6
7	„	..	0	4	6	18	„	..	0	10	0
8	„	..	0	5	0	19	„	..	0	10	6
9	„	..	0	5	6	20	„	..	0	11	0
10	„	..	0	6	0	21	„	..	0	11	6
11	„	..	0	6	6	22	„	..	0	12	0
12	„	..	0	7	0	23	„	..	0	12	6
13	„	..	0	7	6	24	„	..	0	13	0
14	„	..	0	8	0	25	„	..	0	13	6

AND SIXPENCE FOR EVERY ADDITIONAL LINE.

If set across two Columns, the lowest charge will be 20*s*.
If set across three Columns the lowest charge will be 30*s*.
Page, £8; Half Page, £4 10*s*.; Column, £3.

Gardeners and others Wanting Situations.
26 words, including name and address, 1*s*. 6*d*., and 6*d*. for every additional line (about 9 words) or part of a line.
THESE ADVERTISEMENTS MUST BE PREPAID.
This scale does not apply to announcements of Vacant Situations, which are charged at the ordinary scale.

IMPORTANT NOTICE.—Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the authorities and returned to the sender.

BIRTHS, DEATHS and MARRIAGES, 5*s*. each insertion.
Advertisements for the current week MUST *reach the Office by Thursday noon.*

All Subscriptions Payable in Advance.
THE UNITED KINGDOM: 12 Months, 15*s*.; 6 Months, 7*s*. 6*d*.; 3 Months, 3*s*. 9*d*.
FOREIGN (excepting India and China), including Postage, 17*s*. 6*d*. for 12 Months; India and China, 19*s*. 6*d*.
Post-office Orders to be made payable at the Post Office, 42, DRURY LANE, W.C., to W. RICHARDS.

PUBLISHING OFFICE and OFFICE for ADVERTISEMENTS, 41, Wellington Street, Strand, London, W.C.

NETTING for Tennis Bordering, 100 yards long, 3 yards wide, 10*s*; 100 yards long, 4 yards wide, 13*s*. I do not require payment till you have received and approved of the netting. Good colours and specially prepared. Carriage paid.
HY. JOHN GASSON, Net Merchant, Rye, Sussex.

ENTERTAINMENTS

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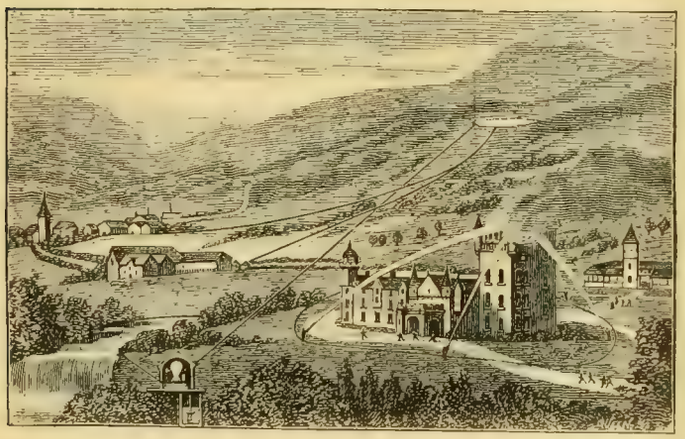
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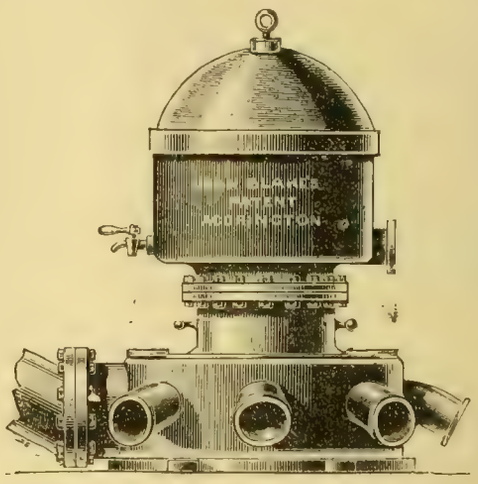
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Messrs. The Lancashire and Yorkshire Railway Company.
Henry Sandbach, Esq., Hafodunas, Abergele.

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Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position be guaranteed for advertisements occupying less space than an entire column.

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THE GARDENERS' CHRONICLE, Vol. VII., Third Series, JAN. to JUNE, 1890.
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SALTERHEBBLE and DISTRICT (Halifax) ROSE SHOW, THURSDAY, July 24. Schedules on application to JNO. E. BROOKS, Secretary.
4, Savile Park Street, Halifax.

WILMSLOW and ALDERLEY HORTICULTURAL SOCIETY.—The above Society will hold its SECOND ANNUAL SHOW in Hawthorn Hall Field, Wilmslow, on FRIDAY and SATURDAY, July 25 and 26 next. Schedule of Prizes (£140) on application.
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MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, July 24, at half-past 12 o'Clock precisely, a fine COLLECTION of ORCHIDS, chiefly in Flower and Bud, comprising some fine forms and specimens of Odontoglossums, Cattleya Mendelii, Cypripediums, Masdevallias, Dendrobiums, Oncidiums, &c.; also a SMALL IMPORTATION of DENDROBES in variety, and other EAST INDIAN ORCHIDS.

On view morning of Sale, and Catalogues had.

Tuesday Next, July 22.

900 ONCIDIUM TIGRINUM.
500 ODONTOGLOSSUM INSLEAYI.
500 ,, CITROSMUM.
700 ,, new species.

Just received in splendid condition direct from Mr. Pechacek, for absolute sale, Without Reserve.

MESSRS. PROTHEROE AND MORRIS will SELL the above extensive Importation of ORCHIDS by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, July 22, at half-past 12 o'Clock.

On view morning of Sale, and Catalogues had.

East Dulwich.—Orchids.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Seeger & Tropp to SELL by AUCTION, at their Orchid Nurseries, East Dulwich, on WEDNESDAY NEXT, July 23, at half-past 12 o'Clock precisely, the CONTENTS of TWO PRIVATE COLLECTIONS, recently purchased by them, supplemented by additions from their own stock, making a large and very varied selection of rare and valuable ORCHIDS, the whole affording a splendid opportunity to buyers, such as seldom occurs, and which will be sold absolutely without reserve. The Sale includes:—

Anectochilus
Cattleya Reineckiana
,, intricata maculata
,, Wagneri
Coelogyne Cummingi
Cypripedium robusticum
,, Kirchoffianum
,, Figaro
,, nitens superbum
,, Chlorops
,, Schroderæ
,, Hornianum
,, amabile
Vanda tricolor planilabris
,, cœrulea, ten fine specimens
Dendrobium nobile nobilius
,, ,, Cooksoni
Dendrobium nobile album
Echioglossum striatum
Lælia elegans irrorata
Lycaste Skinneri alba
Masdevallia, 110 different species and varieties
Odontoglossum aspersum violaceum
,, coronarium, perhaps the largest plant in cultivation
Sobralia virginalis
,, Warscewiczi
,, Xantholeuca
,, Cattleya, only three plants of this grand species are known to be in Europe

Messrs. SEEGER AND TROPP'S Orchid Nurseries are within 5 minutes' walk of East Dulwich Railway Station (L. B. and S. C. Railway), reached by frequent trains from London Bridge and Victoria. Plants will be on view the day previous and morning of Sale, and Catalogues obtained on the Premises; or of the Auctioneers, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.

Friday Next.—(Sale No. 1327.)

CATTLEYA GASKELLIANA.
ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, July 25, at half-past 12 o'Clock precisely, by order of Mr. W. Gordon, the Second and Final Portion of CATTLEYA GASKELLIANA, in the best possible condition, with plump leaves, sound and dormant eyes, and including some of the best plants ever imported into this country, of this lovely and very free-flowering Cattleya. The first 100 lots consist of specially selected masses, with from 10 to 50 bulbs each. Also, from other Vendors, an importation of various DENDROBIUMS, and 200 lots of ESTABLISHED ORCHIDS, amongst them several very fine plants of ONCIDIUM MACRANTHUM.

On view morning of Sale, and Catalogues had.

Special Sale.—Tuesday, July 29.

ORCHIDS in FLOWER.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SPECIAL SALE of ORCHIDS in FLOWER will take place as above, for which they WILL BE GLAD TO RECEIVE NOTICE OF ENTRIES AS EARLY AS POSSIBLE.

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To FLORISTS, NURSERYMEN, MARKET GARDENERS, and others.—By order of the Trustees.

MESSRS. PROTHEROE AND MORRIS have received instructions to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on THURSDAY, July 31, 1890, at 2 o'Clock precisely, the old-established long leasehold NURSERY, known as Wright's Nursery, 33A, Turner Road, Lee, containing an area of about 1 acre, and comprising 37 Span-roof and Lean-to Greenhouses, 8 Pits, also Potting and Packing Sheds, Coach House and Stabling, Cottage and Workshops, together with the Leasehold Residence, No. 17, Turner Road, and a plot of Land on the opposite side of the road, having a frontage of 289 feet, by a depth of 7 to 16 feet.

The Vines, Camellias, and Roses, planted out in the various Greenhouses, will be included in the purchase.

The property may be viewed. Particulars and conditions of Sale, with Plan, may be had on the Premises; at the Mart, E.C.; of Messrs. NEWTON AND NEWTON, Solicitors, 180, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Cut Flowers, Plants, and Bulbs.

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TO LET, or FOR SALE, by order of the MORTGAGEES, either as a whole, or in lots to suit Purchasers, the Valuable NURSERY, lately in the occupation of Mr. T. B. Morton, containing about 2 Acres, with Dwelling-House, Stable, Cart Shed, 7 Greenhouses, &c., all fitted up with the most modern appliances; well stocked with Fruit Trees, &c.—Offers will be received by

J. T. HALL, 44, High Row, Darlington.

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TO LET, on Lease, a well-known NURSERY and FLORIST'S BUSINESS, within 15 miles of London, all in good working order, containing 27 Greenhouses, a 9-room Dwelling-house, Stables, Office, Cottage, Sheds, and nearly 3 acres of Land; about 4½ tons Pipes, &c. The proprietors having accepted an important engagement sole reason of leaving.

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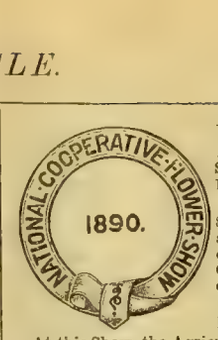
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KAISERIN FREDRICH, the bold, free, and globular white Dijon Tea. The above 2*s.* 6*d.* each.

PAUL AND SON, The "Old" Nurseries, Cheshunt.

ED. PYNAERT, NURSERYMAN, Ghent, Belgium, is now sending out his beautiful HYBRID ROCHEAS, described and figured in the *Gardeners' Chronicle*, February 22, 1890. Price 15*s.* the set of five distinguished varieties. Package and freight to all parts of Great Britain for cash with order.



FIFTH NATIONAL CO-OPERATIVE FLOWER SHOW, Crystal Palace, AUGUST 16, 1890.

Schedules now ready of over 825 Prizes, comprising Gold, Silver, and Bronze Medals, and £350 in cash; Special Prizes of Goods, Certificates, &c.; post-free on application to

EDWARD OWEN GREENING, Hon. Secretary.

At this Show, the Agricultural and Horticultural Association (Ld.), offer £150 for best produce grown from their reliable One and All Seeds. 3, Agar Street, Strand, W.C., and Creek Road, Deptford, S.E.

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Messrs. ADNITT AND NAUNTON, Hon. Secs.
The Square, Shrewsbury.

COLNBROOK and DISTRICT HORTICULTURAL SOCIETY.—The ANNUAL SHOW will be held at Richings Park, Colnbrook, by kind permission of Major Meeking, J.P. Several open classes. Entries close July 26. Schedules on application to

W. STENBLING, Hon. Sec., P.O. Colnbrook.

George Wright, Deceased.

Pursuant to the Act of Parliament 22nd and 23rd Victoria, chapter 35, intituled "An Act to further Amend the Law of Property and to relieve Trustees,"

NOTICE IS HEREBY GIVEN, that all Creditors and other persons having any Claims or Demands against the Estate of GEORGE WRIGHT, late of the "Royal Oak" Public House, Church Street, Lee, in the county of Kent, Licensed Victualler and Nurseryman, deceased (who died on the 10th day of April, 1883, and letters of administration of whose estate were granted by the Principal Registry of the Probate Division of Her Majesty's High Court of Justice on the 2nd day of June, 1890, unto HENRY CHARLES MOTT, of Westmoreland Lodge, Wisteria Road, Lewisham, Kent), are hereby requested to send the particulars in writing of their claims or demands to us, the undersigned, on or before the 9th day of August, 1890. After which date the said Administrator will proceed to distribute the assets of the said deceased among the persons entitled thereto, having only regard to the claims and demands of which he shall then have had notice, and he will not be liable for the assets of the said deceased, or any part thereof so distributed, to any person or persons of whose claims and demands he shall not then have had notice.—Dated this 15th day of July, 1890.

NEWTON AND NEWTON,
Solicitors for the Administrator.
180, High Street, Lewisham, S.E.

Henry Richard Wright, Deceased.

Pursuant to the Act of Parliament 22nd and 23rd Victoria, chapter 35, intituled "An Act to further amend the Law of Property and to relieve Trustees,"

NOTICE IS HEREBY GIVEN that all Creditors and other persons having any Claims or Demands against the Estate of HENRY RICHARD WRIGHT, late of the "Royal Oak" Public House, Church Street, Lee, in the County of Kent, Licensed Victualler and Nurseryman, deceased (who died on the 7th day of April, 1890, and whose will was proved in the Principal Registry of the Probate Division of Her Majesty's High Court of Justice on the 19th day of May, 1890, by Henry Charles Mott, of Westmoreland Lodge, Wisteria Road, Lewisham, Kent, one of the Executors therein named), are hereby required to send the particulars, in writing, of their claims or demands, to the said HENRY CHARLES MOTT on or before the 9th day of AUGUST, 1890. After which date the said Executor will proceed to distribute the assets of the said Deceased among the persons entitled thereto, having regard only to the claims and demands of which he shall then have had notice, and he will not be liable for the assets of the said Deceased, or any part thereof so distributed, to any person or persons of whose claims and demands he shall not then have had notice.—Dated this 15th day of July, 1890. NEWTON AND NEWTON,
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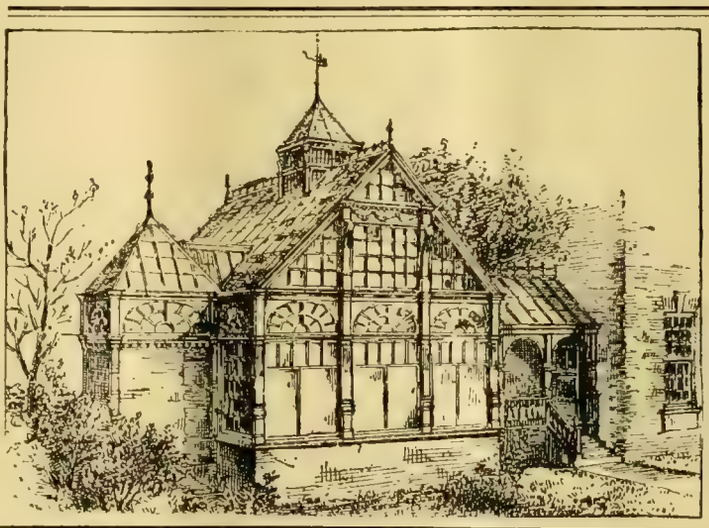
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WORCESTER.

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SATURDAY, JULY 19, 1890.

NETHERBY.

THOSE who study geography may know well its position when I say that the Solway Firth, which washes the coast of Scotland, and runs far into Cumberland, reached, in ancient days, that high bank on the western side of the house, which slopes down to the river Esk, running through the park below. At present the Solway is several miles distant, a low and level tract intervening, over which its waters once flowed. I was driven to Easton Hill, two or three miles beyond the park, and from this spot the landscape on a fine day includes many an English fell in Cumberland and Westmoreland, and many a Scotch hill as far as Dumfries. Gretna Green is 4 or 5 miles distant, and the Duke of Buccleuch's woods at Langholm are rather further within the Scottish boundaries. Netherby is, in fact, 12 miles nearer Scotland than the border town of Carlisle, and as the weather has been wet on each occasion when I have travelled that road, I may say, so far as my experience goes, that it always rains in these parts. But I believe the rain-gauge makes the downfall only about twice as many inches as in Middlesex.

The Grahams of Netherby, a branch of one of the most illustrious of Scotch families, having the Duke of Montrose for its head, became possessed of the estate by purchase in the seventeenth century, from the Duke of Cumberland, to whom it was granted by the Crown. The house, much enlarged by recent additions, and now a stately mansion, stands on the east bank of the Esk, which winds through the park, and adds to the long view from the principal windows the charm of water to that of a well-timbered park. The house, with the two wings added by Sir Frederick Graham, the father of the present Sir Richard, stands within the boundaries of a Roman station, and on the site of a Border tower of the old time, whose massive walls were probably erected at the expense of the ramparts of the ancient camp. But a very little ancient history should suffice in writing of a place sheltered, decorated and improved as

Netherby has been by the modern arts of forestry and arboriculture. Several great planters have resided here, from the Dr. Graham who planted the oldest woods to the late baronet.

The Woods.

But the greatest planter and improver was the famous statesman, Sir James Graham. Since his time Netherby, in the annals of Cumberland, has held the same place that Holkham does in Norfolk. The story would be too long to tell. It commenced before Sir James succeeded to the title and estates, when he resided at Crofthead, where Mr. Sutherland, the present wood manager, pointed with just pride to a noble, spreading Turkey Oak, planted seventy years ago, at the birth of Sir Frederick Graham. It must suffice to say of the improvements of Sir James Graham, that when he came to the estate, it was let chiefly—save the limited woodlands—to a race of crofters, who were wretched farmers, lazy by day and only active at night when they snared game, netted salmon, and smuggled goods over the border. This state of things Sir James reformed by wise measures, such as Sir John Sinclair adopted at Caithness when he reformed his estate under very similar conditions, enlarging the holdings, and introducing scientific farming, to the great advantage of all concerned. Farming is not a subject adapted to these columns, but I may say of the forestry at Netherby that I have seen nothing superior to it anywhere. On the occasion of my former visit the late Mr. Baty, who died in office here as wood manager, showed by statistics that the planting of woods on the moors and other lands had produced a considerable revenue, while the profit on the expenditure had been very satisfactory. There are now about 3500 acres of plantations, and 20 acres are planted annually over and above the quantity which is every year cleared and disposed of. Timber pays better than corn, or even grass. The sorts of trees are Larch, Scotch Fir, Spruce, and Silver Fir on the moors and stony land, and in stiffer soil, Oak and Ash. The Beech grows well on the hard, rocky soil which abounds here, and that tree forms a great ornament in some parts of the park and home domain. There is a magnificent specimen—a noble, wide-spreading Beech—on the lawn, on the north-east front of the house; and in the surrounding grounds Mr. Davidson, the gardener, presented me to a giant such as one willingly pays respect to—a grand Silver Fir. We hear of trees having been worshipped, and of deities moving in their branches in India, when all the neighbourhood came out to witness the miracle of the tree bending its top. I am sure no Fig tree in India can be more worthy of a deity than this giant Silver Fir. It has never known a pruning-hook, nor the destructive shade of other trees, and it is, therefore well feathered with side branches. The girth at 5 feet is about 14 feet, and the height not less probably than 30 yards. The Silver Fir cannot endure water at the root, and it likes unlevel and even precipitous surfaces where moisture abounds, and drainage is well secured as at Inverary, where it grows pre-eminently well in the policies of the Duke of Argyll, each tree a tower, and thousands of them on the steep banks and hill sides near the castle, with ten or twelve loads of timber in each. Hundreds of acres of woods with green drives through them, surround the charming sylvan spot, where the Grahams of Netherby have reared their roof tree, and the glimpses Mr. Sutherland gave me during our drive, recalled the "pleasure in the pathless woods," which Byron describes, a pleasure which to my mind is much enhanced after a shower, where they are well kept and not pathless, and when occasional hares and many pheasants enliven the scene, and blackbirds and thrushes sing, and rabbits hop quickly across the drives to hide their upturned "scutches" in the brushwood. We did not meet with a squirrel, and no doubt these dainty little graceful creatures with their ample tails, and their impudence, beyond that of any other quadruped, prefer a sunny rather than a showery day for making their excursion; or, perhaps, the gamekeepers have done with them what the Spanish patriot said on his death bed he had done with his enemies when he was told to forgive them before dying: "Haven't got any," he replied, "shot them all!" I have spent many a delightful day with gamekeepers in the woods, and have shot more than one of them in the gaiters, therefore I respect them. But why will they be so unnecessarily bloodthirsty? Why do they stick up traps for owls in all directions in the woods at Netherby? Owls fly by night when the young pheasants are safe in their coops. As night birds, they destroy thousands of mice and other vermin, and do a vast amount of good.

The Pleasure Grounds.

The 30 or 40 acres of kept grounds and shrubberies around the house are remarkable for their native beauty without any great display of exotic shrubs. They are well managed, and the Rhododendrons, which abound here, are kept well pegged down, so as to cover the ground. The wild Hyacinth is a feature of the place, many acres of it blossoming gloriously in the season. There are miles of delightful walks, sometimes by the steepsides of a burn which has cut its way deep through the sandstone-rock which forms the substratum of the several soils—from clay to stone—on the surface. A remarkably fine Ash, with tall trunk containing much timber, denotes a good soil, and perhaps clay, on that spot, whilst the numerous Beeches bespeak stony land. In the deep woods the Lichen covering the trunks and branches of the trees, tells of a moist atmosphere, and a climate favourable to timber.

Following the burn, past a summer-house on the banks, thatched with moss, and over a rustic wooden bridge high above the stream, we reached the spot where it flows by a waterfall into the Esk, turbid and tumbling wildly after rain, and smooth and bright as crystal in fine weather. Three birds follow the windings of streams in their flight, and do not cut off corners unless obliged—the kingfisher, the most wide-spread of the three; the dipper, which frequents the northern burns; and another bird of a smudged pale colour which soap and water would not whiten. I was not sure about this bird, but a young man known here for his knowledge of birds and skill in stuffing them—the naturalist of the estate—was feeding the pheasants in the wet grass of a wood pasture. He spoke with very proper caution, especially so near the Scottish border, and said that judging from my description, without having seen it, it would be the lesser whitethroat, which frequent the burns in Cumberland. I saw one in the park at Naworth, near the castle. Following the Esk by a path high above the river, we shortly crossed its stream by a narrow suspension-bridge that sagged under us as we went over, and having looked into the church of the parish of Kirk Andrews, we returned the nearest way to the Crofthead. The parish just named is 25 miles long, and the people can hardly all attend the little church; they come mostly to be buried, however, and, living or dead, the bridge shortens the distance, and was erected for that purpose. Sir James Graham rests with his ancestors in Arthured Church, beautifully placed on a point of land close to Longtown, the name of the church and parish being a corruption apparently of Arthur's Head.

The Gardens.

The kitchen gardens reward inspection. I looked with interest on two old Myrtles planted seventy years ago, on what is now the back wall of the conservatory. There are three graperies, big houses, one 50 feet long, with rafters of 27 feet, filled with Black Hamburghs to be ripe September 1, when the demand for shooting parties, which are very popular here, is always very great. Three Peach-houses will presently yield abundance of 8 and 9-ounce fruit, and one such Peach per foot is a satisfactory crop.

The pinetum was planted by Sir Frederick Graham thirty years ago, in ground formerly a kitchen garden. It is rather a wet site, with clay sub-soil, thoroughly drained 3½ feet deep; but none of the drains low run, as the soil is kept dry by the trees. At the planting of the pinetum, which is somewhat obscured by surrounding timber, the best specimens were obtained, and most of them are growing well. They form a good but rather crowded collection, and one could wish that objects of so much beauty were rather more widely scattered, on the Dropmore plan, and that space were afforded to admire them singly and separately. The Wellingtonia grows well here, and there are several good specimens. The stately Abies Nordmanniana, one of the handsomest of Conifers, thrives exceedingly well. Coming from the mountains of the Crimea, it is inured to frost, and in this sheltered site on our western coast it is, o course, untouched by the severest winter. This tree appears to thrive in a great variety of soils. One may see it growing without loss of shape or foliage in dry sandy land, whilst here it flourishes on a wet soil, perfect in shape from top to bottom, and covered with rank rich foliage. Abies Albertiana, from the Pacific coast, is a fit companion for the last, being as hardy, and, I thought, as handsome, for it looked its best at Netherby—lovely in its early summer foliage, sprinkled all over with light green young shoots. A. grandis is here in all its grace and glory, 70 feet high, or already almost half the height that it attains in Vancouver's Island, or in the Fraser River. A. nobilis, too, has reached, perhaps, a fourth of the height of 200 or 300 feet that Mr. Douglas assigns to it in the same regions. That other giant of the forests of the West discovered by the same explorer, and named after him, is emulating the specimens at Scone. It is a good characteristic of the Douglas Fir, noticeable in one of the specimens here, that when it loses its top by accident it soon makes another, which is not the case with all the Conifers. The Silver Firs in this collection have evidently found a favourable site. Abies Lowiana is another of the tribe, making itself quite at home.

H. E.

New or Noteworthy Plants.

Cypripedium Hookeræ (*Rchb. f.*) var. Volonteanum, *n. var.*

This attractive Cypripedium is a recent Bornean introduction, known in gardens as C. Volonteanum, though I doubt if botanically it is more than a distinct variety of C. Hookeræ. The leaves are proportionally narrower than in the typical form, the petals broader and more obtuse, the lip a little constricted below the horizontal mouth, and the staminode quite orbicular, without notches. In other respects, it is quite like typical C. Hookeræ. The petals are 1 inch broad, bright purple at the apex, and much spotted with the same colour below; the lip 10 lines in diameter. The above differences, though slight, may perhaps serve to distinguish it from a horticultural point of view. It has appeared both with Messrs. Hugh Low & Co., of Clapton, and with Messrs. F. Sander & Co., of St. Albans. The above description was drawn from a plant flowered by the former, who have presented to Kew a wild dried flower. The latter exhibited a plant at the recent Temple show, when it received an Award of Merit.

Aërides J'ansoni, *hyb. nat.* (?)

The species of Aërides are notoriously difficult to define satisfactorily, and the subject of this note is more than usually perplexing. It appeared in a collection of A. odoratum, Lour., imported from Burmah by Messrs. Hugh Low & Co., through Mr. Boxall, but is quite unlike any form of that species which I am able to discover; in fact, it appears to be quite intermediate between it and A. expansum, Rchb. f., which also grows there, for which reason I think it may be a natural hybrid between the two. Compared with A. odoratum, the leaves are narrower, and less fleshy, the tips of the segments more rosy-purple, the side-lobes of the lip more spreading, a little more curved, and transversely barred with rosy-purple, and the front lobe twice as broad.

though with the margins reflexed in the same manner. All these characters indicate a decided approach to A. expansum, and being able to compare the three plants side by side in the living state, I think the new one may be a natural hybrid between the other two. It is requested that it may bear the name of Mr. J'Anson, Orchid grower of the establishment. *R. A. Rolfe.*

THE BORONIAS.

The older gardeners amongst us frequently lament the lack of the numerous graceful New Holland plants in our greenhouses; Boronias being missed as much as any others. When I was quite a young man, ambitious of success in my business, I had some Boronias under my care, some of which were remarkably good specimens. Mr. J. Fraser then, as now, of the Lea Bridge Road Nurseries, called, and was good enough to say that the plants were very well grown; and of B. serrulata he remarked that he had never seen a finer plant. That is now twenty-seven years ago, but the incident is quite fresh in my memory. I may remark here that young gardeners are naturally very sensitive about any remarks that may be made about their work by those they have been taught to look up to, and a few words of encouragement when deserved, are easily spoken and long remembered. One of the earliest species of the genus to flower in England was B. pinnata. It is figured in *Bot. Mag.*, t. 1763, and is there stated to have been introduced by Messrs. Lee & Kennedy. Three other species had been described at this time by Sir James E. Smith, but none of them were known in cultivation; and B. serrulata was known only by repute as being very ornamental. The next species to appear was B. crenulata. It was received with much favour, and is well figured in *Bot. Reg.* for 1838, t. 12. Dr. Lindley wrote of it as being the handsomest of the genus, and that it was profusely clothed with bright red flowers.

Boronia Fraseri is figured next in order in the *Magazine of Botany*, t. 9, p. 123, under the name of B. anemonifolia. It is also well figured in *Bot. Mag.*, t. 4052, and described as "the handsomest of a very handsome genus." The flowers being of a deep rose colour.

One of the most striking species is B. megastigma, it is very curious and distinct in character; its slender stems profusely clothed with purplish-brown and yellow flowers, the fragrance of which is very delicious. A spray or two of its flowers will scent a large room, and the fragrance of the blooms fills the greenhouse or conservatory where the plant is growing. It is a plant readily obtainable in the trade.

Boronia elatior is a pretty species, introduced so recently as 1876 from Western Australia by Messrs. Veitch; it was first placed in their catalogue of new plants in 1877. I have grown it from that time. The bell-shaped, bright rosy-carmine flowers are thickly placed on the slender twiggy branches, are very pretty; they are also fragrant. In describing this plant, where it is figured, *Bot. Mag.*, t. 6285, the editor remarks, "About fifteen species have been raised and figured in England; but it would be difficult to find half of them now, so entirely has the cultivation of Australian plants been superseded by easier grown soft-wooded things." The same remark might apply now, although it is thirteen years since the above was written. The plants are now practically unknown to the public, and if some enterprising nurseryman would exhibit them in groups at some of our great exhibitions, they would create quite a sensation, and might cause a revolution in the kind of plants grown. The most recently introduced Boronia is heterophylla, a slender growing plant which was raised at Kew from seeds collected by Miss North in Western Australia in 1881; but it was previously discovered by Drummond in 1842. It flowered at Kew in 1885, in a cool greenhouse, and was figured in *Bot. Mag.*, t. 6845. The flowers are of a bright scarlet colour. It was exhibited in fine condition by Messrs. Veitch, of Chelsea, in 1887, and sent out by them the same year. It is, I think, the most beautiful of all the Boronias, and probably more plentiful in nurseries than any other, as it has been so recently introduced. The whole of the Boronias readily lend themselves to culture in a cool greenhouse, but do not like being mixed up with the "soft-wooded" plants, amongst which it is not rare to see thus crowded the large spreading leaves of Cinerarias, Calceolarias, Pelargoniums, &c., smothering the slender growths of the Boronias, and causing the leaves to drop off; and unless the plants are kept in good condition they become unsightly objects. The cultivation of ordinary greenhouse soft-wooded plants is so easy, and so little care is required in watering, or in ventilating or shading the house, that it is no wonder if New Holland plants fail to do well. It would be well if the cultivation of the latter were taken up again, if for no other purpose than to afford a better training for young gardeners in plant growing. I find it most difficult to get them to believe in the great importance of a continual free exposure to fresh air of the plants under their care, and as much sunshine as they will stand. The plants also require to be placed near the glass, and in such a position, that the air may circulate freely around them. To form compact bushy specimens, the young growing shoots ought to be pinched back, wherever they are inclined to grow too strongly; this prevents the strong from overgrowing the weak shoots, and equalises the development of the young wood, and if specimen plants are desired, the shoots must be regularly trained out; and this, with judicious pinching of the growing shoots, lays the foundation of a perfect specimen. If it is necessary to grow the plants amongst the ordinary occupants of the greenhouse, each specimen should be raised above the stage. Boronias do not take long to grow into large specimens, if they are potted on as fast as they require it, and, as a rule, young plants require to be repotted twice in the year; and when they grow into medium-sized or large specimens, once a year, or once in two years, is often enough. The potting soil should be fibrous sandy peat; but they seem to do quite as well, or even better, when a little yellow loam is added to it.

The Boronias are easily propagated from cuttings. B. pinnata is propagated by grafting. The cuttings are taken when the wood is half ripened, and if they are inserted in very sandy peat, and covered with a bell-glass, which ought to be removed and wiped daily, they will soon form roots in the greenhouse. They may also be propagated in the spring in a forcing-house, if the cutting-pans are placed under hand-lights. We had some treated that way this season. As soon as the cuttings are well rooted, they ought to be potted off singly into very small pots; the sooner this can be done, the better, as it is not well to allow the roots to become intermingled. From the earliest stages of their growth the plants should be in a light airy position, but it is not well to allow the sun to shine directly upon them through the glass in summer, as even if the leaves are not injured, the soil is dried up rapidly, and the active rootlets are sometimes killed. One very important point in their culture is free drainage; the crocks should be in sufficient quantity, and placed in the pot carefully, some tough fibre of peat being put over them. Besides the species mentioned above, B. Drummondii, with rose-coloured flowers, and the white variety of it, should be grown.

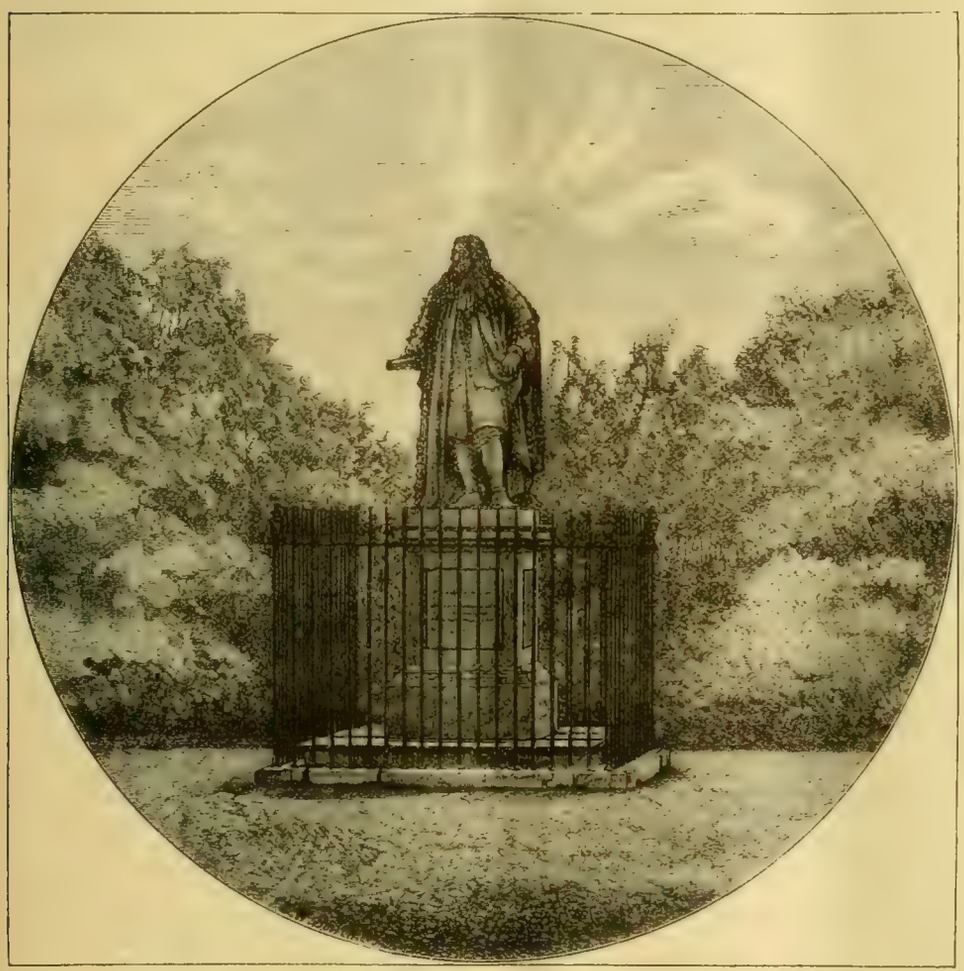


Fig. 12.—Statue of Sir Hans Sloane in the Chelsea Physic Garden. (See p. 74.)

B. pinnata, also, with fragrant rose or pink flowers, is one of the best for exhibition, and also a charming plant when small. *J. Douglas.*

Colonial Notes.

THE TRANSVAAL.

So much attention has been directed to this country of late years, that I should like to submit my impressions of it to intelligent readers of the *Gardeners' Chronicle*. And first for its position and size. The Transvaal is bounded on the north by the Limpopo River, south by the Vaal River and Natal, east by Swaziland and Portuguese territory, and west by British Bechuanaland. It is in the same latitude as South Queensland, and contains about 100,000,000 acres, being somewhat larger than Great Britain and Ireland. Although so near the tropics, the great elevation of the country in general renders the climate bracing and healthy. South of Pretoria it is a grass country; north, as the tropics are approached, much forest is met with, consisting mostly of Olea, Myrsine, Oreodaphne, Podocarpus, Acacia, Ficus, &c. The rainfall, which rarely fails, is a summer one—October to March—the rest of the year being dry and cold.

The main occupation of the Dutch is pastoral and agricultural, both pursuits being carried on in the most primitive style. Their crops are Maize, Wheat, Oats, Barley, and a few Potatos, but, as a matter of fact, there is climate and soil in the country suitable for everything—from Swedes to Sugar-cane. Wages are high, and so is the price of everything The main part of our eatables and drinkables, clothing of all kinds, and all machine-made articles are imported. No railway yet is known in the country, but I believe a very few more years will see progress in this direction.

The gold-mining community and shopkeepers are mostly English. Much friction still exists between Dutch and British, but we shall manage, I believe, to live together without more bloodshed.

Horticulture, generally speaking, is in a very backward state. Hardly a nursery exists in the country; tree planting and forestry are overlooked. Horticultural and agricultural shows or exhibitions we know nothing of. Although very many fruits thrive wonderfully well here, their cultivation is dimly understood. Grafted fruit trees have to be imported from the Cape and Natal.

On the farm where the writer lives there is a large orchard of seedlings; the sizes of some I subjoin, their greatest age not being more than forty years:—

Apple, 6 feet 6 ins. girth at 3 feet from ground;			20 feet high.
Apricot, 6 feet 6 ins.	,,	,,	30 ,,
Almond, 6 feet 6 ins.	,,	,,	30 ,,
Fig, 4 feet	,,	,,	25 ,,
Mulberry, 6 feet	,,	,,	25 ,,
Pear, 8 feet	,,	,,	40 ,,
Peach, 5 feet	,,	,,	25 ,,
Orange, 2 feet 6 ins., about twelve years old.	,,	,,	15 ,,

All the above are in good health, and bearing well, though much neglected for several years past. Our elevation is 5300 feet above sea-level; summer temperature, 65° to 80° in the shade, 25° to 60° in winter.

No forest tree of any kind has been planted on this spot, except some Weeping Willows. These are splendid specimens, planted about forty years ago, they now girth 8 feet at 3 feet from the ground, and are 50 to 60 feet high. Only two native trees are to be found near here—Acacia horrida, with a girth of 8 feet, and 40 feet high, and a Combretum, possibly C. riparium, 6 feet girth, 45 feet in height.

Although this farm has been occupied for many years, and is close to the high road from Natal to Pretoria, I have noticed but one foreign plant, which seems quite at home, *i.e.*, Zinnia elegans, with curiously small four to five-petalled flowers, the heads but half an inch across.

The flora is rich and interesting. I subjoin notes of the most notable plants:—Trichodesma physaloides, a low-growing herb, with a large Rhubarb-like root, and very many pretty white and brown flowers. Babiana Bainesii, with lilac-yellow spotted flowers, produced to just above the ground in the autumn. Anomatheca grandiflora (?), with much larger flowers than A. cruenta; perhaps the same species as that found at Delagoa Bay, and proved hardy at Kew. Calliepis sp., a herb with lovely pale lilac flowers 2 inches across. Dicoma Zeyheri, a very handsome dwarf Composite, with "everlasting" purple and white heads. Striga sp., a herb 6 inches high, belonging to Scrophulariaceæ, with intense vermilion flowers; cultivated, this would make a sensation, but that is remote, as I believe the plant is parasitic on grass roots. Vellozia sp., an Amaryllid minus a bulb, with the habit of a very narrow leaved Dracæna, and bearing many solitary, long-stalked, drooping lilac flowers. I sent seed of this to Kew three years ago. It is only found embedded in masses of its own tough, peat-like roots in crevices of rocks. A fine yellow Hypoxis, a very pale blue Nymphæa in pools, an Hæmanthus much like H. natalensis, a Eulophia or two, Bonatea speciosa, and an Adiantum and Asplenium make up the total seen hitherto.

The future destiny of the Transvaal is no doubt a high one, since it not only has splendid agricultural and mineral resources, but is also the high road to the vast and fertile regions which extend to the Zambesi, now the dominion of the British South African Company. *R. W. Adlam, Pretoria, Transvaal.*

The Rock Garden.

LITHOSPERMUM PROSTRATUM.

This favourite rock plant is a near approach to the Gentian in colour, and blooms in May. In some places it does not grow freely, and it is never an easy subject to strike from cuttings. The best mode of increasing the stock is, I find, by layering in lumps of peat and sand, kept well moistened. When growing on the rockery in shallow soil, abundance of water is needed to maintain it in health, and induce it to grow freely, without which but few flowers are produced. Any rockery, no matter how small, should have a piece of this lovely plant growing on it. *E. M.*

—— This plant admits of ready and quick increase, as it may be raised from seed, which the plants produce freely, or they may be pulled apart annually and divided, and then dibbled in or re-planted. The time for either of these operations is early in the year, but the division of the plants may be carried out immediately they have done flowering, for although late, they soon strike again if kept shaded for a few days, and frequently sprinkled with water. Seed should be sown in pans or boxes, and placed in gentle heat, and if the soil is maintained in a uniformly moist condition, the seed will soon germinate. *J. Sheppard.*

IBERISES.

In your issue for June 7, p. 719, and also in that for June 21, p. 774, some remarks appear, the former by "R. D.," and the latter by "E. M.," under the head of Iberis corifolia, though I think, from what is said, that neither of your correspondents has the true plant. I. corifolia is not mentioned in the *Dictionary of Gardening*, but it is mentioned in Don's *Gardeners' Dictionary* under I. saxatilis. The true I. corifolia, if I know it aright, is a dwarf plant 3 or 4 inches high at most, with narrow Coris-like leaves, from which, indeed, it takes its name; moreover, though a good rockery plant in itself, it is not worth half the praise which your correspondents have bestowed upon it.

The plant, I believe, both your correspondents have alluded to is I. correæfolia (Correa-leaved Iberis), a widely distinct and far superior plant. This is the plant which deserves the praise accorded to I. corifolia at p. 719. It is believed to be a garden hybrid of unknown origin, though some mention is made as to the latter in Mr. Robinson's *Alpine Flowers*, p. 266; the time of flowering of the two plants is also very distinct, I. Correæfolia flowering in May and June, whilst I. Corifolia commences its flowering in April. So far as its rooting from cuttings is concerned, I find that the young shoots produced immediately the flowering is complete, and taken when 3 inches long, root well in about a month; not so, however, the harder wood to which "E. M." refers at p. 774, vol. vii., particularly if these latter are taken with a heel attached, for then they take a long time—often several months—before roots are formed. If "E. M." will try the young shoots, he will, by the end of September, have nice bushy plants—the time he usually inserts his cuttings. I have divided the plants, and I have put in cuttings in the autumn; but cuttings of the young shoots made any time before the middle of July are best. As soon as rooted, pinch out the top of the cutting, and, ten days later, plant them out in good soil, shading them slightly for the first few days; and by the end of September they will be sturdy little bushes. *E. Jenkins.* [Mr. Baker's monograph of these plants is given in our volume for 1868, p. 711. Ed.]

ACCLIMATISATION.

Mr. Wolley Dod, on June 24, at the Drill Hall, read a paper on "Hardy Plants." He touched on the subject of acclimatisation, and I gathered that he did not believe in it. There are, however, certain facts which cannot be explained, except by the seed becoming gradually suited to a different climate to that from which it originally came.

If Cauliflower seed is taken from England to Calcutta and sown there in the winter, it will germinate and grow, but it will not form a head, as the winter there is not only too short, but too warm for it. I will not say that it never does form a head, but it has been found that Cauliflower seed imported directly from England does not answer in Calcutta.

Now if that same seed is taken to Lucknow, with its colder and longer winter, and sown there early enough, it will form a good head, and will give some seed. If this seed is sown early enough next year, it will give more seed. After that there will be no difficulty in getting this acclimatised seed to do what is wanted—that is to form a good head of Cauliflower. I do not say that the flavour of the Cauliflower from acclimatised seed, will be equal to that from newly imported seed, but that is a different thing. Flavour and constitution may change, but botanical characters will remain the same.

Now if Lucknow-acclimatised Cauliflower seed is taken to Calcutta, it will give satisfactory results as far as forming a good head is concerned. It appears that the intermediate climate of Northern India has sufficiently modified its constitution, so as to enable it to form a head in the warmer climate of Calcutta.

I have never been able to acclimatise the white Broccoli in Lucknow. It grows much more slowly than the Cauliflower, and its head is formed late so that at the flowering time, the hot winds are on it, and no seed is formed.

I believe that acclimatisation [in this sense], is not a fiction. If it were so, it would be impossible to account for plants with the same botanical characters being found in different climates, although their forms and other minor characters may be somewhat changed. I believe the Amaryllis, as grown by Messrs. Kelway & Son, in cold frames, can be further acclimatised, as they themselves have shown, by being planted in a sheltered border, with due precautions against frost. Every bulb may not endure, but those that do will illustrate the survival of the fittest, and if they seed, further hardiness may result. I do not say that in the border one would ever get such a flower as Veitch's Champion, but I do say that this fine plant may be made to yield its beauty of colour and form, without much difficulty, in the open border, as many other bulbs are made to do.

This subject of acclimatisation appears to me

rather a trouble to Weismann's theory, viz., that the germ-plasm is not affected by surroundings, unless we escape the difficulty by saying that surroundings produce congenital variations in the germ-plasm! If so, that is all I am contending for. They do affect the germ-plasm so as to produce congenital variations, and one of these variations is suitability to climate, and that is acclimatisation. The process of acclimatisation may be very slow in some plants, but I do not think that, therefore, it does not occur. It would be desirable to test this acclimatisation of Cauliflowers more scientifically in India, so that there may be no doubt about the facts. *E. Bonavia, M.D.*

FUNGICIDES.

The following is part of a paper dealing with plant pests, read by Mr. F. S. Crawford, at the Congress of the Central Bureau of Agriculture of South Australia, held in Adelaide on March 4 to 7, 1890.

1. *Ferrous Sulphate.*—This salt, known also as sulphate of iron, iron sulphate, and green vitriol, is stated by Dr. Griffiths to be a powerful fungicide, as well as a valuable manure. Half-hundredweight to the acre as a top-dressing is what he recommends for manuring purposes. In solution of 1 to 100—say 1 oz. to 5 pints of water, or 1 lb. to 10 gallons—it destroys (he states) the spores of the fungus that causes the Potato disease (Phytophthora infestans), also those of red rust and mildew. Since this statement was published (in 1886) our knowledge of the peculiarities attending the germination of the spores of P. graminis has been increased, so that it would be as well to re-test these experiments before accepting them as true. In 1886 I experimented with Ferrous sulphate in solution—strength, 1 oz. to 3 gallons—as a remedy for Apple scab (Fusicladium), with the result that the fungus was quickly blackened on the tree, and apparently killed. On examining the spores with the microscope they were greatly discoloured, but on testing their germinating power, I found their vitality as great as in spores that had not been treated. Double the strength—2 oz. to 3 gallons—is strongly recommended by Mr. Ross, of Highercombe, as effective in checking the scab, particularly if used in an early stage; but there is a danger of the fruit and foliage being stained. A winter dressing of 1 lb. to 10 gallons is, I think, decidedly preferable.

2. *Carbolic Acid Emulsion.*—Formula: Calvert's No. 5 carbolic acid, ½ pint; soap, 2 oz.; hot rain-water, 1 pint. Mix the carbolic acid with the soap solution until all the oil is dissolved. For use, add 20 or more parts of rain-water to 1 part of the above, for the strongest wash. This will be too strong for many plants, but can be used on Apricot trees for the shot-hole fungus, although it may slightly damage the foliage. It kills the Apricot scab.

3. *Copper Sulphate.*—Known also as cupric sulphate, sulphate of copper, bluestone, or blue vitriol. This has long been used for destroying the spores of the smut fungus that may be attached to seed Wheat. For this purpose in Germany and Britain it is customary to use weak, and in America strong solutions. The following are a few formulæ: *a*, 1 lb. to 20 gallons; soak for 12 to 16 hours. *b*, 3 lb. to 5 gallons; thoroughly wet, and dry with slacked lime, and sow at once. *c*, 1 lb. to 5 quarts; sufficient for 4 bushels; soak 10 minutes. *d*, 10 lb. to 8 gallons; immerse in solution, and pour off. *e*, 3 lb. to 5 quarts; immerse 3 minutes.

4. *Copper Sulphate Spray.*—Dissolve 1 lb. of copper sulphate in 16 gallons of water, and spray during the winter season. Note, when copper sulphate is used pure, wooden vessels should be used, and a brass pump employed for spraying, as the contact of iron causes a deposition of the copper, as well as a rapid corrosion of the iron vessel.

5. *Eau Celeste, Audoynaud Process.*—Dissolve 1 lb. of copper sulphate in 3 or 4 gallons of hot water; when dissolved, and the water is cooled, add 1½ pint of commercial ammonia (strength, 22° Baume); when ready to use, dilute to 22 gallons. Better to keep the solutions in a wooden or earthen vessel.

6. *Eau Celeste* (Modified Formula).—Copper sulphate, 2 lb.; Carbonate of soda, 2½ lb.; Ammonia, 22° Baume), 1½ pint; rain-water, 22 gallons. Dissolve the copper in 2 gallons of hot water, in another vessel dissolve the carbonate of soda in a similar manner, mix the two solutions, and when all chemical reaction has ceased, add the ammonia, then dilute to 22 gallons.

7. *Bordeaux Mixture.*—Copper sulphate, 6 lb.; lime, 4 lb.; water, 22 gallons. Dissolve the copper in 16 gallons of water, in another vessel slake the lime in 6 gallons of water; when the latter mixture has cooled, pour it slowly into the copper solution, care being taken to mix the fluids thoroughly by constant stirring. A special pump is required for the application of this compound.

8. *Sulphatine* (the Estève Process).—*a*. Mix 2 lb. of anhydrous sulphate of copper with 20 lb. of flowers-of-sulphur and 2 lb. of air-slacked lime. To be dusted over Vines, &c. *b*. Sir R. Davenport's modification: 60 parts of sulphur, 30 of lime, and 10 of copper sulphate. *c*. David's Powder: Dissolve 4 lb. of copper sulphate in the least possible amount of water, and slake 16 lb. of lime with the smallest quantity of water required; when both are completely cooled, mix them thoroughly; let the compound dry in the sun, crush and sift, and apply with a sulphuring bellows.

Note.—Formulæ 5, 6, 7, 8, and 8*a* and *c*, are taken from reports of the United States Department of Agriculture. In that of 1888, Professor Galloway observes that the results of a number of trials of these fungicides prove that with Bordeaux mixture we may subdue or entirely prevent black rot. Downy mildew (Peronospora viticola) can be easily prevented by any of the other remedies.

Spray Pump and Spraying.—For general work with most clear liquids the ordinary force-pump with triplet cyclone nozzle, as sold, answers very well; but the pump has an iron chamber, which would be immediately acted upon by a solution of copper sulphate. To obviate this, the chamber should be covered over with one or two coatings of brunswick-black, by unscrewing the parts, heating the chamber, and rotating it on pouring in the varnish; but it would be better for the manufacturer to make all parts of brass. For using a thick liquid like Bordeaux mixture, a special nozzle is required. In America, the Vermorel apparatus and the Eureka sprayer are spoken of as specially suited for this purpose. As these are unobtainable in Adelaide, an experiment might be made by using a cyclone nozzle with a larger exit hole than ordinary. A special cap to screw on in the place of the ordinary one ought to be supplied for a shilling or two. When a triplet is used, it would be as well to use a single nozzle by temporarily plugging the other two.

It is important to remember that spraying operations should not be conducted during the hottest part of a summer's day, nor during rainy weather, and that they should be repeated at intervals of a fortnight, three weeks, or a month, according to circumstances. In this matter the judgment of the operator must be guided by the special circumstances of the case, and that when used for fungicide purposes, they should be adopted before the appearance of any fungus that might be expected.

NEW GARDEN VERONICAS.

Along with some other New Zealand species of Veronica, Mr. Lynch, the Curator of the Cambridge Botanic Garden, sends two that I do not think have been recorded as garden plants previously, and as they are distinct and attractive kinds, are worthy of being widely known.

P. amplexicaulis, Armstr., is a small shrub, something after the style of V. carnosula and V. pinguifolia, but quite different in leaf and flower. The leaves are rather closely set and spreading, leathery in texture, but not rigid, oblong, or elliptic-oblong, ½ to ¾ inch long, and ⅜ to ⅝ inch broad, very obtuse, quite sessile, and more or less amplexicaul, with the basal part of the margins recurved, slightly concave above at the apex, both surfaces very glaucous, and the margin quite entire. The flowers are borne in dense pedunculate spikes towards the tips of the branches. Peduncles ¾ to 1 inch long, pubescent, spikes about as long as the peduncles, flowers sessile, crowded, white, ¼ inch in diameter, the segments rather narrow, the two lateral ones directed downwards, beside the lower segment.

Veronica pimeleoides, Hook. f., is also one of the V. carnosula set, being a small shrub, with small, closely set, soft-leathery glaucous leaves, elliptic or obovate in outline, narrowed at the base into a very short petiole, subacute, concave. The flowers are of a bright blue purple, disposed in pedunculate, simple or branched spikes. The peduncles are from a quarter to half an inch in length, and, like the dark-coloured stems, densely pubescent. The flowers are sessile, and not very close together; the corolla is rather more than a quarter of an inch in diameter, with moderately broad lobes.

This was sent by Mr. Lynch as V. glauco-cœrulea, and I have no doubt it is the plant described under this name by Mr. Armstrong in the *Transactions of the New Zealand Institute*, vol. xiii., p. 353, where he says, "the intensely glaucous, closely-set leaves, and dark blue or purple flowers distinguish this from all but V. pimeleoides, from which it is best distinguished by the stouter branches, longer petioles, and much darker flowers. It is a most beautiful and ornamental plant, a great favourite in gardens." In his key to the species, Mr. Armstrong distinguishes V. glauco-cœrulea from V. pimeleoides by its larger leaves; but Mr. Lynch's plant, which exactly agrees with the description of V. glauco-cœrulea, does not differ in robustness, size and shape of leaves, or in any other character, from the type specimens of V. pimeleoides, Hook. f., and must therefore be considered as synonymous with that species. *N. E. Brown, Herbarium, Kew.*

TREES AND SHRUBS.

PINUS PINEA.

In the woods at Addington Park, the seat of his Grace the Archbishop of Canterbury, the whole of the trees of this species, which appear to be about forty to fifty years old, are dead or dying. The trees are intermixed with Scotch Firs, which are in good health, though not very vigorous, as if they did not derive sufficient nourishment from the pebbly soil overlying the chalk, in which they are growing. The cause of death in the case of the Stone Pines may have been frost. It will be remembered that the famous Pine forest of Ravenna, which consisted of this species, was entirely destroyed by frost a few years since. The tree is handsome, and interesting for its associations; the cones are massive, the seeds edible, but withal it is clear it is not a tree to be largely planted in this country.

A Hybrid Willow.

Mr. C. L. Anderson, writing in *Zoe*, a Californian journal, says that he has growing in his locality a Willow with male and female flowers in the same catkin, and which he feels sure is a hybrid between the Weeping Willow, S. babylonica, and S. lasiandra, the characters being less or more intermediate between the two.

New Late-flowering Azaleas.

Rich as we are in hardy flowering trees and shrubs, that make our gardens and parks so bright with bloom, from the Almond in March to the Kalmia at midsummer, we feel the want of more brightness in our shrubberies from July onwards till autumn, the season during which comparatively few trees and shrubs flower. Thus it is that we welcome every addition to late-flowering shrubs, or every step taken to prolong the season of any early-flowering race that will give us bloom after July. On this account, the work that has been quietly going on for some years in the Knap Hill nursery for the production of a late-flowering race of Azaleas is most commendable. Up to the present time little has been said about these late Azaleas, as Mr. Anthony Waterer himself

was not certain of success in his experiments in hybridising; but now the results clearly show that the work has been carried on in the right direction, as any visitor to the nursery at the present moment may see for himself. When I saw these Azaleas last week, I was surprised to find what an advance the latest seedlings show over those which flowered for the first time two or three years ago. Some of the newest seedlings are a deep rose-pink, approaching to crimson; others are pure white, while there is every intermediate shade in others. The flowers approach in size the finest of the new early flowering sorts, and the form of the flower, especially the breadth of the petals has been greatly improved. In order to fully appreciate the superiority of this new race of late Azaleas, one must consider the scanty material Mr. Waterer had to deal with. In Azalea occidentalis, which is the foundation of the race, we have a deciduous shrub, from 3 to 6 feet high, of a somewhat loose habit of growth, with bright green, shining leaves, and bearing, about the end of June, small loose trusses of flowers, white within, washed with reddish-brown on the outside, and with a conspicuous yellow blotch on the upper petal. Though showy and fragrant in their primitive state, it was necessary to get more diversity of tint, larger and more regularly-shaped flowers, and larger and denser trusses, in order to make it a first-rate garden shrub. The fact that it commenced to flower after nearly all the other Azaleas were past, was the one great point which induced Mr. Waterer some years ago to commence hybridising it with the finest of the early flowering sorts. He has certainly succeeded in infusing brighter and more varied tints, larger trusses and finer flowers, and yet not altered in the least the late flowering character of the type. I have before me while writing a bowl-full of flowering branches cut from various seedlings, and though they have been cut nearly a week, they look as beautiful as when first gathered, as the buds continue to expand daily until the truss is exhausted. The brightness of the green of the foliage shows off the flowers much better than the paler foliage of the early sorts, and in autumn the decaying foliage turns to a variety of brilliant scarlet and red tints, so that there are two distinct phases of beauty in these late Azaleas. Though the finest of the seedlings have such splendid flowers, Mr. Waterer, I believe, has not named any of them, as he is sanguine of producing in the course of time varieties that will far out-distance any he has already flowered. As cut flowers for the drawing-room these new Azaleas are very charming, and their fragrance is not nearly so strong as the early kinds. It will be interesting to see how they will behave when forced into flower early. If they flower amidst their foliage when forced, as they do in July, they will be much superior to such as A. mollis, which flowers while leafless. I should like to learn if any other hybridist in Europe or America has been at work on this Western Azalea, and if so, with what results. *W. Goldring, Kew.* [We fully endorse our correspondent's opinions. Ed.]

MINOR PRODUCTS IN CHINA.

As an illustration of the value of some of the so-called "minor products" in tropical countries, I may point to the fact that ground nut cakes—that is the residue or mace after the expression of the oil from the seeds of Arachis hypogæa—is exported from Kiungchow in China, to the extent of over 1000 tons annually. In 1888, there was exported from this port 1301 tons, of the value of £7205, but in 1889 the quantity fell to 1044 tons, valued at £5780. In commenting on this, the British Consul says that the crop has been bad all over the island, so that a considerable amount has been imported for consumption from the mainland, whereas a surplus for exportation is generally looked for. The cultivation of this crop has given way considerably of late years to sugar, and whereas the oil expressed was formerly sufficient both for the cooking and lighting purposes of the district, it is not now sufficient for cooking alone, and the price which was formerly about 5 c. per lb. is now three times that sum. Sesamum (Sesamum indicum), is also largely grown, but the seeds showed a decrease in value of nearly £7000 during 1889. The crop was an unusually good one owing to dry weather, and the diminished export of the seeds is due to the fact that they have been used for expressing oil to make up for the deficiency in ground nut oil.

Betel-nuts (Areca catechu), seem to be another important article of export from Kiungchow, the quantity exported in 1889, amounting to 648 tons of the value of £18,333. Betel-nuts are stated to be an article both for export and import, there being a considerable demand for Betel-nuts grown in this island, as they are of superior quality, and fetch double, or more than double, the price of those imported from the Straits. These latter are, it is said, imported to be mixed with the native product, and fraudulently passed off as the genuine article. *J. R. J.*

THE HERBACEOUS BORDER.

CORYDALIS.

A somewhat neglected family of pretty herbaceous border or rockery plants, which vary considerably in their duration of flowering. Corydalis solida, C. tuberosa or cava, and C. nobilis are all showy species, that flower early, and are soon over; but the common yellow fumitory, C. lutea, begins to flower nearly as early, and continues throughout the summer; the flowers are certainly not so large as those of the others named, but the plant produces such a dense tuft of pale green Fern-like foliage, and a great number of flower-racemes, which compensate for the small size of the individual flowers. The plant has great adaptability, and grows equally well in the ordinary herbaceous border or on the top of a wall; in fact, wherever it can obtain comparatively dry quarters, and in this respect it is one of the best plants for putting on old walls and dry sun-burnt places. The white-flowered C. capnoides is similar, and an excellent companion to C. lutea; it is, however, somewhat dwarfer, and more glaucous; both are easily raised from seeds, or increased by division. *F. R.*

Geraniums.

About half-a-dozen species of Geranium may be classed as showy, blooming for the most part in the early summer months. The best of these are G. armenum, a robust species, which grows about 3 feet high, and induces a profusion of large rich magenta-coloured flowers; G. eriostemon, a rather dwarfer plant, with pale violet flowers; G. gymnocaulon is neater and compacter than either G. armenum or G. eriostemon, and with flowers quite as large as those, being sometimes 2 inches across, and of a rich shade of purple, beautifully veined with purple nearly approaching black. G. sanguineum is a trailing indigenous species: a capital rock plant, one for the front row of the herbaceous border; it has purplish-crimson flowers, which endure for a long period of time. Its variety, G. s. lancastriense, with purple veins in the flowers, is equally desirable. G. pratense is a tall-growing plant, of which there are blue, white, and blue and white varieties, as also one with double flowers, the last-named being very ornamental; G. Walliechianum is a species with rather trailing habit of growth, large purple flowers, and the whole plant somewhat hairy. G. macrorhizon grows about 1 foot high, and has a suffruticose stem resembling the zonal Pelargoniums, which usually divides at the point, and produce bright purplish-red flowers in profusion. It is a good distinct plant for the rockery. Cinereum and argenteum are both neat alpines. Endressii is a vigorous trailing species, with rather small, light, rosy flowers. Phæum has very dark brown flowers, and is a somewhat similar plant to reflexum. Sylvaticum, with purple-blue flowers; and striatum, pink striped, are all smaller flowered than the above-named species, but well suited for planting in the mixed shrubbery border. A distinct and dwarf species, flowering some time in advance of the others, is G. aconitifolius, with white flowers, very free—a desirable plant. Geraniums are of easy culture, and any good workable garden soil will grow them well. Propagation is effected by division or by seeds, which in most years ripen. *F. R.*

Carnation Mrs. C. Turner.

A house of these is just now a fine feature at the Royal Nursery, Slough, a considerable quantity of healthy plants of the old blush type, the pink, rose, scarlet, and crimson; the last-named not so bright in colour as the new French variety recently shown by Messrs. J. Laing & Sons, but to all appearance a flower of superior quality. But I am just a little doubtful if either of the two last-named is really of the old Malmaison type. The cleanliness and healthy development of the plants are remarkable. To keep them free from insect pests, they are occasionally dipped in soft-soap and water; about 3 ounces of soap being dissolved in 4 gallons of hot-water, and when of the temperature of new milk, the plants are dipped in it. *R. D.*

VEGETABLES.

SUTTON'S FAVOURITE CABBAGE LETTUCE.

I find this variety a very distinct and handsome one, very good for summer use. The head of fringed leaves is crisp, tender, and solid, usually grows to a large size, and remains good a long time without running to seed. *H. W. Ward.*

Mammoth Longpod Bean.

I have grown this Broad Bean for two years, and I consider it one of the earliest in cultivation. The height is medium, flavour very good, and it is prolific, eight or nine Beans being usually found in a pod. Where Broad Beans are liked, it is a variety that should be grown. Exhibited at the Bath Rose Show of last year and this year, it was awarded on each occasion a Certificate of Merit, the length of the pods shown being 14½ inches. *W. Leaney, Bath.*

BELGIUM.

NAMUR.

New Plants.—At the recent show of the Société royale d'horticulture de Namur, new plants were well represented from the establishment of Jacob Makoy et Cie, of Liège, who showed four remarkable hybrid Anthuriums raised between A. Scherzerianum and a beautiful white variety:—(1), Mme. Raphaël Gélys, with an almost round, flat, very broad spathe, the ground-colour is cream, dotted with purplish-pink, and most effective; (2), Mme. Gravis, ground-colour purplish-white, dotted with rosy-carmine; (3), Mme. Louis Fournier, spathe very large, ground-colour pinkish-white, blotched with very deep pink; (4), M. le Baron Arthur de Rosen, spathe very large, in form slightly resembling Palmeri, the under side of the flower vermilion, the ground-colour of the upper part delicate pink, all blotched with red; (5), Président Ferd. Kegeljan, spathe very large, ground colour pink, with large red spots, perhaps this may be considered the most remarkable of its class. Alocasia Kerchoveana, in the way of Thibauti, but with larger, longer leaves, ground-colour slate coloured, veins very distinct almost white, the small secondary veins very marked. Nephthytis picturata from the Congo, a much valued introduction: Dieffenbachia Makoyana (Columbia, 1890), leaves large, very long, lanceolate, the ground-colour is a handsome green, speckled over with largish markings of clear white, a very vigorous species; Dieffenbachia Fournieri (Columbia, 1888), a magnificent species, vigorous and hardy, leaves very large, leathery, ground-colour blackish-green, spotted

and blotched with white, this Dieffenbachia is quite different from the ordinary species, it is certainly the one in which the white markings are most plainly shown. Philodendron corsinianum has very large leaves of olive green, the under part of the leaf is the colour of the dregs of wine, flower very large, with red markings. Bertolonia Président Pector, a new variety of the present year, ground-colour of leaf dark olive green, with rosy lilac dots, and of varying shades of colour. Chevallieria crocophylla from Brazil, is a very remarkable plant, the leaves of which turn quite red. This is a gigantic and admirable plant. Curmeria marmorata (Columbia, 1890), more gigantic and more handsome than C. Wallisii. In the collection of new plants from M. Ed. Pynaert were:—Adiantum Lambertianum, with a dense mass

MM. Jacob Makoy et Cie, of Liège, for Anthurium Président Ferd. Kegeljan. Prizes for good cultivation were awarded for a Kentia australis (M. D. Haene), Pandanus Desmetianus (Jacob Makoy et Cie), and Adiantum Farleyense (M. Rigouts).

Decorative Plants.—Among the many shown by MM. Jacob Makoy et Cie may be mentioned a very fine Vriesia imperialis, a fine Zamia Lehmani, Alocasia Van Houttei, a strong plant of Anthurium cristallinum, a fine Dracæna gloriosa, a Beaucarnea tuberculata, and an excellent Croton Hamburgianus. M. Rigouts had a remarkable specimen of Vriesia hieroglyphica. Fine Palms were shown by MM. Jacob Makoy et Cie, very fine plants of Cocos Bonneti, Kentia Mooreana, Kentia Belmoreana, a very good Euterpe edulis, Phœnix rupicola, Pritchardia macrocarpa, and Livistona Hoogendorpii; mention should also be made of the splendid Bertolonias from M. Kegeljan.

Flowering Plants.—Well cultivated, and, above all, of splendid form and colour, were the Gloxinias of M. Kegeljan, to whom a gold medal was unanimously awarded with the congratulations of the jury.

Orchids.—Five good exhibits were staged:—1. A mixed collection, from M. Peeters, of Brussels, composed of sixty-five specimens, comprising Cattleya Mossiæ, Mendelii, Gaskelliana, and gigas; a good Lælia purpurata, a Dendrobium Geriberti, and some excellent varieties of Odontoglossums Harryanum and crispum. 2. A collection of Cattleya and Lælia; noticeable amongst them was a good Cattleya gigas, an unusual variety as regards the size and colouring of the flowers; a fine variety of Cattleya Mendelii, and of C. Mossiæ Wagneri (alba). 3. A collection from M. J. Hye-Leysen, containing chiefly Odontoglossums, amongst which was O. tentaculatum, an excellent variety; O. cuspidatum, with two flower-spikes, each nearly 3 feet long; a good specimen of Odontoglossum luteo-purpureum; Cypripedium orphanum, Cattleya gigas, Mendelii, &c. 4. M. le Président Ferd. Kegeljan, sent some fine plants of Miltonia vexillaria var. Cobbiana; Cattleya Gaskelliana and Mossiæ, Oncidium macranthum, some beautiful varieties of Odontoglossum crispum, a very well-flowered plant of Maxillaria tenuifolia. 5. In the collection of M. Massange, of Louvrex, there were some good varieties of Cypripedium and Odontoglossum.

Roses.—The exhibits of cut Roses of all sorts were as well set out by some amateurs as by professional rosarians and nurserymen. The collection of



Fig. 13.—THE OLD CEDAR IN CHELSEA PHYSIC GARDEN. (see p. 74.)

of delicate foliage; Phaius Humbloti, a very fine variety; Dichorizandra taeniensis (1st prize for good cultivation), was commended as a rock-plant for greenhouses; Cocos minima pulchra, more compact than C. Weddelliana. Among the new Ferns shown by M. Ed. Pynaert we must mention:—Davallia fijiensis plumosa, an exceedingly graceful variety; Pleopeltis picta, with large palmate leaves, which are very effective; Selaginella gracilis, a charming species, of vigorous growth, finer and more delicate in form than S. Wallichi; Adiantum rhodophyllum, very distinct; Adiantum Weigandi, highly ornamental, vigorous, and of rapid growth. The prize for good cultivation of a newly introduced plant was awarded to a Corypha decora (Queensland), an elegant Palm, resembling Thrinax filifera, with long hanging filaments; is very hardy and vigorous. The prize for a plant in flower produced from seed and raised by the exhibitor, was awarded to MM. Soupert and Notting was equally comprehensive and praiseworthy.

Sulphated Raffia.—Horticulturists and nurserymen who constantly use Raffia know that this ligature, in spite of its many good qualities, possesses one defect; it is apt to decay rapidly if exposed to damp. This drawback can be, in great measure, remedied by steeping the fibre in a solution of copper sulphate. The raffia, thus sulphated, lasts four times as long as does the natural fibre. The strength of the solution used is in the proportion of about 2 lb. of the sulphate (blue vitriol) to 22 gals. of water.

Bisley Camp.—Those who were acquainted with the barrenness of the poor sandy soil of Bisley Common, will be surprised on observing what a beautiful turf has been produced there within the last twelve months by sowing Messrs. J. Carter & Co.'s seeds of grasses adapted for this kind of soil.

THE UTILITY OF FORESTS.

The following extracts are taken from a valuable paper of Dr. Schlich, read recently before the Society of Arts:—

As far as our knowledge goes at present, the following summary indicates generally the utility of forests in the economy of man and of Nature:

1. Forests supply timber, fuel, and other forest produce.

2. They offer a convenient opportunity for the investment of capital, and for enterprise.

3. They produce a demand for labour in their management and working, as well as in a variety of industries which depend on forests for their raw material.

4. They reduce the temperature of the air and soil to a moderate extent, and render the climate more equable.

5. They increase the relative humidity of the air, and reduce evaporation to a considerable extent.

6. They tend to increase the rainfall.

7. They help to regulate the water supply, insure a more sustained feeding of springs, tend to reduce violent floods, and render the flow of water in rivers more continuous.

8. They assist in preventing land-slips, avalanches, the silting up of rivers and low lands, and arrest moving sands.

9. They reduce the velocity of air currents, protect adjoining fields against cold or dry winds, and afford shelter to cattle, game, and useful birds.

10. They assist in the production of oxygen and ozone.

11. They may, under certain conditions, improve the healthiness of a country, and under others endanger it.

12. They increase the artistic beauty of a country.

At the present moment the forest area in the countries of Europe ranges from 4 per cent. of their total areas to 48 per cent., namely:—United Kingdom, 4 per cent.; Holland, 7; France, 16; Norway, 25; Germany, 26; Hungary, 29; Austria Proper, 33; Sweden, 42; Russia, 42; and Servia, 48.

Even a superficial consideration will show that Great Britain, with its extensive coal-fields, iron industry, seabound situation, minute system of railways, and moist climate, does not require as much forest as, for instance, Russia, which is subject to conditions of an almost opposite nature, or even Germany, as long as the necessary timber can be obtained at a reasonable rate from other countries. Whether the latter will be always practicable is, however, by no means assured. During the years 1883—87, for instance, we have imported nearly 6,000,000 loads of timber every year from the following countries:—

	Loads.
Russia (northern ports)	1,333,139
Sweden	1,506,852
Norway	728,111
Germany	346,189
France	348,771
The United States of America ...	373,089
Total	4,636,151
Canada	1,233,516
Grand total	5,869,667

Of this material about four and a half millions were from countries over which the British Government has no control; and even as regards the colony of Canada, it can only advise. It follows that these sources of supply may fail either from a gradual exhaustion of the forests or from political reasons. Now, all the timber included in the above figures is of such a nature that it could be replaced by timber grown in these islands. It is also a fact that the United Kingdom contains an area of 26,757,000 acres of barren mountain land, bog, marsh, waste land, &c., of which a considerable portion is fit to produce timber, and it has, consequently, been urged that such lands should be brought under forest. The difficulties which face such a scheme are no doubt great; the lands in question are private property; they are in many cases required for grazing purposes; the creation of forests requires a certain outlay, and they would not yield any substantial return until after a considerable lapse of time. Moreover, the present prices of timber are very low, whereas waste lands let as shooting-grounds give immediate and very often substantial returns.

And yet a good deal could be done towards increasing the area of our forests, without interfering with present returns to any appreciable extent. To proceed in a wholesale fashion in such a case is always courting failure at the very outset. On the other hand, the returns from many of the estates could be considerably increased by putting the better parts of the land under wood.

Only a few months ago, I passed over an extensive tract of land which is now let for deer-shooting, at an annual rent of £2000. On inquiry, I found that the area included in the lease amounted to about 30,000 acres, so that the owner received about 1*s.* 4*d.* per acre a year, which is, after all, not a very high return. A good portion of the land was situated above the upper limit of profitable tree growing, but a big slice contained unmistakeable signs of having once been a very fine Scotch Pine forest. Indeed, I saw there the biggest Scotch Pine tree which I have ever seen. Now this land could be made to yield a great deal more than 1*s.* 4*d.* per acre, if stocked with Scotch Pine, an operation which, if done judiciously, need not reduce the rental from deer-shooting. I have seen many other similar cases in Scotland, where the yielding power of estates could be considerably increased if their management was approached in a somewhat more enlightened manner.

The rise of the scientific and systematic treatment of the forests in Germany was principally inaugurated by three men—Hartig, Cotta, and Hundeshagen—who were followed by quite a host of others up to the present day. The result of their labours is, that in no country of the world are forests treated in an equally efficient manner, and other nations had from time to time to go to Germany to learn what really successful forest management implies. In Germany, an area of 34,350,000 acres, equal to 26 per cent. of the total area, is at present under forest.

The Study of Forestry.

Forestry ascertains the principles according to which forests should be managed, and applies these principles to their treatment. The first part is called "forest science," and the latter "practical forestry."

As forests occupy a portion of the land, it follows that forestry really forms part of agriculture in its widest sense; it is essentially an "industry." As long as the land of a country is valueless, or nearly so, this is not felt; but in the same degree as the value of the land rises, the industrial character of forestry becomes more and more apparent, and in the more civilised countries, especially of Europe, forestry is expected to teach how forests should be managed, so as to realise, in the most advantageous manner, the objects for which they are maintained. Now, this opens up the whole question: "The objects for which forests are maintained." What are these objects? The answer is a long one, but it may perhaps be condensed to the following points:—

1. The object of maintaining a forest may be to yield produce of a definite description; for instance, trees which give a certain class of timber or other produce fit for particular purposes, or trees and shrubs of special beauty.

2. In other cases the object may be to produce the greatest possible quantity of wood or other produce per acre and year; for instance, a proprietor requires annually a certain amount of timber and fuel for his estate, but does not wish to set aside for this purpose more area than he can absolutely help; in this case the management would have to be so arranged that each acre yields the highest possible quantity of produce.

3. In other cases the owner desires to derive the highest possible annual income from his land.

4. In other cases the owner seeks to derive the highest possible interest on the invested capital, cases by no means identical with those mentioned under 3, because the different methods of treatment require different amounts of capital, and yield different returns.

5. In many cases the object is to produce certain indirect effects; for instance, to influence the climate of a country, to regulate its drainage, preserve the stability of the surface soil; prevent landslips, sudden floods, the silting up of low lands, the formation of avalanches; afford protection against cold or hot winds, &c.

Now each of these, and many other cases, demands a distinct method of treatment, and probably also the growing of particular species of trees; but the matter does not end here. An essential point of rational forestry is not to injure the permanent value of the property in realising the particular object of management. On the contrary, the management should be so arranged that the present generation takes only its proper share, nor should future generations be favoured at the expense of the present; in other words, the land should be made to yield now as much as it can, without endangering its yield capacity in the future.

It is the business of the forester to deal with all the questions involved in the above-mentioned matters. There are people who understand, under a "forester," a man who goes about with a heavy axe over his shoulder, and a couple of pruning instruments by his side, ready to cut and to prune as he goes along, and who, at certain times of the year, plants young trees where old ones have been removed. Such a man is no doubt a forester—in fact, a practical forester, or woodman. At the same time, the State or other large owner would be very foolish to entrust the decision of all the intricate questions on which I have touched to a man of that class. To deal with the questions of forest policy generally, and to devise the system of management applicable to forests under varying conditions, requires something more than the capacity to swing an axe and to plant a tree. An expert who can be safely left to deal with these matters must be skilled not only in practical forestry, but also in forest science; and the question now before us is, what does this imply? Well, it means that a forest expert requires, in the first place, to be an educated man, with a well-trained mind. But this is not enough; he requires also a knowledge of special branches of learning. He must be acquainted with the elements of law and of political economy, so as to judge of the provisions of the forest laws, and understand forest questions in so far as they concern the welfare of the State as a whole. Next, he must be acquainted with chemistry and physics, or else how could he understand geology, mineralogy, zoology, and botany, which form the very foundation of his business? One of the principal requirements of a forest expert is to understand the effect of soil and climate upon forest vegetation, and *vice versâ*. For this purpose, he must be acquainted with the chemical and physical qualities of the soil, with the factors of the climate, heat, light, the movement of moisture in Nature, the law of air currents, &c. Then, botany in all its branches is indispensable, because the forest expert must not only be capable of determining the various constituents of forest vegetation, but he must also understand the mode of growth of trees and plants, and the diseases which plants, especially fungi, bring to trees. And last, but not least, he must understand entomology, which deals with the insect enemies of forests.

(To be continued.)

PLANTS AND THEIR CULTURE.

The Greenhouse.—It is of great importance that the New Holland plants should not suffer for want of proper watering, and rain-water should always be used for them, other kinds of plants, especially the soft-wooded kinds, being watered with river or pond water if the supply is short. Mildew is at this season much to be feared on soft-wooded Ericas, and it spreads with such rapidity that the plants are ruined often before it is noticed. Flowers-of-sulphur

is the best that we know of, although there are special fungicides recommended by dealers. Any plants that have made their growth will be better if placed in the open air to mature, but protecting the roots from the sun by plunging the pots in coal-ashes, or in other ways. Repotting of such plants as are growing freely may be undertaken, and great care should be taken when watering these for some time afterwards. Epacris need a like treatment to the Ericas, that is, plants which bloomed early, and have made their growth, should be placed in the open air. The large growing plants, such as Acacias, Coronillas, and Grevilleas will do much better by being placed in the open air for the next three months. The early Vallota purpurea will be showing bloom, and should be afforded weak liquid-manure once a week. Successions of this plant should be put in a light place to prevent etiolation of the flower-stalks. Vallotas are very useful for decoration, and should be more largely grown than they are. Another good bulbous plant is Schizostylis coccinea, which will soon commence to grow, and should be potted, and placed on a coal-ash bed. I prefer single bulbs or roots in 5-inch pots to larger pots, the flower-spikes being larger. The masses of roots may now be divided, and they will make good progress if given a small amount of shade for a short time. A few early bulbs of Lachenalias should be started, it being much the better practice to repot before new roots appear, and thus prevent the injury that always results if they are left till the roots get entangled.

The Ixias, now past their best, may receive less and less water, and the bulbs be ripened off. These will do service another season, and should, when ripe, be shaken out, and placed in a cool dry place. Irises, also useful in pots, giving a lot of fine blooms, should get similar treatment to the foregoing.

Tritonias, now freely growing, may get assistance from liquid manure. Our plants have been in the air for the last two months, and are now very strong. These plants are sometimes kept for years in the same pots, but they should be shifted every year, they well repay the labour entailed. The earliest of these will soon be in bloom if taken into the greenhouse. Gladiolus require the same treatment; also the useful Hyacinthus candicans. These last two are effective plants for a cool conservatory, lasting a long time in good condition. Many kinds of greenhouse plants will now take weak liquid manure freely, especially climbers. See to the timely regulating and training of the latter. Primulas and Cinerarias should be repotted, and a sowing of the latter made, for late spring flowering. A sowing of Calceolaria seed should be made, for the main display of these plants, putting the pans in a frame or hand-glass facing north. Well moisten the pans of soil before sowing.

Chrysanthemums should be staked and tied, and a sharp watch kept for mildew, which is a troublesome malady if remedies be not applied at an early date. Dusting with sulphur in a dry state, or mixed with water and applied with the syringe, is the best cure for mildew. Aphis must be destroyed with tobacco-powder, well dusted into the points of the shoots. We have all this season been troubled a little with the leaf-miner, and the only way to get rid of this insect is to squeeze affected leaves between the finger and thumb. Syringing the plants in dry weather should be well attended to, and the potting of late kinds completed. *G. Wythes, Syon House, Brentford.*

The Orchid Houses.

East India-House.—A very equable temperature should be kept in this division, but the wide range of the outside temperature will make this work rather difficult of attainment, the nights and mornings being unseasonably cold. The warmth should be kept up to within a degree or two of that advised in my previous Calendars, for, if this be not done, spotting and decay of the leaves will be likely to follow; more especially those of Phalænopsis, which would point to the necessity there is of keeping the hot-water pipes warm enough, to allow of air being given by night as well as by day, both top and bottom ventilators being made use of, and to the plants being kept drier at the root in dull weather.

The growths of Phaius tuberculosus, P. Humblotii, and P. Henryii are now pushing up, and much care must be taken to prevent thrips establishing themselves on them, as disfigurement of the leaves of the young growths will follow, they being bruised by even a camel's-hair pencil, if carelessly used.

Angræcum caudatum, when throwing up flower-spikes, is liable to the attacks of thrips, and should often be examined. It is a useful Orchid, coming in when few others bloom. Saccolabium Cœleste is now sending up spikes, and will also require close inspection, the flower-spikes being readily crippled before mischief is even suspected. S. Blumeii majus, now in flower, is an Orchid which is always admired; it is of free growth, and is much subject to be overrun by brown scale. Those who possess a plant of this species will do well to examine it for this kind of scale. Phalænopsis Mariæ, now in flower, is a charming thing, and is a plant that should be in every collection, however small, for it is free in growth, and when of some strength, a large branched spike of its beautiful flowers is produced. The night temperature of the East India-house should be kept near 75°, air being afforded at all times at this season of the year.

The Intermediate-house.—Odontoglossum grande will now require a good supply of water at the roots, and the plants will be the better if weak guano-water be given them once a week. Plants of Miltonia vexillaria out of flower may be repotted or surfaced as may be found necessary, peat and sphagnum moss, with a little silver-sand being employed for the work, and the plants dipped in a solution of soft-soap and tobacco-water previous to repotting, and kept rather dry for a few weeks or a month until the young roots have become established in the new material, otherwise black spots are apt to appear, at the tips of the leaves. Miltonia vexillaria can scarcely be given too much air at this season, and if the plants are placed close to the open ventilators, or near an open door, it will do them much good, the syringe being employed on them two or three times a day; and growth under these conditions is very vigorous.

Lælia harpophylla is now growing away; it is a plant that has done well in this place. Some growers advise a cooler house, but I have not yet tried this treatment, being satisfied with the growth it has made. The temperature for the intermediate-house should be 63° to 65°, the latter being the maximum during warm weather, the former that maintained by fire-heat. *A. G. Catt, Parkfield Gardens, Hallow.*

Fruits Under Glass.

Vines and Vineries. — Any of the pot Vines which have completed their growth should be syringed less and less, dry warmth being necessary to ripen them. On the other hand red spider must have no quarter, and the foliage must be preserved to the last clean and healthy. Newly-planted Vines must have every encouragement to grow, and a moist temperature is most conducive to this end. Remove tendrils and train in laterals, by this means increasing growth at the root. Afford ripening Muscats a circulation of dry, warm air, occasionally damping down the floors on warm, sunny days. A little warmth in the pipes at night is an advantage, and the grave dangers of a stagnant atmosphere will be averted, viz., of "spot" at the lower end of the berries of Muscats; of scalding of the berries in Lady Downes; and the cracking of Madresfield Court and other Grapes.

Inside borders should be kept well supplied with liquid manure up to the time when black Grapes have commenced to colour, but not during the remainder of the period of colouring, as it spoils finish. Where the rainfall has been small, the watering of outside borders should receive attention.

Fluctuation of temperature in the houses, unhealthy root action, overcropping, and draughts are general causes of shanking, and should be specially avoided.

The Fig-Houses.—The earliest trees, whose fruits are now gathered, are apt to be infested with the red-spider, and no opportunity should be neglected of cleaning the foliage by heavy syringing, or the next season's crop will suffer in consequence. Thin out the second crop of Figs, removing deformed and misplaced fruits, and afterwards the thin long-stalked ones, as it is always advisable to take a light second crop, if the trees are expected to yield forced figs plentifully next season. Remove by instalments spray wood, and any fruitless branches, and do not stop any shoots that form after this date; and preserve all recently-formed leaves, for it is at the base of these that the Figs are being formed which will furnish next season's crop. Do not train too rigidly, and allow the shoots to point upwards, so as to face the light. See that the trees are supplied with liquid manure and soot water, and induce the roots to come to the surface by occasional top dressings and mulchings of spent manure. Remove precocious young trees which are in pots outside to sunny positions, where they should be plunged in coal ashes, and supply them with liquid manure, moderately. Later trees with ripening fruit should have a fairly dry air, and in dull weather a little fire heat to create buoyancy of the air. Figs in unheated wall cases should be encouraged to ripen their fruits, and young wood which should be kept thinly apart. I give my preference to trees trained on walls or trellises near the glass, to any kind of bush.

Bananas.—Where houses are devoted to this class of fruit, they may have similar treatment to Pine-apples, and any well-developed plants should be urged to throw up their flower spikes. *W. Crump, Madresfield Court, Malvern.*

The Kitchen Garden.

Preparations should be made for sowing the Cabbage seed for the main crop of spring Cabbages. I generally make two sowings, the first about the 21st, and the second about a fortnight later; and for several years I have noticed that the plants raised from the first sowing do better than the others. If good and true Cabbage seed be obtained, there is less danger of bolting occurring before hearting. For this important crop not less than four varieties should be grown, and I would always include Ellam's Early and Mein's No. 1. The first of these fine Cabbages may with advantage be planted at 12 inches apart; but the larger growers should be allowed greater space. Sow the seed thinly in shallow drills, 6 inches apart, on well-prepared beds, and just cover it—no more. See that each bed is correctly labelled, and in case the labels should get removed, it is advisable to make a note of the order of sowing. Spread a net over the beds to protect the seeds from birds, or failing a net, roll the seed before sowing when wetted with milk in some finely-powdered red lead. A bed of the Red Dutch Cabbage should be sown at the same time, and in the same manner, as the other Cabbage seeds.

Carrots.—For drawing when young, a sowing of the early Nantes or other Horn Carrots, should be made; and where the ravages of wireworm have to be guarded against, the quantity of land sown should not be stinted. The land should be in good heart, but not recently manured, then the Carrots will readily grow to a good size, supplying most satisfactorily a much-enjoyed vegetable.

Celery.—Plant out Celery from the later sowings, keeping plenty of soil about the roots when lifting them from the bed, and keep them well supplied with water in dry weather. The early planted out Celery plants now growing apace should be afforded manure water occasionally, and kept clear of weeds and of suckers; the earthing-up being left till the plants have attained almost to full size.

Lettuces.—Seed, in greater quantity than before, may be sown so as to be able to keep up the stock of plants for autumn use. Tie up the heads to blanch when they are dry, and large enough for use. Lift Shallots and Garlic when ready, and dry in the shade. These bulbs quickly commence to grow if not taken up when the tops turn yellow. Keep the tops of Tripoli Onions bent down to induce the bulbs to grow in size, and water them occasionally with weak guano water or dung water from the farm yard, diluted to a safe degree of strength. *H. Markham, Mereworth Castle, Maidstone.*

Another Formula for the Copper Solution.—We find in the *Illustration Horticole* the following prescription:—Two kilos. of sulphate of copper (say 4½ lb.), dissolved in 15 litres (say 3¼ gals.) of water. To the solution add 3 kilos. (say 6½ lb.) of soda crystals (carbonate of soda). A precipitate of copper oxide takes place, and when this is fully accomplished, 200 to 500 grammes (say 7 to 17 oz. by weight) of molasses are added. Let the whole stand for twelve hours, and then add 100 litres (22 gallons) of water. The mixture so obtained is of a deep green colour, and adheres to the leaves and fruit without burning them.

EDITORIAL NOTICES.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, JULY 22 { Royal Horticultural Society: Carnation and Fern Conference at Chiswick (two days).

SHOWS.

TUESDAY, JULY 22 { National Carnation Society (at Chiswick). Tibshelf. Leeds International Exhibition (three days).

WEDNESDAY JULY 23—Loughborough.

THURSDAY, JULY 24—Salterhebble.

FRIDAY, JULY 25 { Broughty Ferry (two days). Wilmslow and Alderley (two days).

SALES.

TUESDAY, JULY 22 { Imported Orchids, at Protheroe & Morris' Rooms.

WEDNESDAY, JULY 23 { Established Orchids, at Seeger & Tropp's Nursery, East Dulwich, by Protheroe & Morris.

THURSDAY, JULY 24 { Collection of Orchids, chiefly in Flower, at Stevens' Rooms.

FRIDAY, JULY 25 { Established and Imported Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°.4.

The Physic Garden at Chelsea.

THIS old garden, of which we give illustrations in our present issue, is rich in memories of DOODY, PETIVER, Sir HANS SLOANE, PHILIP MILLER, JAMES SHERARD, DALE, RAND, HUDSON, CURTIS, FORSYTH, WARD, FORTUNE, and other horticultural and botanical worthies of the past. EVELYN mentions it, and LINNÆUS paid it a visit. In more recent times LINDLEY lectured therein, as Mr. BAKER now does, in both cases, to the great profit of the students. The name of the last Curator, Mr. THOMAS MOORE (who succeeded FORTUNE) will never be effaced from the horticultural register. This garden has been maintained for more than two centuries with varying fortunes by the Society of Apothecaries, and more than once it has been proposed, as it is now, to abandon it. The mistaken policy of the authorities in virtually banishing botany from even the preliminary education of medical students, the difficulty of maintaining a garden in good condition amid the smoke and fogs and slums of Chelsea, and the cost of the up-keep, have no doubt influenced the Society, and given substance to the rumour that the garden is to be abandoned by it. The untoward circumstances we have just mentioned have, however, materially lost force of late years. The construction of the Chelsea Embankment, on the one side, and of Battersea Park on the opposite side of the river, the removal of many of the miserable tenements in the immediate neighbourhood, have very materially changed matters for the better. The value of the property has consequently increased to such an extent, that it is no wonder that the ground landlord should be desirous of getting the garden into his hands. According to the statement in FIELD'S *Memoirs of the Botanic Garden at Chelsea* (at p. 38), as edited in 1878 by Dr. SEMPLE, the freehold belongs to Lord CADOGAN, the representative of Sir HANS SLOANE, and it is leased to the Society at a nominal rent. In case of the Society declining or neglecting to maintain it, or applying it to any other than scientific purposes, the Royal Society, or the Royal College of Physicians, may become the occupiers of the ground on the same conditions as those imposed upon the Society of Apothecaries, but if both these bodies decline the offer, then the property reverts to the descendants of Sir HANS SLOANE. A committee has been appointed by the Royal Society to consider the present state of affairs; and, considering the need there is for a Botanic Garden within easy reach of the schools and colleges of the metropolis, it is to be hoped that (setting aside sentimental reasons, which, however, have not very much effect when financial obstacles are opposed to them), some arrangement may be come to whereby this old garden may be preserved. It still renders good service, and has great possibilities for doing more.

The present tendency is to ignore the morphology and classification of the higher plants, and to exalt microscopical anatomy and physiology. This is a great misfortune. All departments of the science are important, and each should be made to co-operate with others. In the German and French universities—even the smaller ones—there are at least two, sometimes more, professorships of botany, so that the interests of each department are secured. It is to be hoped that the Society of Apothecaries, faithful to its old tradition, will continue to maintain the old garden as a means of promoting the study of the natural orders and classification of plants, medicinal and other. There is great need for such a garden and for such tuition in London, and there is a great opportunity for the Society to take the lead in teaching some other department of botany besides section-cutting. Except, perhaps, at the Pharmaceutical Society, there is now no public establishment in London where instruction in the natural orders and a knowledge of common plants is given.

As to the importance of preserving the garden as an open space, we need say nothing. The Society of Apothecaries has always held broad and enlightened views as to the education of medical students, and was the pioneer in many of the reforms of which other bodies are getting the advantage, and for which the public erroneously give them credit. Of late years the Society has, amongst other things, offered prizes to young women for proficiency in botany, and these prizes and certificates have been much sought after and valued by young women proposing to become governesses and teachers. We learn that this year the candidates, though few in number, passed an examination in practical botany, and showed themselves, under the circumstances, much above the general average. The diffusion of a knowledge of scientific method, the stimulation of the faculties of observation and correct induction, are matters of the utmost importance, and there are no means of promoting them more efficaciously than a thorough training in natural science, and particularly of botany, a study which has all the advantages and none of the disadvantages of other branches of science.

A crowded meeting was held at Chelsea on Wednesday last, the Earl of MEATH in the chair and at which were present the member for Chelsea C. A. Whitmore, Esq., J. Westlake, Q.C., Professor Flower, Conrad Dillon, Esq., representatives of local clergy, and many others. Letters of sympathy were read from the President of the Royal Society (Sir George Stokes, M.P.), Lord Ripon, Mr. Leonard Courtenay, and others. Speeches were made in favour of retaining the gardens, provided the Royal Society and the College of Physicians will not accept the charge of the garden, and it should, in consequence, fall to the heir of the Cadogan family, as by Sir Hans Sloane's will it was so devised. It was resolved that representations be made to Lord Cadogan requesting him to grant it as an open space for public use. Several speeches were made, pointing out the great need that there was to preserve every open space in the metropolis, not only for the benefit of the present generation, but still more so for those who come after, and when it may be supposed that London will be still more crowded than it now is. Mr. T. Christy spoke of the advantages of keeping it as a botanic garden, and cited the case of the Jardin des Plantes in Paris, with its numerous students from all parts of the civilized world. He said also that botany should be taught in schools as a matter of course, and that it was as much needed as many other subjects that are taught in them.

Professor Flower thought that some alteration should be made in the main resolution, so that it should read—"The Apothecaries' Society being desirous of giving up the tenancy of the Physic Gardens, Chelsea, steps should be taken to acquire it as an open space for public use."

HOWEIA BELMOREANA.*—A PALM, discovered by Messrs. MOORE and CARRON on Lord Howe's Island, and attaining a height of about 35 feet. It is called by the inhabitants Curly Palm. Its pinnæ are directed upwards. H. Forsteriana was also found by Messrs. MOORE and CARRON, and is known as the Thatch Palm, or the Flat-leaved Palm. The trunk is said to be thicker and paler than that of H. Belmoreana, and the pinnæ deflexed. The leaves are used in constructing thatch. As we have not seen the flowers or fruit of these Palms, we can only adopt the conclusions of those who have done so. MUELLER himself says, that they are almost sufficiently distinct to warrant being placed in a separate genus, and this was done by DRUDE, who unfortunately applied to them the name of Grisebachia, but as that name was attributed previously to a genus of Ericaceæ, Beccari named the genus Howeia. Under the latter name, botanists will rank the Palms in question; although in gardens it is hardly likely they will be displaced from Kentia. Some doubts exist as to whether the two species named are not really forms of one and the same. In gardens it is usual, says Mr. WATSON, to distinguish these two Palms by the colour of the leaf-stalks, H. Forsteriana (not Fosteriana) having dark green stalks and broad pinnæ; H. Belmoreana (not Balmoreana) having

* Howeia Belmoreana et H. Forsteriana, Beccari *Malesia*, i., p. 66, Watson, in *Gardeners' Chronicle*, Dec. 12, 1885, p. 749, Kentia Belmoreana et K. Forsteriana, C. Moore et Mueller in Mueller *Fragment*, vii., p. 99 (1870). Watson loc. cit. Grisebachia, Drude, nomen delendum.

red leaf-stalks and relatively narrow pinnæ. But all these characters have been observed in seedlings from the same batch of seed imported as K. Forsteriana. Mr. Moore, as will be seen in the illustration, taken from a photograph kindly sent by him of plants growing in the Sydney Botanic Garden, relies on the upward direction of the leaves in H. Belmoreana, as compared with their downward tendency in H. Forsteriana. H. australis is also supposed to belong to the same species. "Full-grown plants have a stem 35 feet high, smooth, annulated, bearing a crown of shining green leaves, which are 8 feet long, pinnate, the segments numerous and acuminate, and gracefully arching, as also is the whole leaf." (Watson, *l.c.*) They are in high favour with decorators for their elegance and hardihood, as they support the unfavourable conditions of the drawing-room better than any other Palm.



Howeia (Kentia) Forsteriana, with arching leaves.

Howeia (Kentia) Belmoreana, with leaves of a more erect tendency.

Fig. 14.—two popular palms.

How Botany is Taught.—Captain Elwes was justified in his comment on section-cutting botanists made in the course of his recent lecture on Lilies at the Royal Horticultural Society. The coming generation put their trust in section-cutting as much too exclusively as their predecessors neglected it. At a recent examination, a question was asked as to the natural orders to which certain common trees belong. Here are the replies as furnished to the examiner by some of the candidates:—Oak—Malvaceæ and Sapindaceæ; Ash—Tiliaceæ and Cyperaceæ; Elm—Cruciferæ; Poplar—Aceraceæ; Willow—Aceraceæ, Miliaceæ (sic); Hornbeam—Cruciferæ, Magnoliaceæ.

Royal Horticultural Society.—We have received the following notification from the Assistant Secretary:—"Lovers of edible fruits will, no doubt, be pleased to learn that the Royal Horticultural Society has decided to hold a great exhibition of jams, bottled, preserved, and dried fruits of all kinds, in the Drill Hall, James Street, Victoria Street, Westminster, for three entire consecutive days in October next, viz., on the 14th, 15th, and 16th. The chief object of the exhibition will be to show the public the great advance which has been made during the last quarter of a century in the methods and processes of preserving and drying edible fruits for consumption. Meritorious awards will be made to exhibitors (by the Council of the Royal Horticultural Society), whose preserves shall have been considered worthyof the same by competent judges. A schedule is being prepared, and will be circulated in due course. In the meantime, all particulars and information regarding the proposed exhibition may be had on application to the Secretary of the Royal Horticultural Society, 117, Victoria Street, S.W."

National Chrysanthemum Society.—A well attended meeting of the committee of this Society took place at Anderton's Hotel, Fleet Street, E.C., on the 14th inst. Mr. R. Ballantine presiding. Mrs. Marian Thrower, the duly accredited representative of the Northern Tasmanian Horticultural Society was present, and after the reading of the

minutes, an address of welcome was presented to Mrs. Thrower, who is a cultivator and exhibitor of Chrysanthemums at Tasmania; and the lady read a suitable reply. It was ordered that the address and Mrs. Thrower's reply, which was of a very interesting character, dealing with the culture of the Chrysanthemums at the Antipodes, be entered upon the minutes of the Society. The Hon. Secretary read letters from the Duke of Sutherland, the Duke of Westminster, Lord Rothschild, and the Right Hon. J. Chamberlain, M.P., consenting to become patrons of the Centenary Exhibition to take place in November next, the Duke of Westminster also enclosing a donation of 5 guineas. Letters were also read from several Chrysanthemum Societies in Australia, the Northern Tasmanian Society sending a donation of 2 guineas to the Centenary Fund, and 5 guineas for the medals of the Society. Thirteen Societies were admitted to affiliation, and twenty-three members, including four Fellows, were elected. An interim report was made by the Conference Sub-committee in reference to the Conference to take place in connection with the Centenary Exhibition. It was resolved that the annual outing of the members take place on July 25, the arrangements being left in the hands of Mr. William Holmes.

The Gardeners' Orphan Fund.—Before this number is in the hands of most of our readers, the annual election will have been held, and the annual dinner disposed of. The duty of providing for the orphans has been generally recognised, and we have no doubt will continue to be so. The genial manner and business capacity of the Chairman of the committee will be much missed, but we shall hope to hear of the establishment of a Deal Memorial Fund in connection with the Orphan Fund he took so much interest in.—A special meeting of the committee took place at the Caledonian Hotel on the 14th inst., Mr. John Laing in the chair. It was unanimously resolved that the Secretary should write a letter of condolence and sympathy to Mrs. Deal on the loss of her husband, the late Mr. George Deal. Some special donations were announced, including £6 6*s.* 6*d.* from Mr. Ford, Richmond, the proceeds of a Rose-stall at the recent show; £15 11*s.* from Mr. G. W. Cummins, the proceeds of a Rose-fair, held in connection with the Croydon Horticultural Society; and a donation of £5 from Arthur W. Sutton, of Reading. The subject of a suggested memorial to Mr. Deal—something related to the Gardeners' Orphan Fund—was mentioned, and the Secretary stated that Mr. N. Sherwood, who had consented to preside at the annual meeting of the fund, would bring the matter forward, with a view to some action being taken. The necessary arrangements for the proceedings of the annual meeting were made. A letter was read from the Rev. H. H. D'Ombrain, offering the use of the room of the Horticultural Club at the Hotel Windsor for the meetings of the committee, which offer was accepted.

Chiswick.—We earnestly hope to see a good gathering at Chiswick on Tuesday and Wednesday next, when Ferns and Carnations are to be the specialties, and papers are to be read on them, and the merits of the plants discussed. Chiswick is easily reached by the District Railway to Acton Green. Passengers may also alight at Turnham Green from the Metropolitan and South Western Railways, and at Gunnersbury, from the North London and South Western Railway lines.

United Horticultural Benefit and Provident Society.—The quarterly meeting of the above Society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday evening last, Mr. Nathan Cole in the Chair. Seven new members were elected, making a total of fifty for the half-year. There is but one sick member on the funds. One death has occurred during the quarter, and the amount of £25 10*s.* 3½*d.* standing in the ledger to the credit of the late member, was paid to the widow (Mrs. Hannah Back). The Treasurer reported that he had invested £200 in 2¾ per cent. Consols since the last meeting. The Convalescent Fund is progressing favourably. A vote of condolence was accorded to Mr. H. Williams on the death of his father, Mr. B. S. Williams, who was one of the Society's oldest honorary members. The usual business having been transacted, a vote of thanks to the Chairman ended the meeting.

"Kew Bulletin."—The current number contains articles on the cultivation of Anotta in West Africa, and on the preservation of grain from Weevils, for which the employment of bisulphide of carbon, 1½ lb. to the ton, is recommended. A ball of tow is tied on the end of a stick long enough to be plunged to the middle of the vessel holding the grain. The tow is soaked in the liquid bisulphide, and immediately thrust into the vessel. Naphthaline in powder is recommended for the same purpose, applied by means of a tube or funnel. The naphthaline evaporates, kills the insects, and in no wise injures the grain. Colombian India-rubber comes also under notice. This is said to be the produce of one of the many varieties of Sapium biglandulosum. The tree grows at higher elevations than most of its race, and is in consequence adapted for a cooler climate. The cultivation of Agave rigida in Bahamas is the subject of another note. The fibre is known as Sisal, and the progress of the culture in the Bahamas is described as something marvellous.

International Horticultural Congress.—A proposal has been made to form such a Congress in connection with the "World's Fair," at Chicago. The *American Garden* says, there is every reason to believe that a larger, a better, exhibition of horticultural products and devices than the world has yet seen, could be perfected at Chicago. We do not want, says our contemporary, a show merely, neither a mighty and fulsome conclave of societies and men, but we need to make a broad study of plant variation, of the adaptabilities of plants to all conditions of culture and climate, of species and varieties, and all other points in which the knowledge of plants touches the welfare of man.

Professor Plowright.—We are glad to learn that our correspondent has been elected a Professor of Comparative Anatomy and Physiology at the Royal College of Surgeons for the ensuing year. Professor Plowright will probably take the diseases of plants, especially those connected with parasitic fungi, as the text of the lectures it will be his duty to deliver. That a general practitioner in active practice in a country town should be selected for such a purpose by a metropolitan college is a well-earned testimony to Mr. Plowright's energy and skill. It is also an instance of appreciation on the part of the College, which it is pleasant to notice. We already know of phenomena of "heteroicism" in the case of the Entozoa. Perhaps Mr. Plowright may extend our knowledge in this direction, and be able to show that certain diseases under which we suffer are only forms of maladies to which other creatures are subjected, the difference resulting from the altered circumstances of the case, and the different appearances presented by the invading parasite.

Dahlias.—The exhibition of the National Dahlia Society will be held at the Crystal Palace on Friday and Saturday, September 5 and 6, while on September 23 a Conference on Dahlias will be held at Chiswick by the Royal Horticultural Society with the co-operation of the committee of the Dahlia Society. The paper on the history of the Dahlia, by Mr. Shirley Hibberd, printed in the report of the Dahlia Society is interesting historically, and will be of value to future Darwins in tracing the gradual evolution of the flower.

Fuchsia triphylla.—Mr. W. Dean sends us flowers of this old species, remarkable for its compact bushy habit, dark foliage, claret coloured on the under surface, and its terminal racemes of orange-scarlet flowers. Cuttings struck last autumn, and grown on in an intermediate house in ordinary potting mould, are now flowering freely in the Birmingham Botanic Garden. It would make a fine market plant.

Charcoal or no Charcoal for Orchids.—An interesting discussion is going on in the *Journal des Orchidées* as to the value of wood charcoal in potting Orchids. Count de Moran is an advocate for frequent repotting, and does not lay much stress on the employment of charcoal in the compost. He says very truly that the charcoal of itself contributes no food to the plant, but it certainly aërates the soil, and it is of advantage from its property of retaining gaseous ammonia to the profit of the plant.

"Botanical Magazine."—The following are the plants figured in this month's number:—

Luddemannia Pescatorei, t. 7123.—A species with ovoid, compressed pseudobulbs, giving off lanceolate, plicate leaves, and from the base of the pseudobulbs long, pendulous, many-flowered racemes of yellow flowers, in which the oblong sepals are marked with purplish stripes. It is a native of New Granada. *Glasnevin.*

Bignonia rugosa, t. 7124.—A native of Caraccas, having the compound leaves of the genus, but more or less covered with coarse hairs, with flowers in clusters; the calyx cup-shaped, the corollas primrose-yellow, about 2½ inches long, oblique, tubular, curved, with a limb dividing into five rounded retuse lobes. *Kew.*

Masdevallia Carderi, t. 7125.—One of the smaller, species, with long, wiry, deflexed flower-stalks, bearing a cup-shaped flower about three-quarters of an inch wide, with three long, slender, spreading tails. The cup is yellow near the base, striped with purple, and with a narrow ring of the same colour encircling the tube below the middle, above which it is white. The coloration is peculiar and elegant. Native of New Granada. *Kew.*

Asarum caudigerum, t. 7126.—Doubtless quite by accident this plant follows the Masdevallia Carderi, to the flowers of which, though so widely different, it presents no small resemblance, except in colour. It is a native of Southern China, and may be considered a botanical curiosity. *Kew.*

Hakea laurina, t. 7127.—This is the plant figured in our columns in 1885, vol. i., p. 148. It is a very handsome greenhouse shrub. Native of South-west Australia. *Kew.*

M. Godefroy-Lebeuf.—At the French Exhibition, M. Godefroy, of Argenteuil, near Paris, has a span-roofed house devoted to the exhibition and sale of Orchids. This is an instance of enterprise of an unusual character, and we wish it success.

Dutch Horticultural Society.—On the occasion of the meeting of the Floral Committee June 19, 1890, the following First-class Certificates were awarded:—To Mr. W. J. Van Lansberge, Heelsum, for Odontoglossum Schlieperianum luteum and for a collection of Masdevallia coccinea; to Messrs. E. H. Krelage & Son, Haarlem, for Allium cœruleum atrocœruleum with beautiful deep blue flowers; to Messrs. Anton Roozen & Son, Overveen, for a collection of cut flowers from Pæonia sinensis, in 150 varieties; to the Zoological Garden, Rotterdam, for Cattleya Mossiæ Madryæ; to Mr. C. G. Van Tubergen, Jun., Haarlem, for Eremurus Bungei; to Mr. J. A. Sanberg, Amsterdam, for Cochlearia Armoracia variegata, a very beautiful ornamental plant, which has proved constant for several years.

"Droppers."—Mr. Barr sends us specimens of these in the case of Chionodoxa Luciliæ. We have once more examined these "ephemeral" roots, and find them to have the microscopical structure of roots. The central vascular cylinder is invested by a thick mass of cellular tissue similar to that covering the aërial roots of Orchids, the cells containing, in this case, water. Mr. Barr points out that these peculiar formations are only produced in a certain proportion of the bulbs, even when all are growing

together. Mr. Barr also finds that the bulbs without this thickened root are comparatively superficial (2 to 3 inches beneath the surface); while the bulbs with this thickened root are buried at depths of from 3 to 6 inches. Other bulbs growing in a drier part of the nursery have finer roots and relatively few present these thickened fibres. These are interesting observations. What we should like to know, now, is whether there is any difference in mode of life between the two sets of bulbs. Will one set produce flower next season, the other not?—or if both flower, is there any difference in the time of blooming, or in the size of flower? These are questions which can only be answered on the ground, but in the reply to them will most probably be found the correct clue to the explanation of these curious structures.

Emigration.—According to information supplied by the Emigrants' Information Office, 31, Broadway, Westminster, S.W., male and female emigrants for Queensland, Western Australia, the Cape, and Natal, may, in certain cases, obtain, through friends or employers of labour in those colonies, passages at reduced rates. Queensland also offers free and assisted passages to unmarried female servants, sempstresses, miners, navvies, and farm labourers (but for male labour there is just now no demand in the colony), and Western Australia offers assisted passages to farmers with capital. Farmers and others with capital are wanted in all parts, female servants in Canada and Australasia agricultural labourers in Australasia, and miners in Tasmania and New Zealand. There is no special demand for mechanics, except in some few localities, as for carpenters and bricklayers in Natal. The demand for mechanics in Cape Colony has slackened, owing to the depression at the Transvaal gold-fields, and consequent return of large numbers of workmen to Cape Colony and Natal. Emigration to the Transvaal, under present circumstances, is not advised. It should be noted that it is too late in the year for men to go to Canada, unless they go to friends, or have enough money to keep them through the winter.

Small Fruit in Aberdeenshire.—The prospect in the neighbourhood of Aberdeen is favourable on the whole. The Strawberry crop, for which the district is noted, will, with bright sunshiny weather, be fully up to the average, there being generally a good appearance of berries, which now want strong sunshine to ripen them. Mr. S. Angus, Bonnymuir, Aberdeen, had the first picking of his Strawberry crop in the market last week, which is about the first in the locality. They are of the Eliza Rivers and Black Seedling varieties, and were from third years' plants. A new feature has been introduced into the fruit trade in Aberdeen this season, several fruiterers having opened auction sales for the disposal of fruit of all kinds, as in the large cities in the south. Black Currants are reported to have suffered from insects to an extent that will considerably affect the quantity produced in this district, but there is a good crop of Gooseberries, and red Currants are likely to be abundant.

"Timbers, and How to Know Them."—Dr. William Somerville, the newly-appointed lecturer on Forestry in the University of Edinburgh, has translated from the German the third edition of Dr. Hartig's work under the above title. It forms a small treatise of some eighty pages, with numerous illustrations. It is needless to say the book is good of its kind, and likely to be useful to beginners, especially if used as a guide-book and aid to the study of the woods themselves; but it is to be hoped that Dr. Somerville may be induced to extend it in a future edition by an introductory chapter relating to the formation and growth of wood in general, and the circumstances which favour or hinder those processes. Much might advantageously be added to the details relating to particular kinds of timber, such as the rate of growth under different conditions, the capacity for resistance, the specific gravity, &c. Dr. Hartig has a well-earned reputation as a botanist, but he hardly acted up to it when he suffered such a statement as this to pass:—"The 'Rose-wood' of commerce is got from various, especially Asiatic, species of trees!" Fig. 16, on p. 52, is said to refer to Platanus occidentalis, and it may be rightly, but we should have liked some assurance that the tree intended is not P. orientalis, which seems, on the whole, more probable. The statement that the wood of the Austrian Pine (P. Laricio var. austriaca) cannot be distinguished from resinous wood of the Scots Pine is one that, had it been made by anyone else but Professor Hartig, we should have ventured to question. At any rate, the timber of the true Corsican P. Laricio seems different from that of the Scots Pine. Dr. Hartig's is a good book for beginners, but we have more than one English botanist who could have produced a more satisfactory one.

Stock-taking: June.—It is pleasant to record an improvement in the figures of the Trade and Navigation Returns. The improvement is nearly an all-round one, and in value as well as quantity Lancashire shares largely in the good record; but the record of imports—or rather our abbreviated record—must speak for itself. The following is our usual extract from the monthly returns:—

	1889.	1890.	Difference.
	£.	£.	£.
Total value of imports	29,326,994	32,926,295	+3,599,301
§II.—(A.) Articles of food and drink—duty free	10,127,805	11,709,613	+1,581,808
(B.) — do., dutiable	1,663,593	1,530,486	—133,107
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	4,725,907	5,418,848	+692,941
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,422,480	3,663,424	+240,944
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	810,579	774,044	—36,535
(B.)—Parcel Post ...	32,979	39,804	+6,825

The value of the exports of British and Irish manufactures and products foot up at £21,532,817—or an increase of £2,836,100. The export of foreign and colonial products—much of which is grown upon or derived from the soil, shows a return to the columns indicating business for both shipper and shipowner; this section of the returns has had an unfavourable look for some months past. The reasons for this may not be of interest to our readers, so we pass to our usual excerpt from the pages devoted to the imports of fruit and vegetables for the month of June, as follows:—

	1889.	1890.	Difference
§ II. Fruit:—			
Apples, raw ... ... bush.	15,552	8,798	—6,754
Unenumerated, raw ... ,,	183,774	251,874	+68,100
Onions ... ... ,,	112,657	171,880	+59,223
Potatos ... ... cwt.	858,670	1,054,287	+195,617
Vegetables, raw, unenumerated ... ... Value	£70,162	£101,565	+£31,403

Hyacinth La Tour d'Auvergne.—This old, double-flowered white Hyacinth is said to be well adapted for blooming at Christmas. If planted close together in boxes, in ordinary Hyacinth soil, soon after the arrival of the bulbs from Holland, and the boxes buried in a bed of cocoa fibre refuse, in the open, the bulbs start into growth quickly, and are then removed to a cold house for a fortnight before being pushed on into bloom in heat.

The Potato Disease.—At present we have not heard much of it this season, but we may soon expect to do so. In this anticipation, we once more call attention to the remarkable results obtained at Chiswick by the adoption, even tardily, of Mr. Jensen's system. It is a singular fact that, although a report was duly made, it finds no place in the *Journal* of the Society. We may also again call attention to the undoubted value of copper-sulphate in the partial destruction of the Potato mildew, and for that of the Tomato. In a wooden-tub, 1½ kilogramme (= 4 lb. 6 oz.) of sulphate of copper is thoroughly dissolved in 96 litres (= 21 gallons) of water. In a second tub ½ kilo. of quick-lime is slaked by the addition of water. To this 4 litres (3—4 quarts) of water are added. The lime-water so prepared is passed through a sieve to extract impurities, and poured into the solution of copper-sulphate, a beautiful blue liquid is produced, which is applied by means of a spray-pump, which should be wholly of brass or copper. We trust the Royal Horticultural Society will carry out some experiments at Chiswick in the case of the Tomato and of the Potato. The solution should be absolutely clear, otherwise some of the copper sulphate remains unoxidised, to the detriment of the plant. If not clear, more lime should be added. The effect of adding lime to the copper solution is to transfer the sulphuric acid of the copper sulphate to the lime, forming a sulphate of lime, and leaving the copper in the form of oxide. So long as any copper sulphate remains, there is danger that it will injure the plant, it is the copper oxide that is destructive to the fungus, but not to the plant, and this copper oxide is secured by the admixture of lime in the proportions indicated. Again, as the fungus grows in the interior of the plant as well as superficially, the remedy can only be palliative; but the French Vine growers find it very serviceable, nevertheless. It is to M. Prillieux that we owe the first precise experiments on this subject, and these have been confirmed by several observers, notably by M. Aimé Girard, who gives the results in the last number of the *Annales Agronomiques*. From his figures we see, to take one example only, that out of a total of 815 kilogrammes, the moiety treated with copper sulphate yielded 445 kilos. of sound Potatos, while that not so treated yielded 370 kilos., or a balance of 75 kilos. in favour of the plants sprinkled with the copper solution, and a money gain of 261 francs per hectare.

Hybrid Thunia.—In one of Messrs. Veitch's houses at the present time, the hybrid, Thunia Veitchii × is in flower. It was raised, according to the account in our columns in 1885, p. 818, by Mr. Seden. "The sepals and petals are white, with a flush of mauve-purple towards their tips; side-lobes of lip white; intermediate lobe rose-purple, with the hairs of the fringe orange-yellow." It was raised between T. Marshalliana and T. Bensoniæ, both by Mr. Seden and by Mr. Toll, of Manchester.

Gloucestershire Vineyards.—Canon Ellacombe has published a lecture on the vineyards of Gloucestershire and Somerset, which he read before the members of the Bath Natural History Society last year, and in which he shows how numerous were the vineyards in those counties. The Canon gives an account of a vineyard on Lord Ducie's property, near Tortworth, and which was cultivated as such within the memory of men living in 1882 and 1887 respectively.

Fruit Preserving in Kent.—One of the exhibits at the recent agricultural show at Rochester was the collection of whole-fruit jams preserved by Mr. T. Wood, at his manufactory at Swanley. Mr. Wood's works are most conveniently built on 4 acres of freehold land, with sidings to the railway. They are in the very centre of the fruit-growing district, so that Strawberries, Raspberries, and other fruit which easily spoil, can be preserved when they are absolutely fresh. Indeed, Strawberries picked in the early morning may be boiled, bottled, and dispatched to the warehouse of the firm in London by mid-day. Mr. Wood, who is an agricultural implement maker and a farmer as well as a fruit-grower, established

the factory five years ago. He turned out 300 tons of jam in the first year's operations, and last year no less than 2000 tons. In view of the expansion, which appears to be indefinite, Mr. WOOD has now arranged to hand over the manufactory to a limited liability company. The profits on the basis of last year's trade show a handsome return on the proposed capital of £120,000.

MEALY BUG.—In the current issue of the *Journal des Orchidées*, M. VAN IMSCHOOT narrates how once he placed some Stephanotis in the same house with his Orchids. The wretched insects (maudite engeance), soon found their way from the Stephanotis to the Orchids, whence it was difficult to dislodge them, till at length, for other purposes, M. VAN IMSCHOOT introduced between his Orchids a number of pots of Pteris. The insects then left the Orchids to attack the newcomer, leaving the Orchids free. By occasionally removing and burning the Fern fronds, the pest is prevented.

AMERICAN POMOLOGICAL SOCIETY.—Again we have a very interesting report before us, including a revised edition of the Catalogue containing the names, synonyms, concise differential characters, and adaptability, to the several States of the Union, of the various fruits in common cultivation. Mr. DUDLEY ADAMS has a paper on botanical names, which is very amusing; it is very grandiloquent to begin with, sarcastic in the middle, dogmatic towards the end, and somewhat ludicrous in the pathos of its peroration. "We want the whole thing straight in our mother tongue, and we are going to have it," says the writer. We hardly think the mother tongue would be much improved if this is the style to be adopted in future. The fact is, that those who really want to know something of botany and horticulture, and to make use of their knowledge in practice, find no special difficulty in learning the language. Moreover, the objectors, once they become workers, and not mere scoffers or *dilettante* admirers, adopt the current nomenclature, which, on the principle of the survival of the most generally convenient, is likely to last long after Mr. ADAMS' eyes have ceased to weep. But for all that there is abundant need of reform, and the American Pomological Society has done excellent work in initiating it. If it can only succeed in persuading horticulturists not to imitate botanical procedures under unsuitable circumstances, it will do still better service. It is the horticulturists who have most to answer for in this way; but as they—as recent experience has shown on this side of the water—are the greatest sticklers for the "unutterable jargon," it is clear it cannot be such an insurmountable obstacle in the every-day business of our nurserymen as Mr. ADAMS thinks.

TWICKENHAM SHOW.—The Horticultural Society of this pretty suburban town was fortunate in having fine weather for its show, on July 2, held in the grounds of Orleans House. The entries were fewer than hitherto, but the plants and cut flowers displayed were excellent. Mr. Fordham, nurseryman, Twickenham, had the finest and best decorative group. Mr. Parsons, Mr. T. Twining's gardener, had the best nine stove and greenhouse plants. Mr. Bates, the gardener at Poulet Lodge, had some admirable plants. Mr. Sage, gr. to Earl Dysart, Ham House, had the best six table plants. Cut Roses were good, especially those contributed in the competing class by Mr. Warwick, gr. to J. T. Hitchin, Esq. Fruit was but little shown in collection although the classes for Grapes, Peaches, &c., were fairly filled.

ROSE MRS. PAUL.—This new Rose, which received a Gold Medal at the Exhibition of the National Rose Society at the Crystal Palace, was shown by Messrs. PAUL & SON, of Cheshunt.

CATTLEYA SANDERIANA.—We have received from SYDNEY COURTAULD, Esq., a magnificent spike of Cattleya gigas var. Sanderiana. The spike bore six flowers, the largest of which measured 9½ inches across the petals, others 9 inches. A second spike on the same plant bore, we are told, five flowers. We think we have seen finer individual flowers, but never such an inflorescence.

MR. JOHN PARMENTER'S EMPLOYÉS.—The twenty-first annual outing of the *employés* of Mr. PARMENTER, Brecknock Nurseries, Camden Road, N., took place on Saturday, the 12th inst., the party proceeding to "Ye Old Swanne," Rickmansworth, where a very enjoyable day was spent.

MR. JOHN RALFS.—It is with great regret that we have to announce the death of the *doyen* of English cryptogamic botany, Mr. JOHN RALFS, M.R.C.S., he having passed away at the age of eighty-three, at Penzance, on Monday last. JOHN RALFS was the second son of SAMUEL RALFS, of Muddiford, Christchurch, and was born on September 13, 1807, near Southampton. He was educated privately at Bishop's Waltham and Romsey, and on leaving school, at the age of eighteen, was articled to a surgeon at Southampton. He "walked the hospital" at Winchester for about two years, and passed his final examination in 1832, the presiding examiner complimenting him especially upon his botanical knowledge. He prophesied further, that one day the young student would be heard of as an eminent naturalist — a prophecy which has been amply fulfilled. For a brief period, Mr. RALFS practised as a surgeon in Shoreditch, but finally settled for a time at Torquay. In 1837 he took up his residence at Penzance, where, except at irregular and at one time lengthy intervals, was his permanent home. His first literary work of importance was published, by subscription, in 1839, by LONGMANS. It is an analysis, after the method of LAMARCK, of the *British Phænogamous Plants and Ferns*, and among the list of subscribers may be seen the names of BALFOUR, GRAHAM, HOOKER, and many other eminent botanists. This little book was well received, and for accuracy, conciseness, and perspicacity it leaves nothing to be desired. It was not until four years after the publication of this book that Mr. RALFS became known as a worker in the paths of crytogamic botany. In 1843, he commenced to contribute some highly original papers on desmids and diatoms to the Edinburgh Botanical Society, and of these abstracts were published at the time in the *Gardeners' Chronicle* and other scientific periodicals. These contributions, although only about a dozen in number, continued until 1854. *The British Desmideæ*, with EDWARD JENNER'S superlatively beautiful and accurate drawings—the twenty-five plates illustrating the 134 species described in the text—appeared in 1848. It placed at once the study of these minute and most interesting organisms on a sound scientific basis. A mere glance at the list of subscribers prefixed to this valuable book will demonstrate the high opinion entertained of Mr. RALFS by his botanical contemporaries—for they are all here. The success was an unqualified one; and its value as a scientific work of reference may be gathered from the fact that it sells for four or five times its original price. It may incidentally be mentioned that RALFS was the first to describe in Desmids the peculiar circulation of fluids known as cyclosis. To the 1861 issue of PRITCHARD'S *Infusoria*, Mr. RALFS contributed the section on Desmids, and his other work included an exhaustive MS. "Flora of West Cornwall," in the Penzance Library (unhappily incomplete), and a great many papers in the *Transactions* of the Penzance Natural History and Antiquarian Society, of which Society he has been President. Last year he was elected Honorary Fellow of the Royal Microscopic Society. A man of old-world ideas—who lived entirely among books and plants, of child-like simplicity and spotless integrity, reserved to a degree except to the most intimate of friends, JOHN RALFS has gone to his rest full of years, wearing as one might say, the white flower of a blameless life. Mr. RALFS was a man of great intellectual powers, and there can be no question that, had his early manhood proved happier, he would have been one of the foremost men of the century. But there are great men of whom the world knows nothing, and who have no sympathy with the clamour of the multitude; of such as these was JOHN RALFS.

THE HUFF-CAP PEAR.

THE Huff-cap is a perry Pear, included by Mr. Knight amongst the Choke Pears, which abounded in Herefordshire in the seventeenth century. There are two varieties of the Huff-cap grown in the west—the black, the one illustrated at p. 79, and the yellow. The fruits, although of about the same size, 1¾ inches by 1¼ wide, differ slightly in form. The black Huff-cap fruit is oblong, obovate, sometimes elliptical, tapering gradually from the bulge to both extremities—it is even and regular in its outline. The skin is olive-green on the shady side, and entirely covered with dull red spots on the sunny side, the whole surface thickly sprinkled with large grey russet dots. The eye is prominently set with erect segments. Stalk three quarters of an inch long, connected by a thickened continuation with the flesh. The latter is yellowish-green and very harsh, but it becomes sweet during the process of grinding. It is one of the most esteemed varieties of the present day, and makes a very intoxicating perry. The tree of this variety, of which we give a figure, stood, says our correspondent, Mr. J. Willis, of Bishopsteignton, in the middle of a ploughed field on the Brick House Farm, Hadley, three miles from Droitwich, Worcestershire. It was photographed about twenty-two years ago for Mr. Munn, who was, and had been, the tenant of the farm for many years. The year it was taken the field was in Wheat, and the old gentleman, with some friends, is seated at a table placed beneath the tree with a jug of Huff-cap perry on it. I have heard him remark that he used to make 2 hogsheads of perry from this tree in a good year, which used to fetch 1*s.* 6*d.* to 2*s.* 6*d.* a gallon, and was sold as champagne perry. It was a wonderful tree, chained up with old cart traces, and triangular pieces of wood to clip round the branches with bolts and nuts, to screw them up together, and scores of props under them when carrying a heavy crop. The soil it grows in is a very heavy red loam.

THE APIARY.

TREATMENT OF JULY SWARMS.

THE old proverb said that a swarm of bees in May was worth a load of hay; a swarm in June was worth a silver spoon, but a swarm in July was not worth a butterfly. There is much truth in the above. Swarms issuing in July are the cause of two evils: they weaken the stock from which they proceed, and there is not enough time left for them to provide for themselves before winter. The best thing to be done is to put them back into the hive from which they came, but not the queen. The following method of treatment is very often practised with much success:—Take the swarm in the usual manner in a straw skep; when the bees are quite settled in the skep, turn it (the skep) upside down; it will stand very well in this position on a pail. Then take a piece of excluder zinc large enough to cover all over the skep. The bees will not like this proceeding at all. Puff some smoke through the zinc on the bees. This, and the reversing of the hive, will prove to the bees that they have no continuing city there, and they will begin to make their exit. They will fly out, and perhaps pitch on the same or another tree again; but the queen and the drones will be imprisoned in the hive, as they cannot get through the zinc. When the swarm finds the queen absent, they will return to their hive and seek her. Not finding her they will be discontented for a short time, but will soon settle down to hard work, getting honey (if there is any to get), and will make a fresh queen. You will thus get a young and vigorous queen for the hive and plenty of bees to keep her company. When thus treated the bees will seldom issue again, especially as the drones are also withdrawn. Now go back to the skep, where you will find the queen and drones. If there are plenty of drones in other hives, kill these and give them to the chickens. If

the queen is a good one, you could make use of her in a hive which has an inferior queen, or give her away to somebody not so fortunate. If she is very old kill her, and let her go along with the drones.

The season, with all its promise at the commencement, does not seem as though it would be more than an average one. Days have been cool and sunless, and nights have been cold. Unless we have at once some hot weather, there will not be the great harvest of honey we were led to expect there would be at one time. But we can at any rate grumble, and that is some satisfaction. *Agnes.*

Home Correspondence.

EUCALYPTUS.—In your issue of the 28th ult., under the heading, "Madras Forest Department," it is stated:—"It has been conclusively proved that the Eucalyptus cannot be grown in the plains, except, perhaps, at an expenditure which is prohibitive." Having had some experience of Eucalyptus growing in the Republic of Colombia during nine years, I beg to furnish the following particulars, which may be interesting. Owing to the reputed antiseptic properties of the Eucalyptus, numerous attempts have been made to cultivate many species of this tree in all conditions of climate, ranging from the hot arid plains, up to 9000 feet above the level of the sea. In the more elevated regions most species grow with remarkable rapidity, though the timber has proved a failure, even from trunks 4 feet in diameter. In the hot plains, however, all the species which flourished in the mountains rapidly succumbed to the sweltering heat. One species only has accommodated itself to the climate of the plains, viz., E. citriodora. In the village of Penalisa, the seat of a large cigar manufactory, 800 miles up the River Magdalena, at an altitude of 800 feet above the sea, and 50 above the river, a considerable number of plants of E. citriodora were planted ten years ago. These trees, when I first saw them, had been planted out about two years, in which time they attained a height of about 20 feet. When the trees were eight years old, they presented a very healthy appearance, and had grown to large dimensions. The climate of Penalisa is characterised by prolonged periods of drought—from 3 to 5 months at a time, and is about 4° N. latitude. *A. Planter.*

ARAUCARIA IMBRICATA WITH FERTILE CONES.—We have about 250 specimens of Araucaria imbricata here, most of which have been planted over forty years. The heights of the trees range from 25 to 30 feet, and although they are very healthy, only one tree has borne fertile cones (two) till this year, when this tree is carrying about thirty fertile cones, and another has six fertile cones. There are many male trees in the collection, which bear hundreds of catkins every year, and it is necessary, if you want good seeds, to grow both sexes. The female cones take about twenty-two months to ripen, and when fully grown, they are ten times as large as the catkins, and grow erect on the branches, while the catkins grow in bunches of four or five at the ends of the branches, and fall off in about five months. From the two cones which I gathered three years ago, the seeds came up well, almost every seed making a nice plant. In October, the seeds being then ripe, I filled some pans with light soil, and planted them, putting the pans in a cold pit. Anyone can see the trees I have mentioned in this note if they will favour me with a call. *Wm. Smythe, Basing Park, Alton, Hants.*

PROPAGATION OF COMBRETUM PURPUREUM AND IPOMŒA HORSFALLIÆ.—In the issue of the *Gardeners' Chronicle*, December 7, 1889, I gave an account of the propagation of the above plants, which have the reputation generally among horticulturists of being difficult to root from cuttings, and this is deemed by some propagators of long standing as an impossible operation. The fact is, that they are in no wise difficult subjects to get to grow from cuttings, as any gardener may demonstrate if he has the means at hand. I enclose you a photograph taken by me from a rooted cutting, which will settle the matter beyond dispute as to their being easy subjects to propagate from cuttings. The only point is to take care and have shoots that are neither too old nor too young for cuttings. A good plan is, when the plants commence to grow, to pinch them back, which has the effect of making them start another growth, and these are the growths which make the best cuttings. They should be taken off with a node of older wood attached, and placed in a sandy compost round the edge of a pot. After watering the cuttings, put them into a close propagating case, and plunge the pots in a moderate, bottom-heat, where in the course of a month or six weeks the cuttings will be rooted and ready for potting off. *W. Harrow, Botanic Gardens, Cambridge.*

VEITCH'S EXONIAN PEA.—A short time ago I saw about 4 acres of this variety, which were sown the last week in March, and the Peas were fit to gather in the second week in June. Sown at the same time as William I. and Kentish Invicta, it was ready for use several days before either of these. Awarded a First-class Certificate by the Royal Horticultural Society in 1887, it is one of the best acquisitions of late years among early varieties of marrow-fat Peas. The colour of the seeds is dark green, the pods are packed with eight to ten of them, and the flavour is equal to that of the best. It grows to a height of 3 feet, is as hardy as any other early variety, and bears heavy crops, commencing at about 9 inches from the soil.—*D. C. Powell.*

LONDON PURPLE AND ITS EFFECTS ON TREES.—Complaints are made of this substance destroying the foliage of fruit trees when employed against caterpillars, and it may be of service to some of your readers if I give my experience of it. Our trees suffered very much from this pest. I received two bottles of London Purple for trial, but having no experience of the substance, although I knew that it was an arsenical preparation, I used but one of those sent, following the instructions which came with them—one part London Purple to twenty parts water. On the second day I found all the leaves of the tree—an Apple—were scorching up, and a close examination showed that not one caterpillar was left. The tree, however, had suffered from the solution having been too copiously syringed over it, although I was careful to make use of the finest syringe rose. I then procured one of the Stott distributors, fixing it on a powerful garden-engine,



Fig. 15.—Huff-cap pear tree, Hadley, Worcestershire. (see p. 78.)

and applied the other bottle as before. In this case the liquid answered my expectation, clearing off the insects, but not injuring the foliage in the least. I now have every confidence in the efficacy of the remedy, and feel sure that if it is applied after the trees start into growth, and just before they come into bloom; and again afterwards, when the fruits are set, no trouble need be apprehended. This applies to fruit trees quite in the open, not to those partially overhung, and surrounded by large Oaks. In the latter case it is impossible to prevent caterpillars descending from the Oaks on to the Apple trees at the time of flowering, when any attempt made at eradication with the insecticide would be prejudicial to the setting of the flowers. The use of London Purple in the spring will be looked upon by gardeners as a necessary yearly application, which will greatly lessen the destruction of fruits and foliage caused by swarms of caterpillars. *A. Evans, Lythe Hill, Haslemere.*

A HINT TO YOUNG GARDENERS.—How frequently do I find, when a young man obtains a post as head gardener, he is at a loss in making out his first list of seeds. What I now state is a fact. A friend said, "Man alive! I put my foot into it to-day. I called at Mr. —— seed-shop for some Lettuce seed, and thought it would look mean to ask for half an ounce, so I asked for half a pound, and do you know that the seedsman raised his arms and said, 'Why, man! that is sufficient seed to sow the whole county.' I never felt so small before, as I had asked for it in such a way as to make the seedsman believe that I was one who knew my business well. So you see this was my first seed order with a damper." *R. H. D.*

THE ICELAND POPPIES.—Large beds of these are now a fine feature at Messrs. James Veitch & Sons' trial grounds at Chiswick. Perhaps it was a mark of age, but some of the yellow varieties of these Poppies had taken on a deep orange-scarlet; at the margin of the petals the whites vary also, some being purer than others. The orange-scarlet variety—very fine—is to all appearance identical with what is known as miniatum. Beautiful as the Shirley varieties of P. rhæas are, they lack the persistency of the Iceland varieties, in that the petals soon drop, unless cut before they are quite expanded. Mr. Davidson, Messrs. Veitch & Sons' seed manager, states that on the lighter drier soil of Chiswick, the plants flower two years, and then it is advisable to renew them from seed. At the Langley seed grounds, where the soil is much heavier, the plants are perennial, making a free growth, and blooming profusely. The Iceland Poppies are charming in the gardens of St. John's College, Oxford, where there is a well-cared for good collection of hardy plants. *R. D.*

LILIUM PARDALINUM × L. PARRYI.—Mr. Elwes, when lecturing on Lilies last Tuesday at the Drill Hall, expressed a doubt as to the correctness of my cross. I have once more closely examined the plant, and find the bulb resembles, so far as I can see, without disturbing it, Lilium pardalinum californicum. The leaves are exactly as in Lilium Parryii, and in a second and slightly larger flower than the one of last Tuesday's show; the shape is as in Parryi, only quite regular and more recurved. The colour is of a pale orange, spotted brown, and it is sweetly scented. Although I have crossed L. Parryi and pardalinum for some years, and raised several hundred seedlings, they all resemble L. pardalinum except this one form, which I hope I may be successful in propagating. *G. Reuthe.*

CARNATIONS AT CHISWICK.—There are some growers of Carnations, lovers of these hardy flowers as garden plants, who will probably find more of interest at Chiswick when the Carnation show and conference take place next week, in the collection, growing for trial in the open ground than in the cut flowers and pot plants. I have a sort of fatherly interest in this outdoor trial, having been, I believe, the first to suggest it to Mr. Wilks, and it is indeed pleasant to find how admirably the suggestion has been supported. A considerable space of open ground near the fruit room has been allotted to the plants, where the major portion have done very well, although there are some clumps which stand out in marked contrast to others in robust free-blooming habit. In some cases plants have suffered from the Carnation maggot, and Mr. Barron unhappily has not at his disposal sufficient help to enable him to grapple with troubles of that description. That the soil must be good is evident from the growths made by healthy plants. Judged eventually as border varieties, it may possibly later prove that the choicer florists forms are less adapted for the purpose than are some others if of less refined quality, having stout free-growing habits. The plants are put in triangles or clumps of three, an admirable method of planting, as is seen in some cases where the trio produces a head of bloom fully a yard over. In these cases also plenty of grass has been thrown out. Such varieties are essentially the ideals of border Carnations. Some seedling varieties are also grown, but it is unfortunate when one of the trio is single. Still, some of the scarlet seedlings are of excellent promise, and show how valuable these are both for garden decoration and for furnishing good cut flowers. There is also a large number of Pinks, florists', laced, and others growing, but these do not seem to have been so successful as are the Carnations. The season has, in fact, been far too wet and stormy for Pinks, the flowers having suffered woefully under the drenching rains. We may well hope that, badly as the Carnation blooming season has begun, it will have a more favourable completion. One suggestion I made with respect to the Carnation trial was, that all the plants should be grouped, so far as possible, into colours, seems not to have been practicable this time. That seems to be desirable so far that by grouping the whites, pinks, yellows, roses, scarlets, crimsons, purples, &c., under their respective headings, anyone might be able to see at a glance which were the best in each section. It may be that when visitors attend the Conference, next week, and note the Carnation trial, they will resolve from their stocks in the winter, to add materially to it, and the more the stock is added to from hardy, outdoor plants, the better. Still further, it is most evident that it is in decided colours rather than in flaked or bizarre flowers the trial most need strengthening. Possibly it may be that next year the grouping under heads of colour will be possible. I hope, between now and the 22nd, the weather will be warmer, and thus promote flower-opening. When the Conference takes place, Fellows of the Royal Horticultural Society will do well to note the great need there is for greater outlay upon the Chiswick houses and grounds, and may help to create in the Council stronger interest in the welfare of those valuable gardens. *A. D.*

SNOW IN JULY.—It may interest many readers of the *Gardeners' Chronicle* to know that most peculiar weather is being endured in Scotland—snow fell heavily during Monday night, the 6th inst., and Ben Nevis was covered with snow to the depth of 6 to 8 inches. In Perthshire, the road between Rannoch and Aberuan was covered with several inches of snow, the weather being as cold as in December—a most remarkable thing. *Alfred Outram, Victoria and Paradise Nurseries, Upper Holloway.*

CHELSEA GEM *v.* WILLIAM HURST PEA.—Can anyone point out the difference between the above? That they are both first-class dwarf early Peas is a fact. I obtained the seed from different firms, and then sowed the two samples side by side, and they have ripened together. In cooking them they have been mixed together, and my belief is, that they are identical—as like as two Peas. *W. C. M.*

KITLEY'S GOLIATH STRAWBERRY.—I wish Mr. Bunyard, who usually is so accurate in his nomenclature, would explain why it is that he designates this old variety John Powell, placing the rightful name in brackets, as though it were an *alias*. I remember Kitley's Goliath fully fifty years ago as a huge fruiting variety, and long before John Powell Strawberry was heard of. In Dr. Hogg's second edition of the *Fruit Manual*, published in 1860, John Powell is not mentioned, but Goliath had been in existence at least twenty years. Would it not be more fair henceforth to call the variety Kitley's Goliath, and leave the later designation to be forgotten. Four out of the best six general Strawberries to-day, Héricart de Thury, Sir Charles Napier, British Queen, and Elton Pine, are mentioned in 1860. The other two not in that list are Sir John Paxton and President. *A. Dean.*

WHITE LÆLIA ANCEPS.—Mr. D. B. Crawshay seems to have been unfortunate in the flowering of these species of Lælia. I was under the impression that where several plants are in a collection, the greater part of them would have flowered last season. I was successful in flowering only one plant until last January, when only one of our plants did not flower. One of these plants had fifty-one flowers on twelve spikes; and I have hopes, from what I now observe, to get eighteen spikes upon this same plant this year. Wherever I have observed these white varieties they make larger growths every year, showing that they have a robust constitution. Where plants that were imported in 1885 are not flowering, it is due perhaps to their receiving too much shade—the only shade that our plants get at any time is a thin coat of whitening on the glass, and I may say, that I have sometimes felt the leaves when they were too hot to hold in the hand, and these were uninjured, and of a deep green colour—the colour showing the strong light the plants received was not too much for them. One plant that sent up last year two spikes from two growths, and which had no leaf at all, is again showing spikes on growths that are perfectly normal, and, like Mr. Crawshay, it was L. a. Stella. *A. G. Catt.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

July 8.—Present: Mr. McLachlan, in the chair Mr. Blandford, Dr. Müller, Mr. Wilson, Mr. Morris, and Rev. G. Henslow, Hon. Sec.

Acacia Seyal, stipules.—Mr. Henslow showed a specimen of the stipules of this Central and North African species, having globular bases, about the size of large cob-nuts, terminating with slender points, 2 inches in length. They had been perforated and inhabited in all probability by ants. A discussion arose as to the possibly hereditary character of the abnormal size of the stipules of this and other species—*e.g.*, of A. sphærocephala, the "Bull's horn" Thorn (as compared with the needle-like stipules of some Australian species), even when cultivated in England and in the absence of ants. It is well known that the presence of the ants causes an increase in the growth of the stipules, although they hollow them out and consume the pith as food. It is, however, the opinion of Dr. Beccari and M. Treub, who have studied many "ant-plants," that the comparatively large size of the stipules, even before they are attacked by ants, is due to the hereditary effects of the irritations set up in previous generations of trees (*Malesia*, ii., and *Ann. Jard. Bot. Buit.*, iii., p. 129). An interesting description of A. sphærocephala, &c., is given in Belt's *Naturalist in Nicaragua*, p. 218.

Lilium Martagon, fasciated.—Mr. Elwes sent a large fasciated stem of this species, in which this abnormality had not been previously observed. It is not uncommon in other species. It bore at least 100 flowers on the flattened stem, which was about 2 inches across.

Oak-staves, perforated.—Mr. Morris exhibited portions of staves of beer barrels, made in England in 1889, and shipped to Aden in March, 1890, from the Indian store department. Of 100 barrels nearly every one was found to leak, holes having been bored into the wood by the grub of some beetle. It was referred to Mr. Blandford for examinatton; but in the absence of all specimens of the creature, and any details in the history of the case, as—*e.g.*, whence the beetles could be derived, it is somewhat difficult to suggest a remedy.

Carnations attached by Wireworm (?).—Samples of plants and grubs were received from the Royal Horticultural Society's Gardens at Chiswick. It was suggested by Mr. Barron that the creature might have been introduced in the "peat moss" (employed as bedding for horses) used as manure. It appeared to be a species of tipula. Mr. Blandford undertook to make a further examination. Mr. Morris and Mr. Wilks remarked that Carnations were much destroyed in a similar manner both at Kew and Shirley. Mr. Henslow remarked upon the wonderfully efficacious effect of gas lime in destroying wireworms. Thinly spread over the ground and dug-in, a plot where previously not a Cabbage could be grown in his garden, has borne excellent crops for several years since.

Gladiolus with Unsymmetrical Flowers.—Mr. Henslow showed a spray in which the two uppermost flowers were normal, the two lower reversed in position, having the stamens and style declinate, while one flower had them situated laterally. The streaked petals corresponded with the positions of the stamens in each case. The tubes did not appear to be twisted in any way. As the style and stigmas

were altered in correlation to the stamens, it would probably not affect the fertilisation by insects, the latter being simply dusted with pollen in a different part of the body from usual. Mr. Morris remarked that he had observed similar alterations in the flowers of the Gladiolus at Kew.

Foliage with Foliaceous Appendages.—Mr. Henslow exhibited specimens (1) of leaves of Acalypha eremurus with narrow wing-like excrescence on the ribs and veins of the upper surface. Dr. Müller has described this peculiarity as a true specific character in this plant. 2. Aristolochia sipho, with apparent outgrowths on the lower surface. These appeared to be due to cracks in the leaf when young; a portion of the leaf then protrudes below, when adhesion again takes place. 3. Arum maculatum, with a foliaceous appendage at the base of the blade. 4. Several specimens of Cabbage leaves, with wing-like appendages to the ribs, as well as tubular and funnel-like appendages. Mr. Henslow pointed out the similarity between these foliar excrescences and many which occur on petals, especially Gloxinias (exhibited), Primroses, Orchids, and in the "crested" Cyclamen. In all cases they appear to be due to hypertrophy, and are a means of disposing of excess of nutriment, the foliar excrescences being correlated to the chorisis or branching of the fibro-vascular cords. In a monstrous form of Mignonette, described by the late Professor J. S. Henslow in 1833, the ovules partook of identically the same character as the excrescences on the Cabbage leaves, viz., cups, funnel-shaped structures, and foliar expansions. Such appears to explain the origin of ovules as being the outgrowths from the hypertrophied margins (placentas) of carpellary leaves.

Plants Exhibited.—Sir Trevor Lawrence sent Bulbophyllum grandiflorum and Sarcopodium pittacoglossum, for which a Botanical Certificate was unanimously awarded. A Liliaceous plant with dark-coloured flowers, and two new species of Lily were sent by Mr. Ware. They were forwarded to Kew to be named.

At the meetings held on Tuesday, the 8th inst., awards were made as follows:—

By the Floral Committee.

First-class Certificates.

To Babiana rubro cyanea, from M. de Graaff.

To Spiræa Bumalda variegata, from Messrs. J. Veitch & Sons.

Awards of Merit.

To Rose (polyantha) The Engineer, from Mr. J. S. Gilbert.

To Lilium Bolanderi, from Mr. T. S. Ware.

To Zingiber D'Arceyi, from Messrs. J. Veitch & Sons.

To Gloxinia Nestor, from Messrs. J. Veitch & Sons.

To Gloxinia Gaiety, from Messrs. J. Veitch & Sons.

To Pelargonium Turtle's Surprise, from Messrs. H. Cannell & Sons.

To Carnation Mrs. Saunders, from Mr. H. J. Jones.

To Sweet Pea Stanley, from Mr. H. Eckford.

To Sweet Pea Dorothy Tennant, from Mr. H. Eckford.

By the Orchid Committee.

First-class Certificates.

To Lælia grandis, from Messrs. F. Sander & Co.

To Cattleya Empress Frederick, from Baron Schroder.

To Masdevallia Schroderiana, from Baron Schroder.

Awards of Merit.

To Cypripedium Youngianum×, from Messrs. F. Sander & Co.

To Zygopetalum crinito-maxillare×, from Baron Schroder.

By the Fruit Committee.

First-class Certificates.

To Fig St. John, from Messrs. J. Veitch & Sons.

To Strawberry Auguste Boisselot, from Messrs. Paul & Son.

Awards of Merit.

To Melon Seedling, from Mr. G. Wythes.

To Strawberry Incomparable, from Mr. H. Ridgwell.

To Cucumber Allan's Favourite, from Mr. W. Allan.

To Melon Highlands Hybrid, from Mr. J. T. Wilkinson.

To Melon Seedling, from Mr. W. A. Crook.

Medals.

Silver-Gilt Banksian, to Lord Rothschild, for collection of Carnations.

Silver Banksian, to Mr. T. S. Ware, for group of Lilies.

Silver Banksian, to Messrs. J. Veitch & Sons, for hardy plants.

Silver Banksian, to Messrs. Barr & Son, for hardy flowers.

Silver Banksian, to Messrs. Paul & Son, for collection of Roses.

Silver Banksian, to Mr. T. Rivers, for collection of fruit.

Bronze Banksian, to Messrs. J. Veitch & Sons, for collection of fruit.

Bronze Banksian, to Messrs. Paul & Son, for collection of Strawberries.

CHISWICK.

July 10.—The tenth exhibition of this Society was held, as usual, in the gardens of the Royal Horticultural Society, and as, after so many rainy days, the weather was bright and fine, there was a large attendance of visitors. Exhibits were not so many as in former years, but the quality was better, and this was most noticeable in the group arranged for effect, and these have always been a feature at this Society's exhibition.

In the leading class the competition between Mr. Brown, Richmond, and Messrs. W. Fromow & Sons, Chiswick, was very close. Mr. Brown's group was light, and rather inclined to hollowness, while Messrs. Fromow's was composed of better plants, but too crowded. A Silver Medal of the Royal Horticultural Society, and cash, was offered as the 1st prize, and the groups were marked "Equal 1st," but for all that, the Medal was given to Mr. Brown in addition. Mr. A. Wright, gr. to E. H. Watts, Esq., Devonhurst, Chiswick, was the only exhibitor of a group of greenhouse plants, and was deservedly placed 1st, for well-grown plants, foliage and flowering specimens being equally fine. Mr. Wright was a large exhibitor, and won the premier award in several instances.

Stove and greenhouse specimens, from Mr. W. Bates, Poulett Lodge, Twickenham, were good, Kalosanthes coccinea and Clerodendron Balfouri-anum being fine—this was another exhibitor who took several firsts. Plants were of no special merit, but were creditable, the chief prizes going to Messrs. Wright, Bates, Waite and Hucklesby, gr. to B. Hardy, Esq., Chiswick. Orchids were best from Mr. Howard, gr. to H. Little, Esq., Twickenham.

Roses were a feature, as a handsome challenge trophy cup was offered for the first time; the cup is to become the absolute property of the exhibitor who wins it three times, not necessarily in succession. Mr. Frank Cant, Colchester, was the successful competitor this year against four others. His twenty-four varieties, three trusses of each, were all good blooms, Baroness Rothschild, Niphetos, Her Majesty, and Merveille de Lyon being very fine; 2nd, Mr. B. R. Cant, Colchester; and 3rd, Messrs. Paul & Son, Cheshunt, all coming close. Roses shown in other classes were poor.

Fruit was plentiful, and generally of high quality. Prizes were offered for a collection by L. de Rothschild, Esq., and Mr. Osman, gr. to L. J. Baker, Esq., Ottershaw Park, Chertsey, was placed 1st; his Black Hamburgh Grapes, Melon, and Peaches were good. Mr. Bates, who followed closely, had a fine Pine. White Grapes were of average quality, Mr. Bates leading; and this exhibitor, with Mr. Osman, Mr. Wright, and Mr. C. J. Waite, The Glenhurst Gardens, Esher, divided the honours in this section, the last-named being 1st for Messrs. Carters' and Messrs. Suttons' special prizes, showing well. Mr. Chadwick, gr. to E. M. Nelson, Esq., Ealing, had the best collection of vegetables, and also showed well in the single dish classes, where Mr. Waite also was successful.

The display, as a whole, was much improved by the non-competing groups staged by Messrs. C. Lee & Son, Hammersmith (ornamental shrubs, &c.); Mr. Reynolds, Gunnersbury Park Gardens, Ealing (plants); Mr. May, gr. to the Marquis of Bute, Chiswick House (plants); Messrs. J. Veitch & Sons (cut Roses); Mr. J. Hudson, gr. to Messrs. Rothschild, Ealing (fruit); and Mr. C. Turner, Slough (Pelargoniums).

Cottagers made a fine show of vegetables, and pot Fuchias and Pelargoniums grown by school children in competition for special prizes offered by Mrs. S. A. Lee, who also gave intending competitors their plants early in the year, formed attractive features.

AYLESBURY HORTICULTURAL.

July 2.—This exhibition took place in the grounds of Walton Grange, Aylesbury. A considerable number of classes are open, and special prizes are given by Earl Temple, the President, Lord Rothschild, Baron Ferdinand de Rothschild, Alfred de Rothschild, Esq., and Leopold de Rothschild, Esq.

Groups of plants were a leading feature, and the principal prize-winners were Mr. Smith, gr. to Earl Temple, Wootton; Mr. Evans, gr. to Mr. E. T. Mackrell, Aylesbury; Mr. Blake, gr. to H. Cazenove, Esq., Aylesbury; Mr. E. Threlfall, Aylesbury; and Mr. Robins, gr. to E. D. Lee, Esq., Hartwell House, Aylesbury.

The best six stove and greenhouse plants, in or out of flower, came from Mr. Smith, Wootton Gardens, who had Pancratium fragrans, Crotons Weismanni and rubro-lineatus, Trachelospermum jasminoides, Cissus discolor, and Maranta zebrina. Mr. Robins was 2nd, staging among others, two admirably grown and flowered plants of Achimenes.

Flowering plants consisted of some creditable Tuberous Begonias, zonal and variegated Pelargoniums, Fuchsias—Messrs. Hopkins and Blake staging here some very good specimens, Gloxinias, Achimenes, &c.

Mr. E. T. Mackrell had the best specimen foliaged or variegated plants, a fine specimen of Caladium esculentum; Mr. Smith, was 2nd with Latania borbonica. Foliaged plants were also shown in sizes; Coleus in the form of well grown and highly coloured plants were present; and a group of capital specimens of Ferns came from Mr. Blake. Adiantum Farleyense and Microlepia hirta cristata being remarkably good. Mr. Shrimpton was 2nd, also with some good plants.

Cut flowers were represented by excellent Roses, Mr. J. Mattock, Oxford, was 1st; and Mr. J. Walker, Thame, 2nd. There were also classes for twenty-four and twelve varieties, in each of which there was a good competition; also classes for collections of cut flowers; and for six bunches of florists' flowers, though this is a term somewhat widely interpreted at Aylesbury.

Fruit was excellent, handsome special prizes being offered by Lord Rothschild and Mr. Leopold de Rothschild. In the class for twelve varieties of fruit, Pines excluded (but why Pines should be excluded from so large a collection it seems difficult to say), Mr. Cakebread, The Gardens, Raynor's Penny, Bucks, was 1st with a very good lot indeed, consisting of Muscat of Alexandria and Madresfield Court Grapes, fine Bellegarde and Grosse Mignonne Peaches, Lord Napier and Elruge Nectarines, Sir J. Paxton and President Strawberries, May Duke and Governor Wood Cherries, Brunswick Figs, and Hero of Lockinge Melon; 2nd, Mr. Robins, gr. to E. D. Lee, Esq., Hartwell House, with Black Hamburgh, Foster's Seedling, and Black Prince Grapes, Royal George and Violette Hâtive Peaches, Lord Napier and Elruge Nectarines, Purple Gage Plums, &c. Two excellent fruits of Queen Pine, shown by Mr. Cakebread, were awarded a special prize. Some excellent Grapes were staged in the classes for three bunches. Mr. Cakebread was 1st with Black Hamburgh, Mr. Deacon, gr. to H. Lambton, Esq., was 2nd. Mr. Deacon was 1st with white Grapes, having a tree of very fine bunches of Duke of Buccleugh, large in bunch, fine in berry, and of excellent quantity; Mr. Cakebread was 2nd, with Foster's Seedling. The best dish of Peaches came from Mr. E. Whitfield, Aylesbury, who had very fine Royal George; Mr. Cakebread coming 2nd with scarcely less inferior fruit of Grosse Mignonne. Mr. Whitfield also had the best dish of Nectarines, staging very fine Lord Napier. Mr. Robins being 2nd with the same variety. Strawberries, in collections of three varieties, were very fine; and good Cherries and Melons were staged.

Vegetables were remarkably good in quality, and very numerous. Special prizes were offered for collections by Messrs. Sutton & Sons, Reading; Carter & Co., London; E. Webb & Sons, Wordsley; Daniels Bros., Norwich, &c.

Some special prizes given by Miss Alice de Rothschild for the best collection of vegetables grown by cottagers within a radius of 6 miles of Aylesbury, brought out in a remarkable manner the capacity of the allotment gardens in this district for producing vegetables of the best quality.

BATH ROSE SHOW.

The Bath floral fête and band committee held its annual show of Roses in the Sydney Gardens on July 3, and although rain fell up to ten o'clock, the remainder of the day was fine. Owing, however, to the drenching showers of the day before, many of those who intended to exhibit did not put in an appearance; but, with the exception of one noted northern grower, who had entered pretty well in all the open classes, they notified their inability to attend. This forced omission on the part of some of the exhibitors caused some disappointment to the committee, and much inconvenience to the staging officials at the last moment. The competition in the open classes was nothing like what it might have been; but the quality of the blooms in the twenty-five classes into which the Society's schedule was divided—making due allowance for bad weather—was highly creditable to the growers.

There were two aspirants only for the Silver Cup or £8 8s., offered as a 1st prize in the leading class, and other large amounts for the 2nd and 3rd prizes.

Nurserymen.—Seventy-two varieties, single trusses: 1st, The English Fruit & Rose Co. (Cranston's), Hereford, with a good, even, solid lot of blooms—Earl Dufferin, Ulrich Brunner, La Duchesse de Morny, Lady Helen Stuart, Viscountess Folkestone (a large flesh-coloured, and very fragrant Rose); and Constantin Tetriakoff, being the most noteworthy; 2nd, Messrs. George Cooling & Sons, Bath, with, amongst others, bright blooms of A. K. Williams, Marshal Wilder, and Alfred Colomb.

Thirty-six varieties, three trusses of each.—There were also only two competitors in this class—the English Fruit and Rose Co. and Messrs. Cooling & Sons—to whom the prizes were awarded in that order, Etienne Levet, Docteur Andry, Marie Verdier, Alfred Colomb, and Mrs. John Laing, being the most prominent blooms in the 1st prize stand; while La France, Madame Cusin, and Xavier Olibo, were the best of Messrs. Cooling's.

Eighteen varieties.—Three good stands were staged in this competition by Messrs. Keynes, Williams & Co., Salisbury; Messrs. Jefferies & Sons, Cirencester; and Messrs. Curtis, Sandford & Co., Torquay, and to whom the prizes went in the order in which their names appear. The Salisbury stand contained large, even, fresh blooms, among which stood out boldly Marie Baumann, A. K. Williams, Alphonse Soupert, La France, Niphetos, La Rosière, Rosieriste Jacobs, and Madame Eugène Verdier.

Thirty-six varieties, single trusses.—Four excellent stands were put up: 1st, Messrs. Curtis, Sandford, & Co., who showed capital blooms of Catherine Mermet, A. K. Williams, Duc de Rohan, Souvenir de Paul Neyron, and Madame de Watteville; 2nd, Messrs. Keynes, Williams & Co., with good all-round blooms.

Eighteen Teas or Noisettes.—Four good stands were put up in this class: 1st, Mr. George Prince, Oxford; 2nd, Mr. John Mattock, New Headington, Oxford; Madame Hippolyte Jamain, Francisca Kruger, Comtesse de Nadaillac, Innocente Pirola, and Souvenir de Paul Neyron, being the most telling in Mr. Prince's stand.

Amateurs.—Thirty-six varieties, single trusses.—Only two lots were staged in this class, and the prizes went to Mr. R. N. G. Baker, Exeter, and Dr. Budd, Bath, both veteran growers, who showed good blooms throughout. Mr. Baker's best blooms were Charles Lefebvre, Madame Marie Rady, and Mdlle. Eugénie Verdier.

Eighteen varieties, three trusses of each.—In this, as in the previous class, Messrs. Baker and Budd were the only exhibitors, and secured the 1st and 2nd prizes in that order, for stands in which Alfred Colomb, Etienne Levet, Ulrich Brunner, and Merveille de Lyon were conspicuously fine blooms.

Twenty-four varieties, single trusses.—Four competitors entered the lists in this class, the prizes going to Mr. W. Narroway, Hereford; Mr. Thos. Hobbs, Bristol; and Mr. Evans, Oxford, in the order in which their names appear, all showing well.

Eighteen Teas and Noisettes, distinct.—The Rev. F. R. Burnside, Hereford, had the best out of five stands, staging, among others, capital blooms of Madame de Watteville, Jules Finger, Anna Olivier, and Madame Cusin; Mr. Bradbury, gr. to Dr. Budd, being a good 2nd.

Mr. W. Narroway had the best stand of twelve blooms, distinct varieties; and the Rev. F. R. Burnside the best stand of six, three blooms of each.

Open Classes.—In the class for twelve blooms of any Rose, the English Fruit and Rose Co. was 1st, out of four lots put up, with fine blooms of Ulrich Brunner; a like honour being awarded to the same exhibitor in the corresponding class for any crimson Rose, with bright solid blooms of A. K. Williams; six stands were put up in this class. The English Fruit and Rose Co. also had the best out of seven stands of La France, staging large solid blooms.

Mr. George Prince had the best dozen out of seven stands put up of any yellow Rose, showing large blooms of Jean Ducher, the lower petals bearing slight injury by rain.

In the class for six blooms of any new Rose, Messrs. Keynes, Williams & Co., were a good 1st, showing capital blooms of Climbing Niphetos.

Baskets of Roses, arranged for effect with Rose leaves, are always well shown at Bath, and Messrs. Cooling & Sons were easily 1st, in their usually good style.

Bouquets of Roses for the hand made a beautiful display. Mr. John Mattock had the best dozen, and Messrs. Cooling & Sons the 2nd best, both arrangements—comprised of buds or small blooms of Teas and Noisettes—being light, and the colours well intermixed.

The premier Rose blooms were a grand bloom of great depth, size, and substance of Madame S.-M. Rodocanchi, which secured for the English Fruit and Rose Company the Silver Medal of the National Rose Society for the best hybrid perpetual Rose in the show; and an extra large and fine bloom of Comtesse de Nadaillac secured for Mr. George Prince a like honour.

Strawberries, as customary at the Bath Rose show, made a fine display, the fruits far eclipsing any shown there in recent years, being of great size and fine colour, the varieties shown being La Princesse, President, Sir J. Paxton, and Trollope's Victoria, gathered from rooted runners planted out last year in a dark, enriched loam. Mr. G. Garaway, Bath, was 1st for six dishes, three dishes, and one dish. Thirty-one dishes of thirty fruits, averaging nearly 2 ounces each, were shown.

EALING.

July 9.—Under the most depressing circumstances, the summer show of this Society took place in the grounds of the Royal India Asylum, Ealing. The rain fell persistently during the afternoon.

Groups arranged for effect.—The best came from T. A. Gledstanes, Esq., Gunnersbury, who had a well arranged and pleasing exhibit.

The best six plants in flower came from E. P. Oakshott, Esq., Ealing (Mr. C. Long, gr.), and included a fine plant of Begonia metallica. Some of the best Fuchsias we have seen at Ealing for years, freely grown and finely bloomed specimens, came from the same. Many foliage plants and Ferns in good condition helped the general effect.

Roses were among the most attractive of the cut flowers. The Gold Medal of the National Rose Society was won by Mr. E. P. Oakshott, with eighteen blooms, having some fine examples, the Silver-gilt Medal going to Mr. E. Hyde.

Fruit was limited in quantity, but good hardy fruits being particularly fine. A good collection was shown by Mr. J. Hudson, Gunnersbury House Gardens, who had Black Hamburgh, Gros Maroc, and Madresfield Court Grapes.

Honorary exhibits included a group from Mr. Charles Turner, Royal Nursery, Slough; Messrs. James Veitch & Sons, Chelsea; Messrs. C. Lee & Son, Ealing. The Messrs. de Rothschild, Gunnersbury Park, Acton (Mr. G. Reynolds, gr.); also from Messrs. Fromow & Son, Turnham Green; and the St. George's Nursery Company, Hanwell.

IPSWICH AND EAST OF ENGLAND HORTICULTURAL.

July 8.—The usual summer exhibition of this Society, of which the Rev. H. A. Berners, of Rose-growing fame, is the Hon. Secretary, took place in a fine park close to the town, which is admirably adapted for the purpose, and famous for grand old Sweet Chestnuts, Limes, Elms, &c., and younger trees of cut-leave Oaks, Wych Elms, &c. Two large marquees were well filled with plants, cut flowers, excellent fruit, and truly wonderful vegetables; and it was said to be one of the best exhibitions held in Ipswich for some time past.

Plants were a somewhat weak feature. The best four stove and greenhouse plants, six ornamental foliage and six exotic Ferns came from Messrs. J. Gilbert & Son, nurserymen, Ipswich. The best specimen plant in bloom was a fine piece of Impatiens Sultani, and the best specimen a good example of Dracæna australis. Tuberous-rooted Begonias and Gloxinias were good for the season of the year. The best group of plants arranged for effect came from Mr. J. G. Marshall, gr. to J. D. Cobbold, Esq.; Mr. C. Whitfield King was 2nd, good plants were employed, but too many of them, a formal appearance and packing being the general characteristic.

Cut Flowers.—Roses and hardy plants were great features; in the class for thirty-six varieties, one bloom of each, Mr. B. R. Cant, nurseryman, Colchester, was 1st with some remarkably good flowers, Mrs. J. Ewing, Thomas Mills, Victor Hugo, A. K. Williams, Marie Verdier, and Baroness Rothschild, were especially fine; Messrs. Prior & Son, nurseryman, Colchester, were 2nd with smaller but very nice fresh flowers. Mr. B. R. Cant, also had the best twelve varieties, three trusses of each, all fresh and good; the Rev. Foster Melliar, Sproughton Rectory, Ipswich, was 2nd with large blooms, but a little past their best. The Rev. H. T. Frere, Burstone Rectory, was 1st with twelve Tea and Noisette Roses, Souvenir d'un Ami, Caroline Kuster, Francisca Kruger, and The Bride, were in very fine character; 2nd, Mr. B. R. Cant, with smaller but good blooms.

The best thirty-six Roses, shown by amateurs, came from the Rev. Foster Melliar, who had splendid blooms, large and fresh, of Jean Soupert, Star of Waltham, Prince Arthur, A. K. Williams, Xavier Olibo, Marie Baumann; 2nd, the Rev. H. A. Berners, Harkstead Rectory. The Rev. H. T. Frere had the best twenty-four Roses; Mr. Palmer, gr. to T. H. Powell, Esq., Drinkstone Park, was 2nd. The Rev. Foster Melliar had the best twelve blooms; the Rev. H. A. Berners was 2nd—both with very good flowers. The Rev. H. Page Roberts, Scole Rectory, Diss, had the best twelve Tea and Noisette Roses, staging a very good lot indeed, particularly Catherine Mermet, The Bride, Rubens, Caroline Kuster, and Ernest Metz, a new variety of great promise, in the way of Souvenir d'Elise, but rather darker. The Rev. Foster Melliar was 2nd, having, among others, a very fine bloom indeed of Francisca Kruger. There were other classes in which remarkably good blooms were shown.

The class for twenty-four herbaceous flowers, distinct, brought a truly wonderful exhibit from Messrs. Paul & Son, Old Nurseries, Cheshunt, who set up very large and striking bunches of Alstrœmeria aurea, A. pulchella, two varieties of fine Delphiniums, Lilium californicum, L. croceum, Centaurea macrocephala, Eryngium alpinuum, Gaillardia splendida, Polemonium Richardsoni, the yellow and orange forms of Papaver nudicaule, Potentillas La Vesuve and Wm. Rollisson (both very fine varieties), Helenium pumilum, Spiræa aruncus, Campanula graminiflora, Chrysanthemum leucanthemum semi-duplex, Campanula persicifolia alba plena, Galega officinalis alba, &c.; the foregoing being a very fine selection of exhibition subjects. Messrs. J. Gilbert & Son were 2nd, with some good things, but much smaller bunches, set up in an ordinary Rose-box, and therefore inconveniently crowded. The best six bunches came from Mr. J. Sheppard, of Woolverstone Park, a very fine lot indeed, Lilium giganteum and Spiræa palmata being particularly fine.

Mr. T. S. Ware, Tottenham, offered special prizes for twelve bunches, correctly named, and also for the best group of hardy perennials, but they were poor by comparison with the fine examples shown by Messrs. Paul & Son and J. Sheppard. Carnations, Pinks (very good laced varieties), Stocks, zonal Pelargoniums (very fine), &c., were shown in a cut stage; also epergnes, bouquets, baskets of wild flowers, &c.

Fruit was well represented, and especially the hardy outdoor kinds. The best six dishes came from Mr. H. Roger, gr. to Lord Rendlesham, who had Black Hamburgh and Golden Queen Grapes, Royal George Peaches, Lord Napier Nectarines, Thompson's Seedling Fig, and Golden Perfection Melon, a very good lot; 2nd, Mr. G. Tebenham, gr. to Lady North, Glenham Hall.

Mr. J. Sheppard, Wolverstone, was 1st with three bunches of black Grapes, staging fairly good Madresfield Court; Mr. H. Roger being 2nd with Black Hamburgh.

The best three bunches of white Grapes were small, but well-coloured Buckland Sweetwater; the exhibitor's name not stated; Mr. Chettleburgh, gr. to Colonel Rouse, was 2nd with Foster's Seedling.

Mr. Dance, gr. to Mrs. Lowe, Gosfield Hall, had the best dish of Peaches, staging very good Early

York; Mr. Rogers coming 2nd with Stirling Castle. The latter had the best Nectarines, showing Lord Napier. Mr. Cheltleburgh 2nd with the same.

Cherries were plentiful and very fine, especially Black Circassian and Black Eagle; the best scarlet-fleshed Melon, Sutton's Triumph; the best green-flesh, Hero of Lockinge; Elton was the best white Cherry.

Strawberries were a truly marvellous feature, so fine, and so finely coloured; the soil about Ipswich is one evidently favourable to bringing this popular fruit to the highest state of perfection.

The best thirty Strawberries for weight, were James Veitch and Sir Joseph Paxton. The best flavoured Strawberry was British Queen; and in this class, Mr. Sheppard had a remarkable dish of fruit of Vicomtesse Héricart de Thury, large and beautifully coloured. Mr. Dance had the best six dishes, staging fine and well-coloured fruit of Preston Seedling, Duke of Edinburgh, Lucas, Sir J. Paxton, President, and Carolina superba.

Raspberries, Gooseberries, and Currants, were very fine.

Vegetables were a remarkably fine feature also. Mr. T. Greenwell, gr. to G. W. Chatteris, Esq., won the 1st prize, with twelve dishes of superb quality. Messrs. Sutton & Sons and Messrs. Webb & Sons offered special prizes for vegetables, and in all the classes there was a very keen competition indeed.

TRENTHAM AND HANFORD HORTICULTURAL.

The third annual show in connection with the Trentham and Hanford Horticultural Society was held on Thursday, when every element of success was present. Ten thousand persons were in the grounds during the day, and the show was opened by the Duke of Sutherland, who was accompanied by the Duchess. The President of this flourishing Society is the Marquis of Stafford. There was a strong, hard-working committee, who are to be congratulated on the perfect success of the arrangements made by them, and carried out under the direction of the Secretary (Mr. John Taylor). The exhibits numbered nearly 600, not so many as last year, the principal deficiency being in the number of exhibits by cottagers. This is due to the lateness of the season, and also to the fact that the show was obliged to be held earlier than usual, in order to secure the presence of the Duke and Duchess of Sutherland, who take a lively interest in the prosperity of the Society. Deficiency in quantity was quite made up for, however, in the matter of quality, the judges being in most cases liberal in their praises of the various classes. The feature *par excellence* of the show was a magnificent collection of cut Roses, which, notwithstanding the drenching rain in the earlier part of the week, were declared to be equal to any ever exhibited before.

The 1st prize was taken by Mr. Frank Cant, of Colchester, who showed twelve blooms of the new Tea Rose, Mrs. John Laing, and also grand specimens of the Pride of Waltham, General Jacqueminot, and Lady Helen Stewart, the last-named being a new variety. Mr. Cant also obtained the 1st prize for twelve distinct Teas or Noisettes, showing the Bride, a new Tea Rose; Souvenir d'Elise, Marie van Houtte, and Catherine Mermet. Messrs. Dickson, of Chester, had some beautiful blooms of Merveille de Lyon; and Messrs. Merryweather, of Southwell, deserve mention for their Viscountess Folkestone and Madame de Watteville. The best dark Roses shown were, in addition to Lady Helen Stewart and General Jacqueminot, Maurice Bernardin, Duke of Edinburgh, and A. K. Williams, the last two being particularly brilliant.

The group of plants by Mr. G. Williams, Manchester, which took 1st, was very well arranged, being broken up by bright-leaved Crotons, and solitary flowering plants, and without stiffness.

Bouquets deservedly require mention, especially those exhibited by Messrs. W. H. Perkins & Sons, Coventry, and Jenkinson & Sons, Newcastle.

Fruit.—Of this the judges said a better show had not been seen this season, and had perhaps, indeed, never been exhibited for the time of year. The black Grapes were extraordinarily fine; Lord Shrewsbury, Lord Suffield, Mr. G. Meakin, and Mr. J. T. Harris were among those in receipt of well-deserved prizes. The Peaches and other fruits shown by Mr. Gilman, gr. to Lord Shrewsbury, Ingestre Hall, were splendid specimens, and Mr. Allan, gr., Gunton Park, Norwich, had also very fine examples of good culture. The Peaches and Nectarines from Trentham Gardens, were fine, beautifully-coloured fruits. Mr. Crawford, gr. to Mr. J. Thorpe, of Newark, succeeded in carrying off three 1st prizes for vegetables in dishes, viz., the Society's prize for nine distinct kinds, Messrs. Webb & Sons' prize for six kinds, and Messrs. Sutton's prize for six kinds. There was only an average show of groups arranged for effect; there were four entries, and the 1st prize was worthily awarded to Mr. S. Matthews, gr. to W. Dobson, Esq., Mr. Turfrey not being far behind with his group, which gained the 2nd place. The cottagers' exhibits were, as already stated, rather meagre. The window plants, Geraniums, and Fuchsias, were in fair condition, but small; the vegetables were moderately good, but by no means an extraordinary show.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (−) the Mean for the week ending July 12.	Temperature. Accumulated. Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (−) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg	Day-deg	Day-deg.	Day-deg.	10ths Inch.		In.		
1	6 —	48	0	+ 78	— 72	10 +	135	25.5	19	25
2	6 —	65	0	— 34	— 58	7 +	116	15.8	31	29
3	5 —	83	0	— 3	— 93	3 —	99	11.6	23	27
4	8 —	83	0	— 67	— 39	1 —	105	12.1	25	35
5	8 —	78	0	— 78	— 26	2 —	97	11.4	19	30
6	6 —	95	0	— 55	— 68	2 +	99	14.7	19	32
7	5 —	73	0	— 3	— 73	7 +	118	25.9	34	31
8	6 —	81	0	— 2	— 81	2 —	110	16.3	25	29
9	6 —	86	0	— 11	+ 12	2 +	114	19.4	27	34
10	6 —	74	0	— 22	— 55	2 —	127	16.4	23	31
11	6 —	85	0	— 7	— 14	3 +	127	22.7	23	32
12	5 —	100	0	+ 49	— 22	4 +	120	18.6	40	40

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 12, is furnished from the Meteorological Office:—

"The *weather* remained changeable and very cool in all parts of the United Kingdom, but in the English and Irish districts the rainfall has been less frequent and heavy than it was during the preceding week. Over Scotland, however, large quantities have fallen, with snow in some of the mountain districts on the 8th. Thunderstorms have been experienced at one or two of the English stations.

"The *temperature* has been considerably below the mean, the deficit being as large as 8° in 'England, E.,' and midland counties, and 5° or 6° in all other districts. The highest readings were observed, as a rule, about the middle of the week, but in the north they occurred more frequently towards its close, the maxima ranging from 70° in 'England, E.,' and 'England, S.,' to 64° in 'Scotland, N.,' and 'England, N.W.' On some occasions the maximum readings were below 60° over a considerable portion of the United Kingdom, and below 55° in some of the northern districts. The absolute minima occurred on somewhat irregular dates, and were very low for the time of year. In 'England, S.W.,' the thermometer fell to 36°, in 'Scotland, N.W.,' to 37°, in 'Scotland, N.,' 'England, E.,' and the midland counties to 38°.

"The *rainfall* has been considerably more than the mean in Scotland, and a little more in the southern parts of England and Ireland, but less elsewhere. In 'Scotland, N.,' the aggregate amounted to three times the normal.

"*Bright sunshine* has again been very deficient, the percentage of the possible amount of duration varying from only 19 in 'Scotland, N.,' the midland counties, and 'England, S.,' to 34 in 'Scotland, W.,' and 40 in the 'Channel Islands.'"

MARKETS.

COVENT GARDEN, July 17.

Our market is now at its full, and consignments are heavy, especially those of Currants and Raspberries. Strawberries are falling off in quantity, but arriving in better condition than hitherto; and although the season has not been favourable, they have always made steady prices. Cherries are of very poor quality, and are cleared off with difficulty, even at low prices. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples, ½-sieve	1 6- 7 0	Lemons, per case	12 0-20 0
— Tasmanian, case	15 0-20 0	Melons, each	1 6- 3 0
Cherries, ½-sieve	1 6- 6 0	Peaches, dozen,	2 0-10 0
Currants, red, ½-sieve	3 0- 5 0	Pine-app'es, St. Michael, each	2 0 6 0
— black, ½-sieve	5 0- 5 3	Strawberries, lb.	0 2- 0 9
Grapes, lb.	1 0- 3 0		

Vegetables.—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichs., Globe, each	0 4- ...	Mustard and Cress, punnet	0 4- ...
Beans, French, lb.	8 0- ...	Onions, per bunch	0 5- ...
Beet, red, per dozen	1 0- 2 0	Peas, per quart	1 0- ...
Carrots, per bunch	0 6- ...	Parsley, per bunch	0 6- ...
Cauliflowers, each	0 3- ...	Shallots, per lb.	0 6- ...
Celery, per bundle	1 6- 2 0	Spinach, per bushel	3 0- ...
Cucumbers, each	0 6- 1 0	Sprue, per bundle	1 6- ...
Endive, per dozen	2 0- ...	Tomatos, per lb.	1 0- ...
Herbs, per bunch	0 4- ...	Turnips, per bunch, new	0 4- ...
Lettuces, per dozen	1 6- ...		
Mushrooms, punnet	1 6- ...		

Potatos.—Market much easier, and sales slow at lower prices. Foreign arrivals, comparatively none. English sorts, heavy arrivals. Prices:—Kidneys, 5s. to 6s.; Beauty of Hebron, 4s. to 5s. *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Fuchsia, per doz.	4 0- 9 0
Arum Lilies, per doz.	8 0-12 0	Heliotrope, per doz.	5 0- 8 0
Aspidistra, doz.	18 0 42 0	Hydrangeas, doz.	6 0-18 0
— speci. plants, each	7 6-10 6	IvyPelargonium, doz.	3 0- 6 0
Begonias, per doz.	6 0-18 0	Liliums, various, per dozen	18 0-36 0
Cactus, per doz.	4 0-12 0	Lobelia, per doz.	3 0- 6 0
Calceolaria, p. doz.	4 0- 9 0	Marguerites, doz.	6 0-12 0
Cyperus, per dozen	4 0-12 0	Mignonette, per doz.	3 0- 6 0
Dracæna terminalis, per dozen	30 0-60 0	Musk, per dozen	2 0- 4 0
— viridis, per doz.	12 0 24 0	Nasturtiums, p. doz.	4 0- 6 0
Euonymus, in var., per dozen	6 0-18 0	Palms in var., each	2 6-21 0
Evergreens, in var., per dozen	6 0-24 0	Pelargoniums, scarlet, per dozen	3 0- 6 0
Ericas, various, doz.	8 0-24 0	— per doz.	6 0-12 0
Ferns, in var., doz	4 0-18 0	Petunias, per doz.	6 0- 9 0
Ficus elastica, each	1 6- 7 0	Roses, various, doz.	12 0-24 0
Foliage plants, various, each	2 0-10 0	— (Fairy), per doz.	6 0- 9 0
		Saxifrages, per doz.	18 0-24 0

*** Bedding plants in variety in boxes, and also in pots.

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun.	2 0- 4 0	Pelargoniums, scarlet, 12 spr.	0 3- 0 6
Bouvardias, per bun.	0 6- 1 0	— dozen sprays	0 6- 1 0
Callæthiopica, 12 bl.	3 0- 5 0	Primulas, double, 12 sprays	1 0- 1 6
Carnations, 12 blms.	1 0- 2 0	Pansy, or Heartsease, 12 bunches	1 0- 2 0
— 12 bunches	4 0- 6 0	Poppies, various, doz. bunches	1 0- 2 6
Cornflower, 12 bun.	1 6- 3 0	Pyrethrum, 12 bun.	3 0- 6 0
Eschscholtzia, 12 bn.	2 0- 3 0	Roses, Tea, per doz.	0 6- 1 6
Eucharis, per dozen	4 0- 6 0	— coloured, dozen	1 0- 1 6
Gardenias, 12 blooms	2 0- 4 0	— red, per 12 bun.	2 0- 6 0
Iris, various, 12 bun.	6 0-18 0	— Safrano, dozen	1 0- 2 0
Heliotropes, 12 spr.	0 6- 1 0	— outdoor, 12 bun.	1 0- 3 0
Lilium, var., 12 bl.	0 6- 4 0	Spirea, doz. sprays	0 6- 1 0
Maiden Hair Fern, do	4 0- 9 0	Stephanotis, 12 spr.	1 6- 3 0
Marguerites, 12 bun.	3 0- 6 0	Sultan, 12 bunches	3 0- 4 0
Mignonette, 12 bun.	2 0- 4 0	Tuberoses, 12 blms.	0 6- 1 0
Myosotis or Forget-me-nots, 12 bun.	2 0- 4 0		
Pinks, various, 12 bn.	3 0- 6 0		

Orchid-bloom in variety.

SEEDS.

London: *July* 15.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, report to-day's market barely attended, with almost a complete absence of business. White Clovers and Trefoils, in consequence of the grievous damage sustained by the new crops, are held with great firmness. Red Clover seed also keeps exceedingly steady. For Mustard and Rape seed there is a fair sowing demand

on former terms. Choice Blue Peas have been scarce. Tares are still inquired for. In Linseed the tendency is upwards. Other articles at this quiet season offer no subject for remark.

CORN.

Averages.—Official statement of the average price of British corn, imperial measure, for the week ending July 12:—Wheat, 33*s.* 2*d.*; Barley, 24*s.* 2*d.*; Oats, 19*s.* 4*d.* For the corresponding period last year:—Wheat, 29*s.* 3*d.*; Barley, 19*s.* 9*d.*; Oats, 18*s.* 11*d.*

FRUIT AND VEGETABLES.

Stratford: *July* 16.—Trade has been excellent during the past week. Hereunder is given a list of the prices:—Cabbages, 2*s.* to 3*s.* per tally; Turnips, 2*s.* to 3*s.* per dozen bunches; Mangels, 15*s.* to 18*s.* per ton; Onions, Egyptian, 7*s.* to 8*s.* per cwt.; Watercress, 7*d.* per dozen; Strawberries, 2*s.* 6*d.* to 2*s.* 9*d.* per peck; Gooseberries, 5*s.* to 6*s.* per flat; Black Currants, 4*s.* to 5*s.* per half-sieve; red do., 3*s.* 6*d.* to 4*s.* do.; Tomatos, 8*d.* per box; Cherries, foreign, 3*s.* to 3*s.* 6*d.* per basket; Cherries, English, 5*s.* do.; Mint, 2*s.* to 3*s.* per dozen bunches; Cucumbers, 2*s.* to 3*s.* 6*d.* per dozen; Pine-apples, 9*d.* to 1*s.* each.

POTATOS.

Borough and Spitalfields: *July* 15.—Quotations:—New: French and Jersey flukes and kidneys, 100*s.* to 140*s.*; do. rounds, 100*s.*; English Myatts', 120*s.* to 150*s.*; Hebrons, 100*s.* to 120*s.* per ton. Old: Magnums, 50*s.* to 60*s.*; Scotch, 60*s.* to 80*s.* per ton.

Spitalfields: *July* 16.—Quotations:—New: Jersey rounds, 5*s.* to 5*s.* 6*d.*; do. kidneys, 6*s.* to 6*s.* 6*d.*; do. flukes, 6*s.* to 7*s.*; Cherbourg rounds, 5*s.*; do. kidneys, 5*s.* 6*d.* to 6*s.* 6*d.*; do. flukes, 6*s.* 6*d.* to 6*s.* 5*d.*; St. Malo rounds, 4*s.* 6*d.*; do. kidneys, 5*s.* to 5*s.* 6*d.*; Lisbon rounds, 3*s.* to 4*s.* per cwt.

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

Mildew on Roses.—In an old book on gardening and other matters, it is stated that Rose bushes, when syringed with a boiled infusion of the leaves of the common Elder, are cleared of mildew after three dressings; and that 4 oz. of flowers-of-sulphur, well mixed with fine sawdust, is a certain clearer of aphides from Rose bushes when strewed over them. Have any of your correspondents any experience of these cheap "cures?" *H.*

NOTICES TO CORRESPONDENTS.

Ash Tree: *A. R.* It may be pruned now, and the wounds will readily heal; or the pruning may be deferred to the winter season. If the saw be the implement used, pare the rough edges of the bark left by it, and any large wounds may be painted with slate-coloured paint, rendering them less unsightly and keeping out moisture. The varieties of Tripoli are selected for autumn sowing, because of their rapidity of growth, when summer arrives. These varieties will not keep long after reaching maturity.

Cocoa Nut: *N. T.* No, strictly maritime.

Epidendrum vitellinum: *W. S.* Many thanks; we will examine, and report next week.

Gardeners' Orphan Fund: *C. P.* (one of the founders) may be assured that the proposal made in our last number will be well taken up.

Grapes: *T. R.* A bad case of shanking, a disease which depends upon a want of proper balance between the temperature, food, air and water supplied, and the power of the plant to deal with them. It may arise from various causes.

Hellebore Disease: *H. W. G.* The plants are attacked by a fungus, Peronospora ficariæ (allied to the fungus of the Potato disease). See a description in our number for July 7, 1888. Affected plants should be destroyed by fire.

Hybrid Passion-flower: *C. W.* The Passion-flower sent is not so good as Eynsford Gem, which is said to have been raised from the same parents. In structure it is almost identical, but the colour is less beautiful. Your plant has nearly the same colour as the old P. cœruleo-racemosa.

Lilium auratum: *W. H. M.* Prepare a well-drained border or site, and, if the soil is not naturally good, make it so, by wheeling in some good loam or kitchen garden soil. Leaf-mould or old Mushroom-bed manure may be incorporated with this, as well as coarse pit sand—not sea-sand. The plants are not averse to a certain amount of shade about their stem from dwarf shrubs, and from buildings or trees, but the latter should be at such a distance that their roots do not reach the Lilies, or failure will result. If trees or strong-growing shrubs are near, plant in big tubs, or make holes, and line them with bricks set in cement. Plant in September or October, at 6 inches deep, making the soil firm about the bulbs, and see that rats or mice do not get at them, as they sometimes will do in hard winters, if the soil about them is kept soft by mulching—better let it freeze. At 6 inches frost will not harm them. If they flower well, let them alone. Lilies hate disturbance—one reason that imported roots often grow badly and die. When the stems are left on the plants in the autumn—and they should not be removed—fasten them securely to stakes, and fill up round them with mould. Many Lilies are killed by allowing the stems to blow about in autumn and winter, forming funnels in the soil, through which rain and snow-water are poured direct into their hearts; and cutting the stems at a short distance from the ground, is equally bad, and for the same reason. The stems, if allowed to remain, gather some protection about themselves by entangling leaves, &c.

Lily Disease: *C. W. S.* We believe it to be the Lily disease in a modified form.

Mushroom: *E. B.* Yes, the common Mushroom. If thy stomach fail thee, eat not at all.

Names of Plants: *Correspondent.* 1. Apple branch cankered; 2, Berberis Wallichii; 3, not found; 4, Quercus Cerris, or, perhaps, a hybrid from it; 5, Abies pectinata, the Silver Fir, so far as can be told from the scrap sent; 6, one of the hybrid Oaks—apparently the Lucombe; 7, a Seaweed—Sargassum bacciferum.—*A. T.* Alstrœmeria flava, Rose alba rosea, Gaultheria shallon.—*Ted.* Lysimachia nemorum.—*E. V.* 1, Galega officinalis; 2, Collinsia bicolor; 3, Campanula latifolia; 4, C. persicifolia; 5, C. muralis; 6, Sedum Anacampseros; 7, Geranium sanguineum; 8, G. sanguineum var.; 9, not recognised; 10, Veronica agrestis. Next time, you should send six only.—*W. J. B.* 1, Fraxinus heterophylla; 3, Abies concolor; 4, Pyrus Aria; 5, Fraxinus monophylla; 6, Andromeda speciosa; 7, Viburnum Tinus. Your numbers are in some cases not legible, so that we are not certain in all cases what you intend.—*E. J.* Erigeron speciosus is correct; E. glaucus—not very rare; the unnamed one is E. macranthus.—*G. S.* 1, Campanula latifolia; 2, Potentilla argyrophylla; 3, Veronica Teucrium; 6, V. prostrata.—*P. T.* 1, Grindelia lanceolata; 5, Sedum album; 6, Œnothera fruticosa Youngii.—*C. Scott.* 1, Aira caryophylea; 2, A. flexuosa; 3, Glyceria fluitans; 5, Picris hieracioides; 6, Hypochaeris radicata.—*C. H.* 1, Magnolia Thompsoniana; 2, Andromeda speciosa; 3, Pernettya mucronata; 4, Glyptostrobus heterophyllus.—*C. B.* 1, Cyrtodeira chontalense; 2, Dendrobium strebloceras; 3, Meyenia erecta, probably; no flower sent.—*W. H. S.* The small flower like Cypripedium niveum which was produced on a plant imported with C. bellatulum seems to prove the correctness of the opinion already expressed, that C. niveum, C. Godefroyæ, and C. bellatulum merge into each other. We have seen a similar instance.—*F. W. L.* 1, Festuca loliacea; 2, Glyceria maritima; 3, G. distans; 4, G. fluitans; 5, Phleum arenarium; 6, Agrostis alba.—*W. H.* Hippeastrum hybrida, in which H. reginæ predominates.—*T. W.* 1, Alonsoa parviflora; 2, Sedum rupestre; 3, Galega officinalis, white var.; 4, Lychnis chalcedonica; 5, Deutzia crenata, dbl.-fl. var.—*George M., Paris,* Flower not received.

Narcissus Bulbs: *P. R.* The bulbs are swarming with the larva of wireworm probably, and with the bulb (Eucharis) mite also.

Onions Sown in the Autumn: *E. J. Miles.* If you sow Tripolis in the autumn, they are of course no other than Tripolis in the spring. Any other kind of Onion may be sown at the season you mention, and they will be fit for use in spring and summer following.

Phylloxera: *New Zealand.* We have no faith in the lime cure for Phylloxera, but it is fair to say we have no personal experience. Bisulphide of carbon or grafting on American stocks are the most efficient means of combating the insect, unless you can flood your vinery, and keep the roots submerged for a long time. Fumigation is of no use.

Strawberries: *R. S.* The fruits appear to be attacked by a mould similar to mildew.—*A. B.* Fruits arrived in bad condition from bad packing. It is probably Bradley's Amateur, a good variety.

Tomato Disease: *E. Y.* A fungus, Cladosporum lycopersici. Try dusting with sulphur.

Tomatos Diseased: *T. E.* The Tomatos are badly attacked by one of the fungi which have been so destructive to Potatos of late years, viz., Cladosporum lycopersici. See *Gardeners' Chronicle,* November 12, 1881, p. 621. The chemical manure used is not the cause.

Two Orchid-houses: *Old Subscriber.* As the houses will stand north and south, it is so much the better, it being then possible to afford ventilation all round. Nothing is so bad for Orchids as imperfect ventilation, and more plants are ruined by it than is ever imagined. The side lights are more of the nature of a luxury, and may be done without, thus escaping a considerable amount of repairs in the future. They may improve the look of a house somewhat, and if they are made of iron frames and thick glass in one or two panes each, the frames being let into the brick or stone piers which carry the roof, they would endure as long as the masonry. Ventilation should be on, or just below the level of the hotwater-pipes, and may consist of "hit and miss" slides, or of louvre boards, easily closed and opened, and made 5 feet apart. These air-holes should not be less than 2 feet in length, and 9 inches high. In the cool house simple clappers at 4 feet apart would be best. These should hang on a centre pin or round bar of iron fastened across the middle of the piece of board, and hung in the wooden lining of the openings. They could be simply propped open with a wedge, &c. All the houses should be provided with a ventilating arrangement extending the whole length of the apex of the house. It need not be an elaborate thing—a hinged, broad board would do. The staging as you propose to have it—that is, a moveable wooden bar stage, supported by a close corrugated iron stage, 6 inches below it, and covered with spar, &c., will answer very well—but let it not touch the wall by about 4 inches. Staffordshire clinkers make a durable path, and if obtained of two or more colours, a pleasing pattern might be made by the bricklayer when placing them. It is well to have other parts of the floor covered with clean gravel, this substance parting with moisture continuously, but slowly. The amount of piping in the cool-house need not exceed that which would serve for an ordinary greenhouse—two flows and two returns running all round the house. The warm divisions should have twice as much as this, and one of the pipes should pass through the rain-water tanks. The pitch of the cool-house roof may be tolerably flat, so as to catch as little of the sun's rays as possible—say, at an angle of 35° with a line drawn horizontally from wall-plate to wall-plate. The angle of roof for the East India and Cattleya may be 50° to 55°.

CATALOGUES RECEIVED.

W. Lovel & Sons, Driffield, Yorkshire—Strawberry Runners.

A. J. A. Bruce, Edge Lane, Chorlton-cum-Hardy, Manchester—Stove and Greenhouse Plants, &c.

Thos. Laxton, Bedford—Strawberries (Preliminary List).

Communications Received.—C. S.—H. J. C.—P. J.—G. S.—R. Blake (photo will probably be engraved shortly).—T. W.—Editor of the *Gentlewoman.*—J. A.—C. P.—Baron von Mueller.—E. J.—J. W.—J. B., Adelaide.—W. J. H.—R.—J. R. J.—T. M., Philadelphia.—J. D. S., Baltimore.—W. R.—F. J. D.—W. T. T. D.—A. C. W., Penzance.—R. A. R.—W. R.—J. G. B.—H. W. W.—J. D.—A. E.—J. O'B.—A. D.—E. M.—H. E.—J. Laing & Sons.—N. Z., Auckland, New Zealand (see articles on the subject in this issue).—F. R.—R. W. A.—W. C.—R. D.—M. D.—W. T.—G. W.—W. D.—J. Rust.—Reis & Bagget, Calcutta.—J. S.—T. Meehan,

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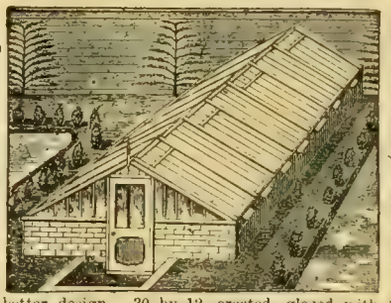
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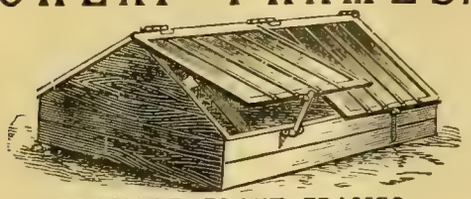
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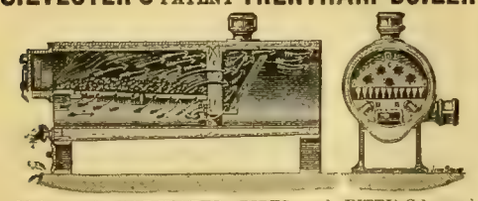
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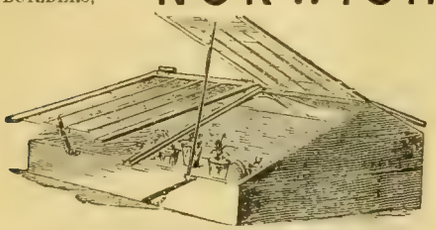


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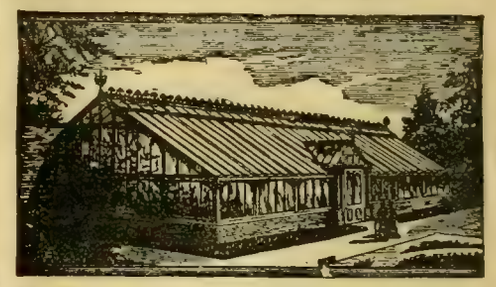
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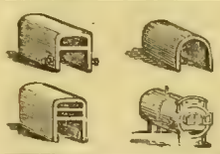


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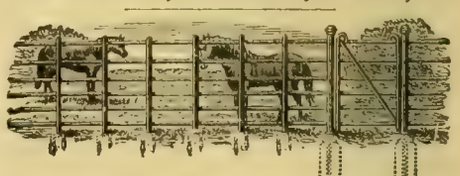
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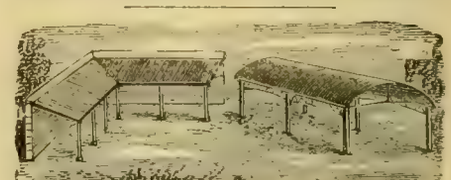
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SALES BY AUCTION.

Tuesday Next.

Imported and ESTABLISHED ORCHIDS, many of the latter being in flower.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, July 29, at half-past 12 o'Clock, a large quantity of Imported DENDROBIUMS, a few PHALÆNOPSIS, an Importation of ONCIDIUM SARCODES and ROGERSII, all received direct, for unreserved Sale. Also a number of ESTABLISHED ORCHIDS from various collections, including several choice Cypripediums—amongst them, C. orphanum and C. macropterum; together with a fine assortment of ORCHIDS in Flower.

On view Morning of Sale, and Catalogues had.

Lee, Kent.

A short distance from Blackheath and Lewisham Railway Stations.

To FLORISTS, NURSERYMEN, MARKET GARDENERS, and others.—By order of the Trustees.

MESSRS. PROTHEROE AND MORRIS (in conjunction with Messrs. D. CRONIN AND SONS) have received instructions to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on THURSDAY NEXT, July 31, 1890, at 2 o'Clock precisely, the old-established long leasehold NURSERY, known as Wright's Nursery, 33A, Turner Road, Lee, containing an area of about 1 acre, and comprising 37 Span-roof and Lean-to Greenhouses, 8 Pits, also Potting and Packing Sheds, Coach House and Stabling, Cottage and Workshops, together with the Leasehold Residence, No. 17, Turner Road, and a plot of Land on the opposite side of the road, having a frontage of 289 feet, by a depth of 7 to 16 feet.

The Vines, Camellias, and Roses, planted out in the various Greenhouses, will be included in the purchase.

The property may be viewed. Particulars and conditions of Sale, with Plan, may be had on the Premises; at the Mart, E.C.; of Messrs. NEWTON AND NEWTON, Solicitors, 180, High Street, Lewisham; of Messrs. D. CRONIN AND SONS, Auctioneers and Valuers, 1, Vernon Place, Bloomsbury Square, W.C.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Friday Next.

IMPORTANT SALE of ESTABLISHED ORCHIDS, by order of His Grace the Duke of Marlborough, in order to make room for other plants.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at their Central Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, August 1, at half past 12 o'Clock, a portion of the extensive and well-known Blenheim COLLECTION of ESTABLISHED ORCHIDS, a large number being in flower, and the whole in unusually fine condition.

On view morning of Sale, and Catalogues had.

Friday Next.

IMPORTED ORCHIDS, by order of Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford; and 213, Park Road, Clapham, S.W.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 1st, at half past 12 o'Clock.

CATTLEYA HARRISONIÆ, a good importation of this beautiful Cattleya just received in splendid condition.

ONCIDIUM VARICOSUM ROGERSII, the large flowering variety, with fine strong bulbs, and in grand condition.

MILTONIA REGNELLII, ONCIDIUM FLEXUOSUM×, O. LONGIPES, all in good condition.

On view morning of Sale, and Catalogues had.

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Without the least reserve.

SIX DAYS' ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. C. Noble, who is under notice to quit all lands held by him under St. John's College, Cambridge, at Christmas next.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, on MONDAY, October 6, and five following days, without reserve, several acres of unusually well-grown NURSERY STOCK, carefully prepared for removal.

Fuller announcements will appear in due course.

Thursday, August 7.

ESTABLISHED ORCHIDS, chiefly in Flower and Bud; also an Importation of ORCHIDS from Brazil.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY August 7, at half-past 12 o'Clock precisely, ESTABLISHED ORCHIDS chiefly in Flower and Bud, from several Private Collections, comprising some fine forms of Cattleyas, Oncidiums, Dendrobes, Odontoglossums, Cypripediums, &c.; also a small Importation of ORCHIDS from Brazil received direct.

On view morning of Sale, and Catalogues had.

Thursday, August 14.

SPECIAL SALE of ORCHIDS in FLOWER and BUD.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE of ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 14, and he will be glad if Gentlemen desirous of entering Plants for this Sale will please send Lists as soon as possible.

MESSRS. POPE AND SONS will include in their SALE on FRIDAY NEXT, August 1, at 5.30 P.M., 20,000 PALM SEEDS, ARECA BAUERI, to be sold without the least reserve. Commissions executed, no charge being made to the purchaser.

Auction Rooms and Offices, 6, Phillips Street, Birmingham.

Cut Flowers, Plants, and Bulbs.

We hold Sales, several each week. Reference to senders of years standing. Particulars on application.

MESSRS. POPE AND SONS, Sale Rooms, 6, Phillips Street, adjoining Market Hall, Birmingham.

FOR SALE, a FLORIST'S BUSINESS, at Woodford. Rent £52 per annum. Dwelling-house, 7 Greenhouses, Sheds, &c. About 17 years of lease to run. Price for lease, goodwill, fixtures, and stock, £150.

Apply, R. M., Ann's Villa, Stanley Road, Woodford.

Mowden Nurseries, Darlington.

TO LET, or FOR SALE, by order of the MORTGAGEES, either as a whole, or in lots to suit Purchasers, the Valuable NURSERY, lately in the occupation of Mr. T. B. Morton, containing about 2 Acres, with Dwelling-House, Stable, Cart Shed, 7 Greenhouses, &c., all fitted up with the most modern appliances; well stocked with Fruit Trees, &c.—Offers will be received by

J. T. HALL, 44, High Row, Darlington.

TO LET, a well-established NURSERY, about 12 acres in extent, well stocked and in fine condition, situated near a large city.—Full particulars on application to A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE LET, on the Duke of Manchester's Estate, Huntingdonshire, several clean convenient FARMS, of from 200 to 600 Acres, in excellent condition (for several years in the occupation of the late Duke). Capital Farm-houses and suitable buildings, all in thorough repair. For particulars, apply to

Mr. B. DAVIES-COOKE, Estate Office, Kimbolton Castle, St. Neots; or to Messrs. BOXALL AND BOXALL, Solicitors, 22, Chancery Lane, London.

To Gardeners, Fruit, and Flower Growers.

A splendid opportunity to an industrious capable man.

TO LET, within 6 miles of Manchester, Seven Large GREENHOUSES, mostly 60 feet long, heated with 4-inch Hot-water Pipes, on most approved principle. Boilers almost new. Plenty of Water with Land (cheap) if required. Rent £40 per year.

For further particulars, apply to T. LEASON, Acomb Street, Manchester.

TO BE LET, near Worthing, Sussex, about 1140 feet of GLASS HOUSES, suitable for Tomatos, Cucumbers, and Grape Growing.

Apply to ARTHUR HENTY, Esq., Broadwater Hall, Worthing.

TO BE LET, 1 to 10 acres of GRASS LAND, suitable for Nurserymen and others, on Lease for 7, 14, or 21 years. Rent from £5 to £12 per acre, with the option of purchasing the Freehold within the first seven years. No tithe. Near the main road, Enfield Highway, about nine miles from London.

Apply, H. MOORE, 59, Bishopsgate Street Within, E.C.

Dover.

TO BE LET, the ASHEN TREE NURSERY, with good Residence, near to the sea front. Five large Plant and Propagating Houses, all in good condition, and about half an acre of Ground. Good connection. Incoming about £100; rent moderate.—Apply to Messrs. WORSFOLD AND HAYWARD, Auctioneers and Agents, Market Square, Dover.

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THE LIVERPOOL HORTICULTURAL COMPANY

(JOHN COWAN, Limited),

Have just received large and fine Importations of Orchids from India, Mexico, Brazil, Columbia and other countries, and will be glad to send full particulars to anyone favouring them with name and address.

The Company also have an immense stock of Established Orchids, descriptive-priced Catalogue on application to the Company, The Vineyard and Nurseries, Garston, near Liverpool.

FERNS—FERNS—FERNS.—Trade offer in 20 most saleable sorts. Adiantums, Polypodiums, Onychiums, Pteris Cyrtomiums, Lygodiums, Polystichums, &c., Adiantum cuneatum, 12s. per 100; 30,000 Pteris cretica cristata, ready to pot into 48's at once, 12s. per 100; large Ferns in variety, in 5-inch pots, 40s. per 100; Pteris tremula for potting on, 20s. per 100. Packing free, cash with order.

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IMMENSE IMPORTATION of that most lovely, free-flowering Orchid, CATTLEYA GASKELLIANA, just to hand. Plump bulbs, leaves green, and dormant eyes; really in splendid condition. Collector states many white ones are to be found in the consignment.

ORCHID PEAT, best in the Trade, 8s. per sack, carriage forward. SPHAGNUM MOSS, 7s. per sack; per bushel bag, 2s.

Apply to WM. GORDON, The Nurseries, Twickenham, Middlesex.

NEW FUCHSIAS.

The finest Set for 1890, is

"FRY'S" BEAUTY OF WEST KENT, DOROTHY, and GEORGE FRY, all of sterling merit, 9s. the Set. The whole stock has been secured, and is now being distributed as fine healthy plants by

JOHN LAING AND SONS, Forest Hill Nurseries, S.E.

Henry Richard Wright, Deceased.

Pursuant to the Act of Parliament 22nd and 23rd Victoria, chapter 35, intituled "An Act to further amend the Law of Property and to relieve Trustees."

NOTICE IS HEREBY GIVEN that all Creditors and other persons having any Claims or Demands against the Estate of HENRY RICHARD WRIGHT, late of the "Royal Oak" Public House, Church Street, Lee, in the County of Kent, Licensed Victualler and Nurseryman, deceased (who died on the 7th day of April, 1890, and whose will was proved in the Principal Registry of the Probate Division of Her Majesty's High Court of Justice on the 19th day of May, 1890, by Henry Charles Mott, of Westmoreland Lodge, Wisteria Road, Lewisham, Kent, one of the Executors therein named), are hereby required to send the particulars, in writing, of their claims or demands, to the said HENRY CHARLES MOTT on or before the 9th day of AUGUST, 1890. After which date the said Executor will proceed to distribute the assets of the said Deceased among the persons entitled thereto, having regard only to the claims and demands of which he shall then have had notice, and he will not be liable for the assets of the said Deceased, or any part thereof so distributed, to any person or persons of whose claims and demands he shall not then have had notice.—Dated this 15th day of July, 1890. NEWTON AND NEWTON,

Solicitors for the Executor.

180, High Street, Lewisham, S.E.

DAILY PARCELS EXPRESS SERVICE to the CONTINENT, *vid* Queenborough, Flushing, Kaldenkirchen.

This Parcels Service, in direct connection with the German and Austro-Hungarian Posts, is specially adapted for the rapid and regular despatch of Plants, Bulbs, &c. No Certificate required for Germany. Tariffs free on application. Goods also accepted for Conveyance by *Petite and Grande Vitesse*.

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Plant-houses for special cultivation of SEEDLING PALMS in store pots.

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ARECA BAUERI, 22s. per 100.
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" RECLINATA, 37s. 6d. per 1000.
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SEAFORTHIA ELEGANS, 7s. per 100.

Samples are only sent per dozen at the wholesale price.

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H.P. DOWAGER DUCHESS of MARLBORO' (Paul & Son, 1890). The first prize Rose at last year's Alexandra Park Show; new colour, delicious scent—7s. 6d. each.

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And their grand New Roses of 1889.

JOHN D. PAWLE, most original, and finely coloured cream Rose. Award of Merit R.H.S.

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Hyacinths, Tulips, Crocus, Lilies, &c.

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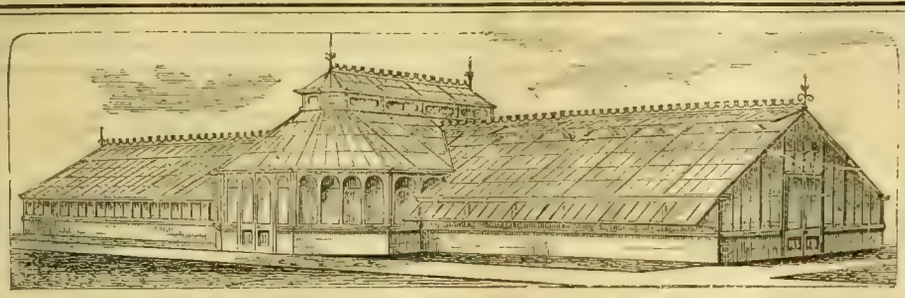
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COLOURS RANGE from PURE WHITE to DEEP CRIMSON.

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Also 2500 of FICUS ELASTICA, fine plants; and 150,000 seedling PALMS, in fine condition for potting. All at reasonable rates.

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INDISPENSABLE GREENHOUSE PLANTS.

PRIMULA SINENSIS and CINERARIA, superb strains, seedlings from stores, 1*s.* 6*d.* per dozen, 10*s.* per 100; BOUVARDIAS, the finest and freest flowering kinds, small plants for growing on to bloom this winter, 4*s.* per dozen; single BEGONIAS coming into bloom or bud, lovely flowers, 1*s.* 6*d.* each, 10*s.* per dozen; FERNS in variety, distinct and beautiful sorts in small pots, twelve in twelve distinct species, 4*s.* TEA ROSES in the most lovely kinds, 1*s.* 6*d.* and 2*s.* 6*d.* each.

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4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.

LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each.

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RECOMMENDS HIS

LILY OF THE VALLEY,

very strong pipes, 25*s.* per 1000 pipes;
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Large Silver Medal, Berlin, 1890; Bronze Medal, Hamburg, 1889.

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PRIMULA, CALCEOLARIA, CINERARIA, GLOXINIA, AURICULA, POLYANTHUS, PRIMROSE, CARNATION, HOLLYHOCK, PANSY, SWEET WILLIAM, WALLFLOWER, SILENE, &c.

Priced Catalogue, post-free. All Seeds delivered free.

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CRUSHED BONES in all sizes, for **VINE BORDERS, LAWNS, POTTING, GRASS LANDS, &c.**

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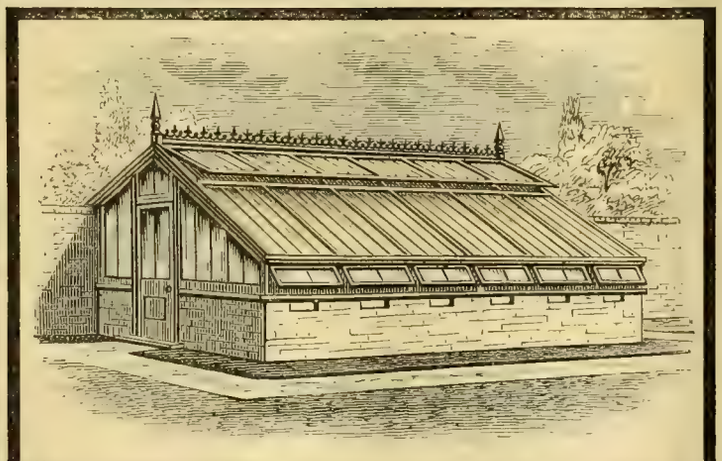
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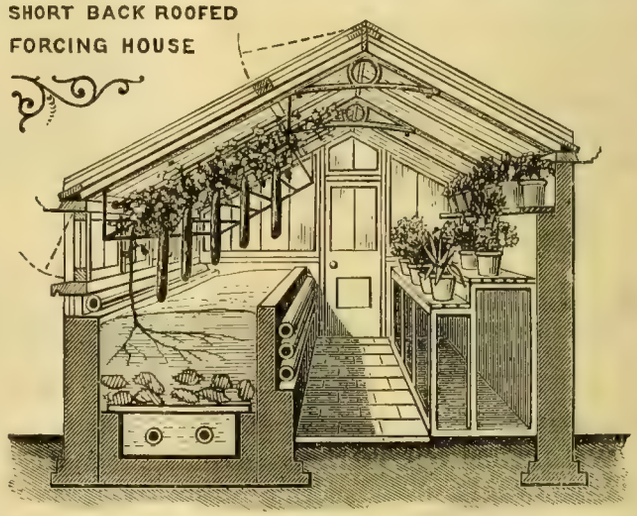
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(LIMITED),
(LINDEN), Brussels, Belgium.

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INTRODUCED DIRECTLY BY THE COMPANY, AND ANNOUNCED FOR THE FIRST TIME.

AERIDES AUGUSTIANUM

(R. A. ROLFE).
See R. A. ROLFE's description in *Gardeners' Chronicle*, January 4, p. 9. Figured in *Lindenia*, v., 210.

ZYGOPETALUM YORISIANUM

(R. A. ROLFE).
See R. A. ROLFE's description in *Gardeners' Chronicle*, June 7, p. 704.
"This is a very distinct and handsome species. . . . . These characters impart to the plant a novel and striking appearance. . . ."—Figured in *Lindenia*, v., 237.

CATTLEYA WAROCQUEANA

(LIND.).
See R. A. ROLFE'S description in *Gardeners' Chronicle*, June 14, p. 735.
"M. Bungeroth expresses the opinion that it represents a new and distinct form of great beauty, and he ought to be in a position to judge. . . . The materials show a rather wide range of variation. The well-dried flowers are 6½ inches across. . . . . Such is the character of this variable, but beautiful plant. . . . ."

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Will be shortly described in *Gardeners' Chronicle* and *Lindenia*.
A new and very striking species of that wonderful genus.

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(LINDEN),
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PLANTS in Pots, that can be planted all through the summer.
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THE
GARDENERS' CHRONICLE
FOR
Next Week, August 2,
WILL CONTAIN A
REPORT ON THE CONDITION
OF THE
FRUIT CROPS
FOR 1890.



THE
Gardeners' Chronicle.

SATURDAY, JULY 26, 1890.

GARDENERS' ORPHAN FUND.

THE third anniversary meeting of the young Society on Friday last was of a "mingled yarn, good and ill together." It is only three years since the Fund was established in the Conservatory at South Kensington. It was among the last things done in that ill-fated place, and one which in after years it will be, as, indeed, it is now, pleasant to look back upon. On March 22, 1887, after much informal and preliminary discussion, a committee was formed to endeavour to give substance to the proposal emanating from Mr. Penny and Mr. Clayton as to the best way of commemorating the Jubilee of the Queen. At that meeting Mr. George Deal was present, as he was at a subsequent one three days later, and whereat, if we remember rightly, he became, at the request of his colleagues, Chairman of the executive committee.

Nine meetings were subsequently held to prepare the scheme, and at length on July 12, 1887, the fund was formally inaugurated by Sir Julian Goldsmid as President, the funds in hand or promised at that date amounting nearly to £1000. We allude to this little bit of history to emphasise the fact that a very large share of the work of starting this charity was taken from the very first by Mr. George Deal. More than that, up to the very last, he continued to manifest his interest in the scheme, and scarcely, if ever, missed attendance at the monthly meetings. In June, 1888, the receipts were announced in round numbers at £1821. In June of the present year the receipts were stated to be £2583. £3500 and upwards are invested in sound securities, and already nineteen children were receiving the benefits the Fund was instituted to confer; that number was increased to thirty at the annual meeting on Friday last, when Mr. N. N. Sherwood presided, ten being duly elected, and one placed on in connection with the Wildsmith Memorial. The satisfaction experienced at such progress was somewhat clouded by the recent death of Mr. George Deal, and the meeting which would have been one wholly

of congratulation for the present, and hope for the future, was saddened by the mingling of the yarn in the manner indicated. Were the members discouraged? not one whit. Deal, Woodbridge, Wildsmith, and Williams, these and others of the founders have been removed, but their removal has but stimulated the survivors to take up, with even more zeal, the work which those men commenced.

No more fitting method, it has been generally felt, could be devised for perpetuating the memory of George Deal than that of extending the benefits of the Fund he did so much to inaugurate and to administer. Accordingly, at the annual dinner, presided over by Mr. Shirley Hibberd, it was announced that Messrs. N. N. Sherwood and H. J. Veitch had made the following generous proposal at the annual general meeting held that afternoon; but of the seventeen candidates, only ten could be elected, leaving seven children unprovided for and the offer of those two gentlemen was, that if the subscribers and supporters of the Fund would raise, as a minimum, the sum of £250, sufficient to maintain two of the unsuccessful children, they (Messrs. Sherwood and Veitch) would provide for the rest. Subscriptions were freely given during the evening, and as the list is still open, any one wishing to support the "Deal Memorial," should communicate with Mr. A. F. Barron.

Having thus worthily paid a tribute to the memory of the late Chairman of the Committee, the dinner proceeded, and under the genial presidency of Mr. Shirley Hibberd, and the presence of a large and sympathetic gathering of gardeners, the event, as might have been anticipated, passed off very satisfactorily, the order of procedure being of a lighter and more varied character than usually characterises charity dinners.

The following are the names of the elected children, in the order of election:—R. J. Phillips, Thos. Henderson, G. P. Shrubb, H. E. Skelton, G. Beveridge, B. S. Deedman, F. Butcher, S. E. Baker, H. W. Milne, and A. Lacey.

Mr. Barron was unanimously re-elected Secretary, and Messrs. Bates, Dean, Herbst, Richards, and Wright re-elected to the committee, with Messrs. G. Bunyard, J. Wills, and W. Marshall as new members, in place of Messrs. Goldring, Penny, and Roberts, who retire.

New or Noteworthy Plants.

HEMEROCALLIS AURANTIACA, *Baker, n. sp.**

Stem 3 feet long. Leaves six to eight to a stem, ensiform, as long as the stem, above an inch broad, acutely keeled. Flowers six to eight in a corymb, the main peduncles of which are about an inch long; bracts ovate, green, not congested, ⅓ to ½ inch long. Perianth-tube cylindrical, eight to nine lines long; segments bright orange, above 3 inches long, the outer oblong-lanceolate, an inch broad, thick and firm in texture, the inner narrow and thinner, the flower opening less widely than in any of the other species. Stamens half as long as the perianth segments.

HEMEROCALLIS THUNBERGII, *Baker, Hort.*†

Stem 2 feet long. Leaves linear, green, as long as the stem, ½ to ⅝ inch broad. Flowers eight to ten in a lax corymb, and also one to two placed lower down on the peduncle. Perianth-tube cylindrical, nearly an inch long; segments lemon-yellow, 2 inches long, crisped and membranous at the edge, the inner oblong, an inch broad, the outer oblong-lanceolate, the flower opening widely when fully expanded, so that it measures 3 inches across. Stamens half as long as the perianth-segments. Style overtopping the stamens.

Mr. Dewar has called my attention to those two Day Lilies which are now, at the middle of July, in full flower in Kew Gardens. They differ from all the other forms of the flava series by their later flowering. Typical flava, minor (graminea), Dumortieri (of which rutilans and Sieboldii are forms), and Middendorfii are all over, about London, by the end of June. The plant I have named aurantiaca seems worthy to be regarded as a distinct species. It is very robust, with a large, deep orange, little-opened flower, and botanically comes nearest Dumortieri, from which it differs by its produced perianth-tube. We do not know its native country, but doubtless it is either Japan or East Siberia. I do not find anything that matches it amongst the large series of dried specimens in the Kew Herbarium. Except for its later flowering, Thunbergii does not differ materially from flava. I believe that it comes from the mountains of Japan. *J. G. Baker.*

MAXILLARIA LONGISEPALA, *Rolfe, n. sp.**

This is a new and very elegant species, sent from Venezuela by M. Bungeroth, to Messrs. Linden, L'Horticulture Internationale, of Brussels. Comparatively few Maxillarias are of much horticultural value, but there are a few exceptions, and this among the number. It is allied to M. pentura, Lindl., though the flowers are larger, and a light purple-brown, faintly striated with a darker shade. The sepals are nearly 4 inches long, the petals a little shorter, and the much shorter lip of a greener shade. The genus is large and difficult, but I cannot find anything like it, and therefore propose for it the above name. A figure will appear in an early issue of the *Lindenia*. *R. A. Rolfe.*

CYTISUS ADAMI ×.

[Year after year correspondents of this and similar journals send, with expressions of astonishment, specimens of a Laburnum which is, indeed, of a surprising character. Although some botanists and nurserymen are familiar with the facts of the case as they present themselves to the unaided vision, we are not aware that a thorough microscopic scrutiny has been made of the plant. It is, therefore, with peculiar pleasure that we insert the following article, with which we have been favoured by Dr. Macfarlane, in the full confidence that by such observations results of great importance physiologically, and especially from a practical point of view, will accrue. We may add that, at the suggestion of Mr. Romanes, a series of experiments is in progress at Messrs. Veitch's nursery, at Combe Wood, in relation to these hybrid Laburnums. Ed.]

Notes on the Structure and History of Cytisus Adami.

Growing on adjoining branches of one tree are found leaves and sprays of the yellow Laburnum (Cytisus Laburnum), tufted twigs, small leaves, and solitary flowers of the purple species (C. purpureus), and stout twigs bearing upright racemes of dusky-red flowers, intermediate between the two. Replying to the queries of correspondents, the editors of our gardening papers have informed their interrogators that the last had been named Cytisus Adami, and that it was supposed to have originated as a graft hybrid between the yellow and purple species, which themselves formed part of the tree.

For full information as to the history of the plant, we would refer readers to the subjoined list of references.† Suffice it to say, that M. Adam, who first sent out the plant, stated that it originated as a result of shield-grafting (budding) of the purple on the yellow Laburnum, a strong shoot developed from the graft or bud having been propagated, and from this the varied progeny has sprung.

The first plants brought into the market date back to 1828, or 1829, so that the oldest should now be about sixty years. Soon after its first appearance two views were held as to its origin, some stating that it was a seed hybrid which appeared in a bed of Laburnum seedlings; others, accepting Adam's statement as consonant with the peculiarities of the plant, viewed it as a graft hybrid. The former opinion was held by Mr. Rivers (*Gardeners' Magazine*, vol. xii., 1836, p. 224), but in support he adduced no proof or historic evidence.

After microscopic study of more than seventy seed hybrids, I have demonstrated that these exhibit intimate blending in cell-structure o the two parents (*Gardeners' Chronicle*, p. 543, May 3, 1890). I looked therefore, with interest, to a comparison of these Cytisus Adami. During the last two months I have been able, through the kindness of various correspondents, to examine and compare thirteen specimens of it one with another, and with the parent forms. I may at once state that in all points of structure, I have found the yellow and purple parts of the composite tree to agree with the parent plants, though, as Darwin points out, "the branches with purple flowers appear at first sight exactly to resemble those of C. purpureus," but differ "in the shoots being thicker, the leaves a little broader, and the flowers slightly shorter, with the corolla and calyx less brightly purple; the basal part of the standard petal also plainly showed a trace of the yellow stain." Elsewhere I shall discuss the last point.

Transverse and longitudinal sections of the young stem show in the three an epidermis with thick cuticle. The nuclei of the epidermal cells differ in size, but below I shall refer to this in a similar connection. In C. purpureus the subjacent cortex or rind consists of seven to ten layers of elongated cylindrical chlorophyll cells, traversed by five strands of fibrous or sclerenchymatous tissue. In the red and yellow forms, the cortex consists of thirteen to seventeen layers of isodiametric cells, with colloid walls more strongly thickened than in the purple, but the strands are absent. In C. purpureus the phlœm-fibre masses are small and irregular in size, but large and semi-lunar shaped in the other two; and while the phlœm or bast is a narrow layer in the first, it is a broad well-developed zone in the others. The xylem does not seem to differ greatly except in amount. The pith-cells in "purpureus" are rather irregular, with slightly thickened walls, showing very shallow pits, while the cells in the others are quadrangular and thick-walled, with correspondingly deep pits. We conclude therefore that young stems of the red and yellow parts greatly resemble each other, and differ from those of the purple parts. In older stems of two years and upwards, a marked difference is observed in cork-development. The purple twigs form a narrow cork layer, which here and there ruptures along the "lenticel areas;" the yellow parts produce a deep and smooth cork, while the red parts show an intermediate condition, with even larger and more irregular lenticel areas than the first. This, I take it, is explained by its combining the vigour of growth of one parent with certain structural peculiarities of the other.

But the leaf parts—vegetative and floral—are worthy of special note. The upper epidermis is almost identical with that of the lower leaf surface in the purple form as regards cell-shape, number of stomata, and absence of hairs, etc., except along the ribs, where a very few occur. The

* *Hemerocallis aurantiaca*, Baker, n. sp.—Caule tripedali; foliis ensiformibus viridibus, caule æquilongis; floribus corymbosis; perianthii tubo cylindat, 8—9 lin. longo, limbo aurantiaco tubo quadruplo longiori; segmentis crassis margine membranaceis exterioribus oblongo-lanceolatis interioribus lanceolatis; staminibus segmentis duplo brevioribus.

† *Hemerocallis Thunbergii*, Baker—Caule bipedali; foliis linearibus caule æquilongis; floribus citrinis laxe corymbosis; perianthii tubo cylindraceo subpollicari; segmentis late falcatis, margine membranaceis, exterioribus oblongo lanceolatis interioribus oblongis; staminibus limbo duplo brevioribus.

* *Maxillaria longisepala*, Rolfe, n. sp.—Pseudobulbs tufted, ovate or ovate-oblong, subcompressed, 1 to 1½ inch long. Leaves narrowly ligulate, acute, 6 to 9 inches long, 8 to 10 lines broad. Peduncles 6 inches long, with four to five sheathing bracts. Flowering bract lanceolate, acute, reddish-brown, 1 to 1½ inch long. Sepals nearly 4 inches long, very narrow, long acuminate, pale purple-brown, faintly striate, with a darker shade. Petals similar, but a little shorter. Lip ovate, oblong, obtuse or subapiculate, 1 inch long, margin a little reflexed, light yellowish-green, with radiating lines of dark reddish-brown on the margin. Column pale green, 5 lines long. *R. A. Rolfe.*

† *Annales de la Soc. de l'Hort. de Paris*, t. vii., 1830, p. 93; Loudon's *Gard. Mag.*, vol. vi., 1831, p. 335; viii., 1832, pp. 473 to 474; *Gard. Chron.* 1841, pp. 265, 325, 336; 1842, p. 397; 1857, pp. 382, 400, 464; 1864, p. 244; 1865, p. 509; 1866, pp. 565, 733; 1868, p. 575; 1870, pp. 767, 831; 1884, pp. 772, 810, 811; Braun, "Rejuvenescence." *Ray Soc. Bot. Mem.*, 1853; *Bot. Zeitung*, 1873; Focke, *Pflanzen Mischlinge*, pp. 519 to 522; Darwin, *Animals and Plants under Domestication*, 2nd edit., 1890, vol. i., pp. 413 to 417; Morren, E., *Belgique Horticole*; Caspary, *Bullet. du Congrès Internat de Botanique*, Amsterdam, 1865, p. 72; Masters, "Grafting, its Consequences and Effects," *Popular Science Review*, April 1871.

red form has stomata abundantly on the upper epidermis, but in the proportion of three to four compared with the lower, it is also devoid of hairs. The yellow form has the stomata entirely confined to the lower epidermis, if we except a narrow patch on the upper epidermis along each side of the midrib, towards its base, and the entire under-surface is covered by spindle-shaped unicellular hairs with tubercular thickenings. Even with the naked eye, but readily with a hand lens, one can detect these hairs, and, taking this into account, along with one or two other constant features, I have identified many branches of the three sorts, as well as branches of the parent plants, when a leaf from each was submitted to me by a friend. Loudon states* that C. Adami is "a sport from a bud of C. purpureus inserted in C. alpinus in 1825 by D. Adam." This mistake could not have been made had the microscopic structure of C. alpinus been known, for in all specimens of it that have come under my notice there is an entire absence of hairs over the lower epidermis, and of stomata over the upper surface.

Transverse leaf sections of the purple and intermediate parts are thicker than those of the yellow in the proportion of five to four. The pallisade tissue of the first forms a continuous layer over the vascular bundle of the midrib, and beneath this is a very dense round-celled, spongy parenchyma, so dense that it scarcely deserves the application of the term "spongy." In the red and yellow the pallisade tissue is interrupted above the midrib vascular bundle by four to five large companion bundle cells, while the spongy tissue is loose in the last, and intermediate in density in the second. The structure of the petiole is very interesting, but I shall not refer to it here.

Enough has been said to prove that the intermediate or red form does not show the intimate blending of cell-conditions exhibited by seed-hybrids, but a curious mixture of tissue masses, partly characteristic of one parent, partly of the other. I do not wish to assert, however, that actual blending of cell conditions has not taken place to a considerable extent. On the contrary, the behavour of branches of each, when placed in alcohol, indicates that organic products, which give a brown colour to the liquid, are abundant in the purple, less abundant in the red, and present only in very small quantity in the yellow parts. Here I may mention that the epidermal cell nuclei in the leaf of the purple and red parts agree in being nearly, or quite, twice as large as in the yellow, while equally striking differences are observable in the stem, a fact of great import to the histologist, who now regards the nucleus as the special centre of cell-life and activity.

The floral, much more than the vegetative, leaves of C. Adami show distinct blending of cell-structure, though there is a strong leaning throughout to the purple parent. The distribution of the vascular bundles, the size, shape, and contents of the floral leaf-cells all prove this, but detailed comparison cannot be made in an article such as this.

When the microscopic features of this remarkable plant are compared with those of seed-hybrids, one is strengthened in the belief that Adam's account is correct, and that we have here an example of what intimate graft union can accomplish.

If we attempt to account for its origin we are restricted, so far as I can see, to one set of requirements. Bearing in mind the continuity of cell protoplasm, and the perfect union effected by graft processes alike amongst plants and animals, most difficulties will be overcome if we suppose that in choosing and preparing the shield graft (bud) and the stock, a small bud in each had been halved by the propagator, and the cut faces of the buds neatly applied to each other so that junction might in time result. Along the line of junction a union of cells and of their contents would almost certainly take place, producing mixed effects such as Darwin has described in Potatos and Hyacinths. That many failures for one success may be expected is evident, when we remember how rapidly exposed cell-surfaces dry up, shrink, and die; but, on the other hand, graft working is usually proceeded with when the tissues are least liable to decay, and when the chances of future union are considerable.

So far as I am aware (though I shall be glad of correction, if wrong), skilled grafters do not aim at effecting bud unions; in truth, the rapidity with which the process is conducted militates against this; but such unions, if possible, should produce striking results. Surely a wide field is still open for graft hybridisation experiments. Let us hope that our skilled grafters will enter it, and soon accomplish striking achievements.

Before closing, I may allude to what, in nursery catalogues, is known as C. Laburnum var. purpurascens. This is regarded by some as a purple-red sport of the Laburnum plant, and quite distinct from C. Adami; but all the specimens that I have obtained of it prove to be the intermediate or "Adami" variety, from which the purple, and, in some cases, the yellow parents have died off, or been separated by propagation. The testimony of cultivators would be of great value. *J. M. Macfarlane.*

* *Trees and Shrubs of Great Britain*, p. 316

WELTON HOUSE, BROUGH.

Charmingly situated on a gentle slope towards the north, and within a comparatively short distance of the Humber, is the handsome and substantial residence of W. H. H. Broadley, Esq. Much of the surrounding country for several miles is studded with fine timber, and particularly so the way I took by the pretty village of North Ferriby. On entering the grounds at a lodge, one finds oneself in one of the prettiest enclosures in that part of the country. There were an infinity of flowering shrubs, purple Beeches, just leafing; Chestnuts were in bloom, and Conifers putting on their varied shades of green. The sun was sinking, and there was much to see in the many things of interest to view before saying good-bye to my old and much esteemed friend, Mr. Lawton, the gardener. Taking the course along the lengthy drive, the mansion is passed on the south side, where the prospect is an open one, and the eye is carried over the Humber to the distant hills of Lincolnshire, the intervening miles of water being covered with pleasure-boats and steamers—a sight not readily forgotten.

After passing through the pleasure-grounds, where the bedding-out was being pushed on, and much of the spring beauty had been sacrificed to make room for the summer occupants, the fruit houses were entered, which, although not so numerous as those devoted to the cultivation of plants, were in good keeping, and full of promise of fine crops. Early Grapes were just turning colour, and some creditable bunches were observed, whilst the Muscats in another division were very fine, the bunches solid, tapering, with every berry fertilised, and some of the bunches would, when finished, turn the scale at 5 lb. Melons and Cucumbers were full of promise, while Grosse Mignonne Peaches were an excellent feature in both houses, as also were other varieties. One tree of Acton Scot, if my memory serves me right, was carrying an excellent crop, and was highly spoken of by Mr. Lawton as being a Peach of fine quality. A thousand Strawberry plants are reared and forced annually, including Vicomtesse Héricart de Thury and Keen's Seedling for early fruits, and President and Sir Joseph Paxton are grown to succeed these. Of the latter, several shelves full were bearing heavy crops of large, bright-coloured fruit.

Leaving the fruit-houses, some beautiful specimen plants were remarked, many of which have figured with great credit at northern exhibitions. Specimens of Gleichenia dicarpa ranged from 3 to 8 feet high, and as many feet through; G. speluncæ was 4 feet in diameter; G. Mendelii, 5 feet. Among the many plants in bloom were noticed Franciscea Lindleiana, very fine Statice profusa, Erica Cavendishii, of large size; E. Paxtoni and E. tricolor, 4 feet through and smothered with bloom; Cypripedium venustum bearing a fine lot of flower spikes; and Indian Azaleas in bloom, included Queen of the Belgians, a magnificent plant 6 feet high, and as much in diameter; others whose names I did not learn were admirably bloomed. Erica ampullacea, Baines' variety, was noticed in good form, being full of flower. A fine plant of Ouvirandra fenestralis, was observed growing in a tub of water. The plant had thrown up several flower-spikes, but not being thought of much consequence, these had been pulled off as fast as they appeared above the water. The skeleton leaves are very pretty and peculiar. I could not stay here as long as I should have wished, but a great number of good plants were seen. The kitchen and fruit garden contained, to my surprise, many crops as forward as those I had left behind in Kent; Peas were podding, Potatos were 12 to 15 inches high, French Beans were up, and Scarlet Runners ready for putting the stakes to them. The land was so clean that not a weed could be seen, and everything was in the best of trim. The large conservatory, which was next visited, is a lofty building adjoining the mansion. One of the walls—that of the mansion itself is covered with Camellia plants which annually produce some 1200 blooms—and the roof of the conservatory is well-clothed with the best kinds of climbing plants. The Camellia is also employed as a decorative plant in beds on each side of the middle walk, and very fine bushes they are, and several of them, including the favourite C. alba plena, are fully 10 feet in diameter of head, and as much in height—Palms, including Kentia Belmoreana, 14 feet high; and Tree Ferns occupy prominent positions in this house, and on stages nearer the sides, and as screens to the pots holding large plants are masses of flowering subjects of the usual character.

The gardens of Welton are well worth a fuller description than my hurried visit permitted, and contain much of interest to the lover of trees and plants generally. *H. Markham.*

NURSERY NOTES.

SOME NOTES FROM THE QUEEN'S ROAD NURSERY, CHELTENHAM.

Many kinds of plants, which are rarely seen in a private collection, are so well grown at these nurseries, that a few notes concerning them will be of value to your readers. Those who wish to see plants well grown should certainly pay Mr. Cypher's nursery a visit. Every attention will be paid them by the courteous proprietor, who is never so pleased as when showing his visitors how his plants are grown. Plants were noticed in all stages, from the exhibition giants to small stuff for every day sale.

Mr. Cypher does not harbour any useless or shabby plants, but is constantly bringing on others to take their place. Everything is well done, as those who have seen these plants at flower shows can testify to the extent to which plants are grown, for Mr. Cypher frequently is showing at three places on the same day, hundreds of miles apart, and yet the visitor to the nursery remarks no diminution of stock.

The Allamandas grown here chiefly for exhibition are nobilis, Hendersoni, grandiflora, and a new variety—magnifica, a splendid flower, similar to nobilis, but with more substance and colour, and as free a bloomer. These plants, in grand condition, were, and are, a dense mass of flowers. Mr. Cypher grows them in good loam, a small quantity of peat, charcoal, and coarse sand, and, of course, in plenty of heat, and close to the glass, liquid manure being afforded them when the pots fill with roots. Under this regimen short, sturdy growth is made, and the floral period lasts for a long time. Allamandas are often seen with weakly and thin growths, the result very often of too much peat being used in the compost, and too much shade.

The houses of Ixoras contained splendid specimens, the early plants being well set with bloom

Ixoras are a specialty of Mr. Cypher's, and he endeavours to get large bushes, perfectly clean, and full of strong healthy shoots. Ixora coccinea still holds its place in his collection as one of the best to bloom whilst young. The other varieties chiefly grown are I. Coleii, I. Regina, I. Williamsii, I. Fraseri, I. Pilgrimi, I. Duffi, I. Westii, and I. Prince of Orange; these plants get thoroughly syringed in bright weather, and have full daylight, being only shaded from the brightest sun.

The Anthuriums were very fine, and I do not remember ever seeing so many fine spathes, and these so good in colour; A. Wardii was very large, the spathes being almost square, and well elevated above the foliage; this is a variety whose spathes are flat, not twisted as is sometimes the case. A. Cypherii, named after the raiser, is deeper coloured than the first-named variety, and has large spathes, which are freely produced. There were several seedlings in this house which looked very promising, and which may prove eventually to be good things. Some Stephanotis plants covering the roofs of several houses, were in various stages of growth, some had just been taken down and re-tied on to the trellis; these are a mass of flower buds, and some of the plants cover entirely the roof of the house in which grow Maidenhair Ferns for cutting, and in this way the roof and interior of the house are both utilised. The variety of Stephanotis is that known as Elvaston, which is very free in flowering. The Dipladenias were making a splendid growth on the roof of some houses set apart for these plants, and no plants are better done than these. It is common to see Dipladenias anything but healthy in private gardens, but here the plants are all that they should be.

Crotons were splendid, large masses and vigorous, of free growth and splendid colour, no thrip or red-spider visible on them. Plenty of atmospheric moisture is the chief secret of growing Crotons under glass. Clerodendrons were finely flowered, and the plants large, with scarcely a leaf to be seen for flowers. C. Balfourianum is what is chiefly grown for exhibition; the plants being grown in quantity. Indian Azaleas were beautiful at this date (May 17), and some of the plants were from 5 to 6 feet in diameter, and 5 feet high—grand examples of good cultivation. Some of the finest were Duc de Nassau, Roi de Hollande, Lady Poltimore, lovely white; Beauty of Surrey, Neptune, Apollo, Souvenir de Prince Albert, Reine des Pays Bas, Grandis, Mdlle. Leonie van Houtte, a grand variety; and Superba. Souvenir de Prince Albert is a useful late flowering Azalea, and it is grown in quantity.

Ericas are, perhaps, better done here than in most English establishments, and finer examples than those of E. Cavendishiana are seldom if ever witnessed; the plants are covered with bloom every year. Mr. Cypher must reserve these giants for very special occasions, as no ordinary exhibitor could cope with them; but the Ericas are not all giants, but may be seen in all sizes, and all are in perfect health. Some of the best are E. depressa, affinis, Victoria, ventricosa rosea, v. magnifica, v. hirsuta alba, v. coccinea minor, tricolor Wilsoni, perspicua nana. Many of these at the above date were in full bloom, and stood under an awning in the open air, objects of beauty not often met with. Many of these useful plants have had to make way for Orchids and other soft-wooded plants, that are certainly easier grown, but which are not so lasting.

Boronias were also a fine feature. A grand specimen of B. heterophylla was noted, and I should say that it is the finest plant in the country. It is comparatively new, and will make a fine plant for exhibition, also invaluable for the cool conservatory if carefully grown. These plants are free to blossom if grown in a proper temperature, and, generally, are easy of management. The young plants here were growing luxuriantly, and models of what a healthy plant should be. Pimeleas are largely grown, and for exhibition purposes they are most useful; it is a wonder they are not extensively grown, as they form beautiful objects in the greenhouse—for the last-named purpose, when grown loose or without sticks, or with only one or two supports. Many Pimeleas are lost after repotting by giving them too much water, and by cold draughts of air. P. spectabilis rosea is a fine pale pink variety; P. Hendersoni is a bright rosy-pink, of somewhat smaller trusses; P. decussata has large trusses, and is a free bloomer; and P. mirabilis is a fine species of later introduction than the others. Mr. Cypher still grows many of the old favourite plants, which are not readily beaten in the exhibition tent; and those who saw his plants of Franciscea in the coolhouse cannot fail to admire them. F. eximia at this date was beautifully in bloom.

There were numbers of the old but useful Darwinia covered with their bell-shaped flowers. Kalosanthes coccinea was also to be seen at its best—it is still the best variety; Dracophyllums are also old favourites, and they are grown to perfection; Epacris also, and in quantities. Orchids come last, though they are not the least in this establishment, for many houses are devoted to their requirements, and the plants are as well done as the hardwood plants previously touched on. The Cattleya-houses were full of flowering plants, beautifully clean and healthy. Dendrobes were making strong growths. The cool Orchids were equally fine, and for quantity of bloom Mr. Cypher may term his the West of England Orchid Exhibition. The Lælias were very fine, and a large number of the plants consists of specially good species and varieties. The same remarks apply to Cattleyas; Mr. John Cypher, who manages this department, having some beautiful and choice plants in the different houses. *G. W. S.*

PLATYCERIUM GRANDE.

In view of the Fern Conference at Chiswick at which Platyceriums formed a prominent feature, we give an illustration, p. 97, of Platycerium grande as growing naturaly on a tree in the Brisbane Botanic Garden. The Fern in question is a native of North Australia, and its noble aspect and fine proportions may be judged from our illustration. In all the Platyceriums the fronds are of two kinds—the barren ones, more or less orbicular, and with relatively shallow lobes; the fertile fronds projecting from the flat barren fronds and deeply divided, almost like the thallus of a Seaweed. The barren frond has a curious resemblance to the prothallus, which results from the germination of the spore. They do well grown like an Orchid on a block or board, with peat and sphagnum, and suspended from the roof. The moist heat of the stove is requisite for all the species.

Mr. Soutter, who kindly sent us the photograph from whence our illustration was taken, tells us that the plant represented is growing on the trunk of Erythrina americana. The central plant measures from the top of the sterile frond to the tops of the fertile ones, 9 feet; across the top, 7 feet 3 inches. Mr. Soutter has observed the fronds crisp with frost. A thermometer laid on the surface of the fronds registered 5° of frost for seven consecutive mornings, and this in Queensland!

BRITISH FERN CULTURE.

On July 22 and 23 a Fern Conference and Exhibition was held at Chiswick under the auspices of the Royal Horticultural Society, and not only were the many beautiful varieties of our common British Ferns well represented, but some interesting papers were read bearing specially upon this branch of native botany.

The collection at Kew, which was formerly of the most meagre description, has of late years been so augmented by contribution, in the first place by Colonel C. M. Jones and his friends, and eventually by the bequest of Mr. Carbonell's splendid collection, that it has for some time afforded the public a good opportunity for judging the value of these varieties, not merely as botanical curiosities, but as plants which, from their great diversity of size, habit, and delicacy of detail, are fully qualified to take first rank among decorative foliage plants. The extraordinary faculty of "sporting" possessed by our comparatively few native species, some forty odd in all, is by no means confined to the minuter details of the fronds or to that tasselling or cresting which characterises so many of the "finds," but also extends to both increase and decrease of stature. Hence, not only have we huge growing forms, such as Lastrea pseudomas cristata, or the king of the male Ferns, which, as shown as Chiswick, is capable of being grown into a veritable Tree Fern, with a trunk a foot or two high and fronds 4 feet or more long, the plumose Lady Ferns, Axminster, Horsfall, and a host of Shield Ferns (Polystichum), which are capable of competing and holding their own with the best of the far more expensive and tender exotics; but, on the other hand there is a good number of extremely beautiful dwarfed and congested forms, exactly fitted for culture where space is too limited for a general collection. No greater contrast, for instance, in one species can be imagined than exists between a full grown shoulder-high plant of the Axminster Lady Fern aforesaid, with broad lace-like feathery fronds nearly 2 feet across, and Edwards' Lady Fern (A. f. f. Edwardsii), a dense little mass of beautiful crispy pointed fronds 4 or 5 inches high at its best. In the Shield Ferns (Polystichum) and Buckler Ferns (Lastreas) we have contrasts as wide. In the last-named family especially there is a group of dwarf varieties, aping their larger brethren in all other points of variation, such as cresting, &c., and forming, as it were, miniature editions to such restricted room.

The king of the male Ferns just alluded to has its counterfoil in L. pseudo-mas crispa cristata, some 6 or 8 inches high only. In addition, however, to the advantage and variety afforded by this differentiation in size, we have in our native Ferns the further recommendation that they are, with two unimportant exceptions, perfectly hardy as regards frosts, on which account they are amenable to the simplest and more inexpensive culture, and that furthermore, by their capacity for thriving in shady positions, they are admirably adapted for use in towns where flowers would simply drag on a miserable existence owing to deficient sunshine.

We see some scanty recognition of this latter fact in many an area and secluded nook, here, there, and yonder in our town travelling; but those who have made not only the acquaintance of the innumerable beautiful varieties we have mentioned, but of the normal British forms generally, are inevitably struck at the same time by the non-utilisation of most of the latter and all of the former, some five or six species only being repeated *ad nauseam*, and all the rest ignored. Even in the gardens, where the trouble has been taken in congenial shady corners to form more or less unnatural imitations of rockwork, we find nothing but these same hackneyed forms, the common male Fern, the Lady Fern, the Broad Buckler Fern, the Hart's-tongue, and the Half-Shield Fern being almost invariably the sole representatives. This remark applies perhaps with greater force to the southern counties, as in some of the northern towns we have noticed the presence of numerous old varieties in the country gardens.

Open-air Culture.

As their natural hardiness qualifies them for open-air treatment, while the delicate beauty of many of the finer forms entitles them to figure under glass, either in frames or in posts of honour in shady conservatories, we will consider their culture under both conditions. In selecting positions for them out-of-doors, we must first of all consider in what situations they are found wild, and in what soil. In their most congenial habitats we find them growing usually in rough broken undulating ground, and not only protected from the blazing heat of the noonday sun by their position and the foliage of adjacent trees, but the winds are also tempered to them by the same medium. The *beau ideal* of an outdoor fernery therefore is a rocky glen, not too thickly overshadowed with surrounding timber. We also gather from observation in such sites that plenty of leaf-mould

is associated with an open and well-drained stony or sandy soil. If again we study the climate we shall find that the rainfall is pretty plenteous, and that owing to this and the shelter, the roots have always a good share of congenial moisture. Four things are therefore to be aimed at, and the nearer we arrive at their acquisition and maintenance, the nearer to perfection our plants will grow. These are:—1, Shelter from hot sunshine; 2, Protection from blustering breezes which rub the tender young fronds together and destroy their delicacy; 3, Plenty of moisture in air and soil; and 4, An open leafy compost for the roots to revel in.

To those blessed with an ample purse and a large estate, a cosy woodland nook may probably be available, affording a ready-made home for a good collection of forms, but to the possessors of suburban gardens, a sloping border under a north wall, or possibly, the dwelling-house itself, may be utilised to advantage, while the rocky slope of the glen may be imitated by the insertion of rough brick burrs into the soil, care being taken that sufficient space be left between them to accommodate the crowns of the plants. The soil should be an admixture of turfy loam, leaf-mould, and sand, forming an open friable compost. The use of burrs or rough porous freestone, besides diversifying the surface, has the advantage of retaining the moisture in the soil by preventing undue evaporation. A flat bed is also apt to get hard and caked, and as Ferns during the growing season are constantly sending new roots into the soil which ramify in all directions, it is not beneficial to have to remedy this tendency by hoeing or otherwise disturbing the surface. Shade, shelter, and soil being thus provided for, we have to consider the question of judicious watering. Quite apart from the fact that many of the heavily-tasselled forms are apt to be broken down by overhead watering, it is advisable to refrain from this altogether, and to apply the needful water to the roots only. The water supplied artificially is often hard, and tends to discolour the fronds by incrustation, which the clear rain-water of a natural shower does not do. In rainy weather, too, the air is heavily charged with moisture, so that a too rapid evaporation is not to be feared, as often happens on dry summer evenings when the hose is temptingly handy; the rain falls, too, at the same temperature as the plant itself, while water artificially supplied from the mains, may be much colder; all of which possibilities involve unnatural conditions, often leading to discoloured fronds and loss of beauty.

Some of the Ferns of hard texture, such as the male Ferns and their varieties, do perfectly well even in the open garden, exposed to both sun and wind, provided they are looked after until well established; it helps them considerably if their crowns be planted under the northern side of a good-sized burr, so that the sun does not get at the crown. In such a position, too, the Parsly Fern (Allosorus crispus) will thrive amazingly, provided that, when planted, a good double handful of pebbles be laid over the crown, through which the fronds have to push. Most of the dense growing Shield Ferns and Lady Ferns, in fact any which by their stiffer structure, can stand the wind, will make decent specimens under such conditions, though naturally they lose a little in delicacy of texture.

The various species of small growing Ferns, such as the Spleenwort (Asplenia), Ceterach, Polypodies, will have to be furnished with lodgings in chinks and crevices of more or less perpendicular rockwork. It is advisable to start with strong clumps provided with plenty of roots, and as it were build them into the chinks as the rockwork is made, taking always especial care that the soil be firmly rammed in, so that, when eventually watered and settled down, the plants are not left hanging high and dry. The proper way to avoid this is to make the bank first, and insert the burrs or rocks into it, so that, whatever settlement takes place is shared by the latter

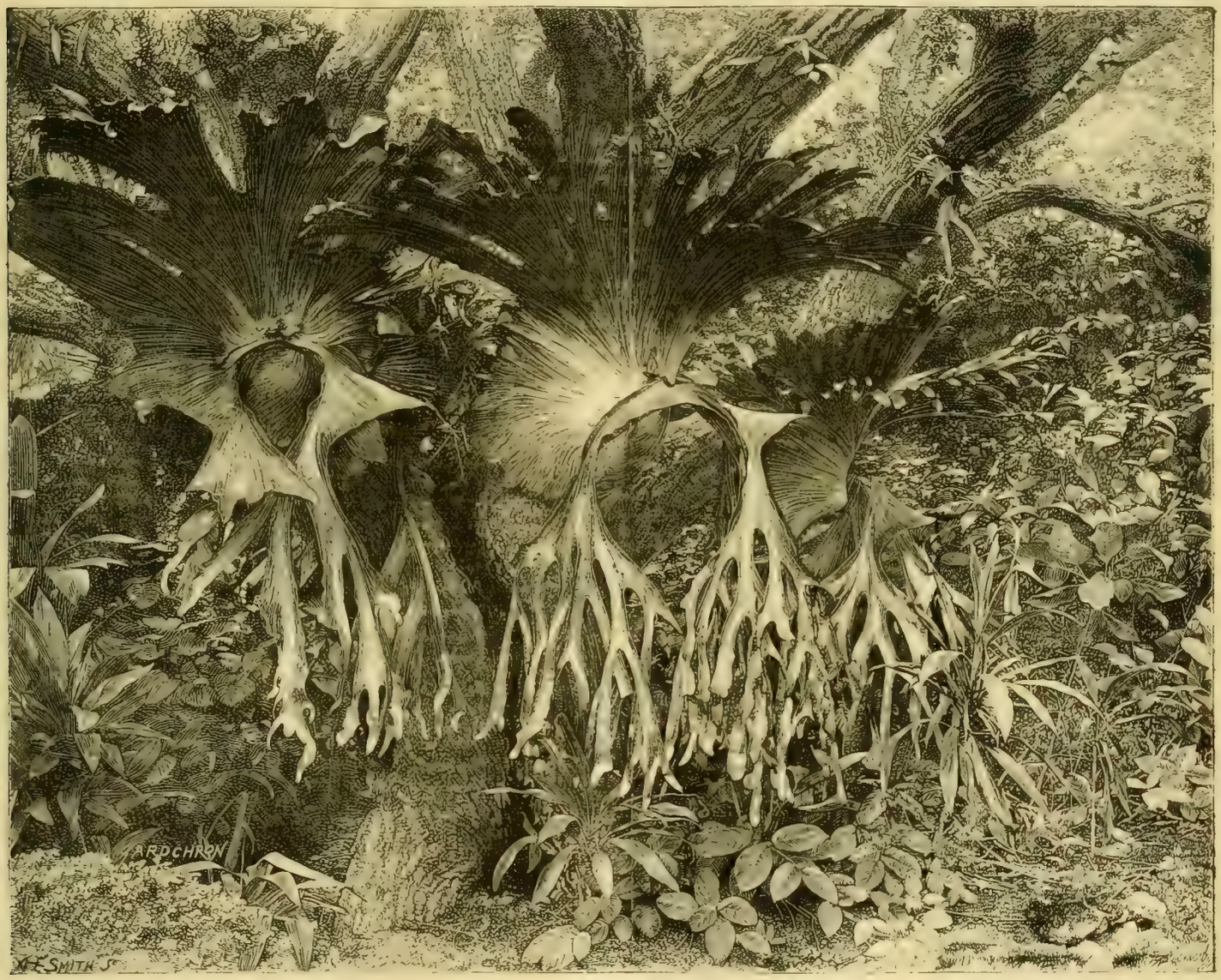


Fig. 16.—Platycerium grande. (see p. 96.)

while if the earth be filled in as the work proceeds, it is very apt to settle independently with the result aforesaid.

Culture under Glass.

To cultivation under glass, most of the above remarks apply, but overhead watering is still more carefully to be avoided. The greatest enemies to British Ferns are excessive heat in summer and artificial warmth in winter. To avoid the former, the glass-houses, or frames, should be located in the shadiest possible position, and if any portion be unavoidably exposed to the noonday or afternoon sun, a shifting blind of scrim or tiffany must be provided. Bar sunshine, the fernery cannot be too well lighted, overshading is a great mistake and leads to weakly growth and loss of health generally; hence we advise a shifting blind rather than any permanent obscuration. In winter the use of artificial heat tends to keep the plants from thoroughly resting, and also stimulates a much earlier growth than is good for them, the inevitable result of which is a weakened constitution, which lays them open to attacks of all sorts of vermin, such as thrips, green-fly, *et hoc genus omne*, which speedily destroy their beauty, and eventually the plants themselves. In a perfectly cold house they are quite safe, since being perfectly hardy out-of-doors, it is clear they can stand all the frost they are likely to have to endure under the shelter of glass, which, by preventing radiation, moderates considerably the rigour of the severest spell of cold weather. Incidentally we may mention, that should any of the insect pests in question make their appearance, which is not unlikely, we have found nothing so effectual for their thorough eradication as the Lethorion cones, the fumes from which we find are quite harmless to the most delicate new growth, to which tobacco smoke is often detrimental.

Arranging Ferns.

In arranging the Ferns with an eye to effect in winter, their deciduous or evergreen character should be borne in mind. The deciduous species, viz., the LadyFerns (LastreaAthyrium Filix-fœmina), the soft Male Fern (L. Filix-mas), the Broad Buckler Fern (L. dilatata), the Royal Fern (Osmunda regalis), and their varieties, together with the smaller growing families of the Bladder Ferns (Cystopteris), the Oak and Beech Ferns (Polypodium dryopteris and phegopteris), all absolutely disappear in the autumn; while the Shield Fern (Polystichum), the Hard Male Fern (L. pseudo-mas), the Hart's-tongue (Scolopendrium vulgare), the Hard Fern (Blechnum spicant), the common Polypody (P. vulgare), and all the Spleenworts (Asplenia) are thoroughly evergreen, retaining, under protection from rough weather, their fronds quite green and fresh until the new ones are well up the following spring. Hence it is obvious, that for winter decoration we are entirely dependent upon these; but as they have afforded us such a veritable host of fine forms, that the Shield Ferns alone constitute a large collection, we need not fear a paucity of material. Bearing, then, this essential difference in mind, it is well, if the Ferns be planted in the soil, to arrange the evergreens with an eye to the winter, and insert the deciduous ones among them for summer effect only. This drawback of winter invisibility is largely counterbalanced by the rapidity and freshness of the new growth in the spring, when the fronds shoot up like fountains of verdure, and in a week or two transform the aspect of the place long before their slower brethren have donned their new raiment. The absence of the old fronds is also an advantage, since, in the case of the evergreens, it is not advisable to remove these until the new growth has well advanced, because if taken off when green and sappy, it is apt to check development. It is for reasons involved in the preceding remarks, that we advise the installation of the Ferns in pots, instead of directly into the soil; the pots can be sunk in the rockwork, and masked in many ways to avoid artificiality of look, and they permit rearrangement from time to time, as growth or a desire for change may render needful without disturbance of the roots.

In arranging a fernery under glass, it is advisable to have as little side light as possible, since the fronds will inevitably arrange themselves so as to catch as much light as they can; and hence with side windows they are apt to show their best aspects in the wrong direction; with a top light this is obviated.

The wall should be of red brick rather than ordinary ones, as the colour harmonises capitally with the varied greens of the plants; this is not, however, a matter of great importance, as by means of hanging pots, shelves, troughs, and so on, the walls themselves are capable of accommodating a large number of varieties to great advantage, and are thus hidden from view. Blocks of peat can also be attached by wires, upon which the varieties of Polypodium vulgare will grow freely, as well as seedlings of numerous other species, which will speedily make their appearance if the house be in a healthy condition. Cork has a good effect, and is easily attached by copper wire, and suits to form rustic baskets, pockets, and other receptacles—it has, however, the drawback of harbouring woodlice, which are apt to become a nuisance; red porous hanging pots are probably the most congenial receptacles. In placing shelves, &c., they should be slightly inclined towards the wall, so that surplus water runs down it instead of falling upon the plants below. The long narrow slates used for roof ridges make capital shelves. The paths should be of thick red porous tiles; glazed ones may look prettier, but it is to the Ferns we should look for ornament, and not elsewhere; they also retain the water on their surface too long for comfort, while porous tiles speedily absorb it.

Ferns in Winter.

During the winter period of rest, we must again look to Nature for a lesson. There being no apparent growth, many people imagine that the plants are like bulbs, and can be allowed to go dust-dry with impunity; but if we seek a Ferny spot—in congenial Devon, for instance—we shall find the crowns absolutely soaking all through the winter, probably with a liberal mulching of fallen leaves serving as additional protection from drought. Under glass the leaves are needless, but it is immensely beneficial to pour a little water frequently over the crowns, which, though apparently dormant, are really building up their future fronds in embryo, and indeed in the early months of the year, long before the rising period arrives, the centre of the crowns will be seen to be fattening up as it were, in preparation.

In pot culture good drainage must be attended to, sourness or stagnancy being as much to be guarded against with Ferns as with flowering plants, and even more so when we consider the damper and shadier conditions under which they are grown. In building up rockwork, under glass, the foundation must also be open and free, or the superincumbent soil will turn sour.

Propagation.

Having now touched upon the salient points for guidance as to planting and maintenance in healthy condition, we must say a word or two regarding their propagation. The faculty for reproduction in Ferns is truly astonishing, the little brown patches, dots, and lines of the spore-heaps, by the shape and character of which the species is mainly determined, consists of millions of microscopic bodies, each capable of producing, not merely one, but in some cases, numerous plants. Without going into the minutæ of these phenomena, which forms one of the most interesting phases of study, we will merely give plain, rational directions how to sow these spores, and leave our readers to pursue the matter into its technical depths if they think fit. Each Fern producing its millions of spores, it is clear that the vast majority perish, owing doubtless to their minute size and liability to destruction in the earlier stages of development by the least disturbance. Doubtless, too, they mainly form the food of a microscopic menagerie, while others fall as it were by the wayside, and perish through drought and uncongenial surroundings. To give them a fair chance then against insect marauders, and adversity generally, prepare an open compost of loam, leaf mould rubbed fine, and silver sand, in the proportion of, say two, two, and one, fill a well-drained shallow pan with this, press it down firmly, and scatter a few nodules of loam above the surface; next lay a small piece of paper on the soil to prevent washing up, and pour upon this a whole kettleful of boiling water until the outside of the pan burns your fingers; set it aside, and let it cool. Menagerie, fungus spores, and all foes of the germinating spores are now obviously defunct, and a fair field exists for development. Next, take a ripe frond and lay it on a sheet of white glazed paper for a few hours in a dry room, the spores will be shed, and form a brown stain; tap the paper gently over your pan, and the crop is sown; put a sheet of glass over the pan and set it in a cool damp shady corner. In a fortnight or so in warm weather, a faint green blush as it were will be visible, and in a few weeks more the prothalli or flat green scales produced by the spores will cover the surface. Yet another week or two, and the little Ferns will be springing up literally by thousands. If too thick, they must now be pricked out into other pans, sterilized as above, about an inch apart. After this our general cultural remarks apply, and all that is needed is room, or Fern-loving friends to relieve you of the surplusage.

Adult plants also permit of propagation by offsets, which many of the species and varieties produce freely at the sides. These only require careful amputation, together with a supply of roots, to become good specimens in a short time.

Some varieties, especially of the Shield Fern (P. angulare), produce bulbils on the midribs of the fronds and even of the pinnæ, which, if pegged down on sandy soil, quickly root in, and can eventually be made into separate plants by cutting the attaching midribs. Some of the frilled Hart's-tongue (S. v. crispum) produce occasionally bulbils on their stalks, which are open to like treatment.

It will be gathered from the preceding observations that British Fern culture is suited for all classes; the wealthy can decorate their estates and conservatories with countless lovely forms in full development, while the smallest cottage has accommodation for a pet collection of dwarfs; and, in point of fact, it is an open question whether the cottager would not reap the greater pleasure, derived from that greater concentration of attention which alone enables us to enjoy and appreciate Nature's wonders to the full. *Chas. T. Druery.*

Orchid Notes and Gleanings.

Phalænopsis intermedia.

Amongst showy Orchids in flower just now at Clare Lawn, East Sheen, is a plant of Phalænopsis intermedia, which has three healthy leaves, 10 inches long, and 3 inches wide, and has a scape 2 feet long carrying twelve handsome flowers. These are medium-sized, about 3 inches in diameter, the sepals oblong-acute, the petals broader, lozenge-shaped, pure white, with a few minute rosy speckles at the base, and the lip tri-lobed; the lateral lobes erect, wedge-shaped, with blunt angles; colour, violet with a few crimson spots; the middle lobe ovate, crimson-coloured, with the point separated into two short horn-like processes. This rare and pretty species is supposed to be a natural hybrid between P. amabilis and P. rosea. *W. H. Y.*

Cattleya Warscewiczii.

A noble example of this beautiful form of the C. labiata section, generally known in gardens as C. gigas, is in flower at the Royal Exotic Nursery of Messrs. Jas. Veitch & Son, at Chelsea. It is grown in a basket, and has two spikes, the one bearing six, and the other three, of its large and finely-formed flowers. The labellum of this form is the largest of

any Cattleya, and is of the richest glowing velvety-crimson in the case of this one.

Saccolabium cœleste.

Although several importations of this pretty Orchid have been got over in good condition, it is not common. A beautiful variety of it, bearing three spikes of clear blue flowers, is to be seen at Messrs. Jas. Veitch & Son's nursery, and the plant, as regards its size, is one of the best examples which has flowered here. *J. O'B.*

Roses.

THE ROSE IN POTS.

I have often penned instructions for growing Roses intended for forcing or growing under glass to bloom before out-of-door Roses come in. Some may say the present is not the time to write or talk about these Roses, when we can purchase a handful of beautiful Roses from the open air for a penny, and every garden worthy of the name is full of them. Just so; and because of the present abundance, there is some danger of neglecting our plants, which should give us Roses when snow is on the ground, and when frosty winds do blow. No good flowers or fruits will reward our labours unless the plants that will bear them are well grown, and the bearing wood is perfectly ripened the year before. So much value is placed on the perfect ripening of the young shoots of the Rose, that one of the best growers assured me that he would not place his Tea-scented Roses outside, the wood ripening so much better under the protection of a light airy glass house. The leading growers of Roses in pots in the neighbourhood of London afford us better examples of Rose culture than amateurs ever have done. And why? It is because they are alive to the fact that careful culture must be carried out at all seasons of the year, even in winter, when the Rose is resting, for this so-called rest is merely the last act preparatory to the breaking out of the buds into leaf; and how can these buds break strongly if the roots have been allowed to shrink in size and substance, owing to lack of moisture in the soil. As a matter of fact, the Rose is never in a state of complete inactivity in winter, if the temperature of the air and soil is a few degrees above the 32° Fahr., unless, indeed, the plants have been starved into inactivity by being kept dust-dry at the roots. A practical gardener once told me that he could rest any plant in a high temperature as well as in a low one, all that was necessary for the purpose being to allow them to get into a state of perfect dryness at the roots; that is as much as to say, the Pine-apple and the Rose may be treated alike.

I have no hesitation in saying that it would be a grave error in culture to act on this assumption. Roses in pots do not require much water in winter but the soil should always be in a moderately moist state, and the house they are placed in should be cool and airy, and I know that the plants will pass through what we term a resting period in warmer climates than ours. Some eight years ago, Dr. Bennett gave an interesting account of his Rose garden in the Riviera. The Roses out-of-doors there blossom abundantly in April and May, but in May the dry hot weather sets in, and scarcely any rain falls until September. The Roses lose their leaves, and are pruned early in September, and after the autumn rains set in another season of bloom commences in October and November. Here we have special conditions of climate, and there must be special culture to suit the climate; and it is necessary that such treatment should be pursued there, as the Roses lose their foliage in the summer, the Tea-scented varieties retaining them better than the hybrid perpetuals. It may be possible to imitate in our greenhouses, to a certain extent, the conditions which exist on the northern shores of the Mediterranean, especially if it be very desirable to have Roses of good quality in October and perhaps in November.

Let the Roses flower by gently forcing them in April and May, a time at which they flower naturally in the Riviera, and after the flowering period is over, keep the plants in a glasshouse, where the ventilators are freely open night and day; do not starve them by withholding water altogether. The circumstances here are quite different, for if a Rose tree, or any other tree or plant, finds the moisture evaporating, and leaving its roots in a dry state, they not only extend far and wide, but deep down into the earth for the moisture they cannot obtain near the base. If the roots are confined to a pot they can only ramble round and round the outside of the ball of compost, and if dryness is persisted in, the soil shrinks from the sides of the pot, leaving them so much exposed to drying influences that most of the more useful ones die, with the results of weak growth and starved-looking blossoms.

After the summer season has passed, the shoots may be cut back, and water freely applied. There is no need to remove the flower-buds during the summer until they are ready to cut for decorative purposes. It really seems a pity to thin out the side-buds of Roses, as is sometimes done by exhibitors and others. On this point Dr. Bennett remarks, "A feature in the Rose garden in spring is the amazing amount of blossom each Rose tree bears. It is so great that one would think that it would exhaust the plant; but it is not so, the Roses being all the better for flowering thus freely, provided they are made to rest afterwards, during the heat of summer, by withholding water."

When I began this paper, it was merely with the intention of warning gardeners and amateurs against neglecting Rose trees in pots at this season of the year. There is great danger of this, for I sometimes fail to do full justice to my own, and am obliged to place them out-of-doors as soon as the weather is warm enough. As a rule, my Roses are repotted in August. This may not be the best time of the year to do it, but it answers, and there is ample time for the roots to freely permeate the new soil; the only evil that I dread is heavy drenching rains immediately afterwards. It is well known that the Rose loves a deep, rich, clayey loam; but such a soil in a pot must be kept in a porous state, and only the top spit of an old pasture should be employed. Such a soil is not only full of the fibrous roots of grasses and other plants, but the grass itself decays when the turf is thrown into a heap for a time, so that we have a fertile open material in itself, but add to it one-fourth part decayed stable manure, a fourth part of leaf-mould (and if for Tea Roses, fibrous brown peat would do as well or better), and an 8-inch pot full of half-inch bones to each barrow-load of the compound, and we have a soil in which any kind of Roses will grow freely, and flower well the following season. The plants should be taken under glass as soon as it may be convenient in the autumn, as heavy rains will cause water-logging. *J. Douglas, Ilford, Essex.*

Plants and Their Culture.

Cyclamens.—The seed of Cyclamen ripens at this date, and should be sown as soon as it is gathered, using for the purpose small pots, and sowing half-a-dozen seeds round the sides of the pot; by so doing a ball of earth may be lifted with each seedling when large enough for potting off; and it is far better than thick sowing in pans or pots. Put the pots into a close frame, on a hard bottom, and gently dew over the pots twice a day. The plants of last year which should have been kept cool, and will now be well ripened, sufficient water having been afforded them to keep the foliage from drying up. These plants will soon recommence to grow again, and should be shaken out and repotted in the same sized pot, using a good proportion of fibrous yellow loam that has been stacked for some time, some dried cow-manure, and a small quantity of leaf-mould and coarse silver-sand; and keep them close for a few days afterwards to set up root action. When plenty of roots have been made, repot them, and, later, manure-water may be afforded them. Keep the plants near to the light in a temperature of 50° to 60°, and keep them free from aphis.

Double Primulas.—These useful plants associate well with the Cyclamens, and the old double white variety is still the best if cut flowers chiefly, are wanted in winter. I strong plants were secured for this purpose, and these were divided, as previously advised, after drying them off, they will now be ready for shifting into 48's. This is a useful size of pot for the winter plants, as they will then take plenty of feeding without danger and bloom more freely than in larger pots, and they are not so likely to damp off at the collar as are those. A few of the old plants may be shifted on, but these are not thy so trustworthy as the younger plants. A cold frame on a cool bottom suits them at this date, removing them to a dry house at the end of September. Damp is the greatest enemy these plants have, therefore, early in the autumn, take more care in the watering of them, keeping the foliage dry. A little extra warmth with a fair amount of air is the best precaution against damp.

Zonal Pelargoniums, if late struck, may now be shifted on; but to bloom well in the early winter months, the plants should have been struck very early in the spring, and have made good growth close to the glass in a cold frame, without shade, and with plenty of air. Grow a few that are good rather than a large number of varieties, and select such as bloom well at that season. Give a good compost, plenty of water and liquid-manure when the pots are full of roots, and stop the shoots once or twice to make them break, removing all the blossoms as fast as they appear, and get the wood ripened. Potting should not be long delayed, and 6-inch pots are large enough for winter flowering. If space cannot be given the plants in a cold frame, a sunny spot should be given them outside, standing the pots on tiles, or on coal ashes. Old cut-down plants should be partially shaken out when they have made a new break, and repotted, a few half-inch bones being used for drainage. I have found fish-manure to be very good for zonals, using it with the compost at the last shift. *G. Wythes, Sion House, Brentford.*

The Flower Garden.

Plants in Beds.—The recent rainy and sunless weather has conduced to excessive leaf-growth and want of colour in those plants with variegated or otherwise coloured foliage. Flower gardens overlying a dry subsoil are, in seasons like the present one, usually in perfection; but in heavy land the plants are usually as I have stated. It will have been found very necessary for the preservation of the outlines of designs in carpet beds, and uniformity in flower beds, to pinch in and train strictly twice a week; in fact, where there are many beds, these operations go on constantly, and can never be said to be finished. Among bedding plants, the newer forms of tuberous Begonias are effective in masses, and a wet season does not spoil them. Where gracefulness is preferred to masses of colour, the older forms, which are tall, and have flowers that droop like a Fuchsia, and flower as abundantly, are fine plants for small beds in the warmest situations, no amount of sun spoiling their beauty. In tuberous varieties, the pinks, crimsons, and scarlets, show up well. Pelargonium beds are filling up rapidly, and no more flower-buds should be taken off the plants; in fact, where there is a tendency to over-luxuriance, it would be better to leave them, thus materially helping to check the growth of leaf and shoot. Calceolarias are not hurt by a moist season, and they are doing well with us.

Spring Bedding Plants.—It is now the time to take steps to propagate by seed or otherwise the plants wanted next spring. All those perennial kinds which were hastily heeled in when the beds were cleared for their summer occupants should be taken up and divided, and planted in beds on a west or north border preferably. These include Daisies, Saxifrages, Primulas, Polyanthuses, Aubrietias, Iberis, Alyssum, Arabis, &c. Seedlings of Wallflowers, Sweet Williams, Silene, Honesty, Saponaria, Pansies, and Myosotis, should be pricked off at about 6 inches apart for the weaker, and 8 to 10 inches for the stronger growers. Cuttings of double Wallflowers may be inserted in sandy soil beneath a handlight on a shady border, where they will soon take root. Seed of East Lothian and Brompton Stocks should be sown.

Roses.—Remove the suckers from the stocks as fast as they appear, and continue to shorten back all shoots which have borne flowers. Buds early inserted should have the ties removed after the union is complete, and briars should still be budded in fine dry weather, when the sun is not shining strongly. *D. C. Powell, Powderham Castle, Devon.*

The Orchid Houses.

The East India-house.—Vanda Hookeriana is now the brightest object in flower here. I said in a previous Calendar, that I thought the keeping of these plants in strong heat, and giving them all the sunlight possible, was very beneficial; and as an instance of that being so, I may mention that I have nearly one hundred of these plants, eighty-five of which are flowering, and in some cases the spikes have three flowers each, but mostly only two. The cold weather still continuing, the advice which I offered in my last calendar should be strictly observed—chills given to Orchids in growth being very injurious. The opportunity should be taken, now that little may be done in the way of repotting, to thoroughly examine the different houses, taking down the plants, washing and cleaning the pots and plants, and rearranging them; and if the new arrangement of the plants is different to what it has been, it will give additional charms to the houses, and permit the grower an opportunity of making an examination into the state of his plants generally.

The Phalænopsis are not growing here as fast as they were three weeks ago—a state of things brought about by want of sun-heat.

Phaius tuberculosus should be examined daily. The fact that others of the same character, namely P. Humblotti and P. Henryii, have been introduced and bloomed in quantity, does not lead me to discard P. tuberculosus. Attend to the proper ventilation of the houses, much fire-heat being necessary this season to keep up the temperature, otherwise thrips may gain a foothold. *A. G. Catt, Parkfield Gardens, Hallow.*

The Hardy Fruit Garden.

Peach and Nectarine Trees.—In order that the fruit may finish up well, the lateral growths should be pinched out every week, and the fruits exposed to the sun as much as possible by tying the foliage back, or cutting some of the leaves in half, but not pulling them off. Some Peaches have tender skins, and should not be exposed to the sun too much, as they become disfigured by a kind of scorching in hot weather, and suffer also from heavy rains when ripening. The final thinning of the fruit should not be longer delayed, and this operation should be done accordingly as the the tree is strong, or the reverse, consideration being given also to the use the fruits will be put to. Those intended for preserving being less thinned than dessert fruits.

When the fruits commence to swell for the second time, liquid manure should be afforded the roots to increase their size, and improve the quality. Trees are rushing into growth more than usual, and will require much attention during the remainder of the season. A repetition of the season of 1887 is what we now require. Thin out the shoots, laying in those that will be required to bear fruit next year.

Many root-pruned trees and even some which were lifted are producing strong shoots, which it will be proper to shorten back to a lateral near the base of the shoot. Syringe the trees with the garden engine or hose as often as time can be afforded for the operation, and water any portion of the border the soil of which is likely to be dry.

Strawberries.—Plantations of these fruits intended to be kept for another year should have all the runners and the leaves most injured cut off of the plants, and weeds cleared away, the ground being afterwards pointed over and mulched with manure. New plantations may yet be made with plants that have been forced, but it will be still better to plant with strong runners if these can be secured, that is if the forced plants did not bear well in the forcing-house. Runners should be layered forthwith in 60's, for planting out as soon as they are well rooted.

The pruning of pyramids, espaliers, cordons, &c., should now be finished, and where it can be done, each tree should be thoroughly hosed after pruning is performed.

There prevails an idea that Apples on the Paradise and Pears on the Quince must be incessantly pinched, never allowing any shoots to grow beyond three or four leaves. Apple trees on the Paradise generally throw out one or two strong shoots, which, if left alone, soon upset the balance of growth, and in such case pinching the shoot at the sixth leaf will cause a more general diffusion of growth. The progress of trees on dwarfing stocks is slow, perhaps not more than one foot in a year; but the roots are extending around in all directions, and the stem is increasing in thickness. Old trees lacking in vigour should have soil and dung mulchings applied for a good distance around them, which will in time cover the union of scion and stock, and roots will push into the fresh materials, giving new life to the trees. *A. Evans, Lythe Hill, Haslemere.*

Fruits Under Glass.

Bananas.—In continuation of my remarks on setting these fruits in my last Calendar, if a gradual withholding of water at the root, and a reduction of temperature, be adopted for the next two or three weeks, an increase of heat and moisture at the end of that period will almost invariably cause them to show their flower-scapes. It may here be stated that the largest bunches and the finest fruits are obtained from plants growing in properly prepared borders.

The Orangery.—Oranges, whether grown for ornament or for use, should have their foliage kept clean, and growth encouraged with weak manure-water. Unhealthy plants may now be re-potted, and the old impoverished soil washed out of the roots with a syringe. Sandy loam with burnt



Fig. 17.—the filmy ferns.

1, Trichomanes reniforme; 2, T. tenerum; 3, T. membranaceum; 4, T. cuspidatum; 5, Hymenophyllum asplenioides; 6, H. sinuosum; A, Involucre of Trichomanes, cut down to show the spore-cases in the interior; B, Two-valved involucre of Hymenophyllum; C, Spore-case with horizontal ring.

earth, and a little charcoal and leaf-mould, will produce healthy growth, and keep sweet for two years. If gentle bottom heat, with a slight shade, can be afforded them, quick rooting and healthy foliage will follow. Old plants in tubs are greatly benefited by an occasional dose of diluted liquid manure. The Tangierine variety is a favourite with many persons for dessert, and it is of good flavour when the trees grow in a house with a buoyant atmosphere. Shaddocks and Citrons are useful for marmalade-making, as well as for their deliciously-scented flowers.

Orchard-houses.—Mildew is apt to blight Peaches and Nectarines, especially if the air be kept stagnant by want of ventilation, or if it be draughty. If mildew is noticed on the foliage, dust flowers-of-sulphur thickly on both sides of the leaves, at intervals of two days, until it disappears. The heating apparatus may be used on cloudy, damp days, so that better ventilation may be afforded the plants. Afford manure-water to pot-bound trees; remove small useless shoots from trees whose fruits are gathered, thinning out the shoots which have borne them. Keep down red-spider by the frequent use of the garden-engine. If any of the Green Gage or other early varieties of the Plum are grown in pots, remove them to the open air as soon as the fruits are gathered, to ripen their wood. Pears and Apples may remain in the house to perfect their fruits, giving them plenty of ventilation by night and day.

Melons.—The last sowing for this season should be made forthwith, and, as this fruit is most liked in warm weather, it is late enough in a general way, although some gardeners grow them for the purpose of giving variety to the dessert in the shooting season; in fact, when they are grown in a buoyant temperature of 70° at night and 10° more by day, the flavour is usually fair; less atmospheric moisture must be given as the sunshine decreases. Plants of Melon Blenheim Orange, if planted out and afforded good treatment, will ripen their fruits in October and November. A point in favour of the above variety is that it may be kept for a fortnight or even longer in good condition after being cut. Only those having properly constructed houses should attempt the cultivation of late Melons; taking care to build up stocky plants, and to secure a steady bottom-heat of 70° to 80° from start to finish; to keep the plants clear of insects, and if red-spider should appear, syringe the affected leaves only with soapy water, and green or black-fly must be got rid of with tobacco-powder—not fumigation, as that is dangerous. In practice it is not found easy to get young men in charge, to fully understand the danger arising from fumigation with the so-called tobacco-papers, and the necessity that there is of being on the alert with the tobacco-dredger.

The laterals must be trained thinly, and, where these are too close together, they should be early removed to allow of the permanent leaves developing. Three fruits to one plant are a heavy enough crop in late autumn. Syringe the plants on warm afternoons, closing the houses for a few hours, but the foliage must be dried before nightfall. Beware of a stagnant atmosphere by night or day. Artificial warmth is needful, to prevent low temperatures being reached when ventilating.

Pines.—Ripe fruit of Queens, Charlotte Rothschilds, Carringtons, and other summer-fruiting kinds, will probably be abundant, and it may be necessary to retard some by removing the plants having fruits beginning to colour to a vinery, or a cool fruit room, where they will keep in good condition for three weeks, according to the stage of ripeness when removed. Water should be entirely withheld. A re-arrangement of the plants in the fruiting-house will be necessary, the bulk of the old stools being removed to the propagating pit, and their places refilled with strong Cayennes and Jamaicas for winter fruiting, that is, such as have shown fruit, or are soon expected to do so. The turning of the tan beds, which should be just deep enough to plunge the pots, will cause a gentle fermentation—of 80° to 90°, sufficient to facilitate the "showing" of fruit, and this warmth may afterwards be regulated by means of the bottom-heat pipes. By such means, those plants that have solidified their growth and been subjected to a partial rest, as advised in my last calendar, will readily respond, by putting up their fruit on stout stalks.

Successional plants should not be given a too high temperature, as this, if combined with insufficient water at the root may lead to premature starting; but endeavour to keep them steadily growing, so as to enable them to make broad, dark green leaves, of leathery texture; and liberally encourage them with manure-water, moderate atmospheric moisture, and efficient ventilation. Any large suckers, brown and ripe at the base, may be taken off at once and potted firmly in a gritty, loamy compost, using 7-inch pots for them, putting dates on the labels, and plunging the pots all together in a genial bottom-heat. In four to six weeks, these suckers will require a shift into 10 or 12-inch pots. A little shade may be required on very bright days, but shading generally may be considered only a necessary evil. Give but little water to the soil till rooting is well developed, but rather more atmospheric moisture. Reserve large, stout suckers for the general potting next month—the best month for an overhaul of the pinery; meanwhile, prepare fresh tan, potting composts, crushed bones, and clean pots, so as to expedite the potting operations. *W. Crump, Madresfield Court, Malvern.*

The Kitchen Garden.

Tripoli and Other Varieties of Onions.—The ground should now be got in readiness for the main sowing. There should be two or more sowings—the first about the end of the present month, and again in about ten days or a fortnight, according to locality. If the plants are raised too early they are apt to run to seed in the spring, whereas if strong plants are not obtained before cold weather sets in, very little progress will be made till late in the spring, a time when these Onions are mostly wanted. The ground for the crop should be well prepared, and if it be light, should be made firm by treading before raking it and drawing the drills, and when the seed is sown give the surface a good dressing with fresh soot, and rake it in; poor soil is the better for a dressing of manure, but if the land has been well-manured for the previous crops, and deeply dug, very much will not now be needed. Sow the seed thickly in drills, 12 inches apart, the thinnings will be useful for seed purposes, and for transplanting in the spring.

White Naples and Giant Rocca—the latter, one of the best for autumn sowing, should be included among the varieties sown at this season. On heavy lands the seed should be well covered with burnt wood ashes mixed with fine soil, treading as little as possible on the bed, either before or after sowing the seeds. So far, the weather has been all that could be desired for the establishing of all transplanted Broccolis, Cauliflowers, Kales, Sprouts, Celery, &c., and any further planting out should be pushed on. Pricked-off plants should be lifted with a trowel, and planted in drills with the same tool, so as to disturb the roots but little, making the soil about the roots very firm. Ply the hoe in dry weather amongst growing crops, and earth-up Brussels Sprouts, Cauliflowers, and other vegetables, when large enough, and before the leaves get too big, or injury will follow the use of the hoe. Apply soot to Celery if infested with the maggot, first picking up off all leaves that are attacked, and burning them.

Onions will also be benefited by occasional applications of soot. Globe Artichokes should be relieved of all flower-stems when cutting the heads for use; and on poor soils, copious waterings with manure liquid should be afforded the plants. *H. Markham, Mereworth Castle, Maidstone.*

Obituary.

Patrick Barry.—To my mind, June 26, 1890, ends a famous chapter in American horticulture. The grave closed over all that was mortal of Patrick Barry, who, in connection with his partner, George Ellwanger, has for half a century been a central point, around which revolved much that was progressive in American horticulture. A respectful *cortège* of some fifty carriages followed his remains to the cathedral of St. Patrick, which his munificence in great part founded, and a solemn high mass, in which twenty-four priests assisted, was offered in his behalf. The catholic Bishop, McQuade, one of the most eminent pulpit orators, made a funeral address. Officials of the great city he did so much to build up were among the mourners, and brother nurserymen from some hundreds of miles paid their last tribute to his remains. But the most touching scene was when, in passing the public schools along the line of the funeral procession, the children were all drawn up in line in front of the school buildings, until the body had passed by. He was borne to his grave in the Catholic cemetery of the Holy Sepulchre, by eight of his faithful workmen who desired this sad privilege.

I was so glad the cemetery was not one of the usual cold-blooded sort. The Catholic cemeteries of the United States are not generally among the types of beauty—but the diocesan of the district, Bishop McQuade, is in many subjects among the progressive spirits of our country. He employed a famous landscape gardener, F. R. Elliott, to design the grounds, and, beautiful as so many modern cemeteries are, this will take rank among the foremost. The rare and lovely tree, Virgilia lutea (Cladastris tinctoria), will stretch its arms over him, and I was glad to see him reposing in so beautiful a spot.

How can men like these be rewarded, except in the consciousness of the good they do. Here was a lad born on a farm near Belfast, who came to America in 1831, first resigning his position as a country schoolmaster to try his luck among strangers in a foreign land. That luck brought him a clerkship in Princes' Nurseries, at Flushing, and thus he gained a good knowledge of the machinery of a nursery business. Falling in with a thoroughly educated young nurseryman from Germany, in George Ellwanger, they started the nursery business in Rochester just fifty years ago. Like most young men, they found they had much to learn. Many would have been disheartened. They had, however, the good judgment, so rare in many cases, to turn even disaster to profit. This firm was, perhaps, the first to see the enormous capabilities of the fruit tree business, which has since grown to such enormous proportions through the United States. Rochester was then only a small settlement of some 10,000 inhabitants, and I could hardly help wondering how many of the 100,000 or more the beautiful city now contains knew, or cared to know, how much this great prosperity was due to this one man. When the only employment the working man could get would be at most but a dozen or so in any one place, Ellwanger & Barry took to work several hundreds at a time. Their success was so marked, that numbers followed, and Rochester became a city of nurserymen, and from these radiated younger nurserymen, until almost every State and territory had its nursery, most of which got their first inspiration from Rochester experiences.

And the city itself—it was not in him to merely make and hoard the money he earned, but to turn it all to account for the beauty and glory of his adopted town. The only thing I ever knew him decline to do was to be put in nomination as Mayor of this great city, and to which, though the political party with which he was affiliated was largely in the minority, he would have, in all probability, been handsomely elected.

He and his beloved partner, Ellwanger—for they had worked together through life in outside affairs, as well as in the nursery business—had just about completed an enormous building, to be rented out for business offices—108 offices in the one building. Every day he would think that on the morrow he would go and look at the finishing-touches of this magnificent enterprise; but it was left for me, his many-year friend, to examine it for him.

I pen these lines to you because I know how much he prized the English horticultural periodicals—how continuously his thoughts wandered towards the lovers of gardening he had left in the Old World behind him, and I have thought I could do no better service to those whom he loved than to offer this brief sketch of his career as an example for their encouragement. It is given to every man to do something for his life-work. I know of no one who did so much, and did that much so well, as Patrick Barry; and I know that the gardeners of the Old World will share with me the exultation that such a man was one of themselves. *Thomas Meehan, Germantown Nurseries, Philadelphia, U.S.A.*

EDITORIAL NOTICES.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY, July 29—Royal Aquarium (two days).

SATURDAY, Aug. 2—Ripley (Derby). Liverpool Horticultural Association (two days). Southampton (two days).

SALES.

TUESDAY, July 29—Imported and Established Orchids, at Protheroe & Morris' Rooms.

THURSDAY, July 31—Leasehold of Wright's Nursery, Lee, at the Auction Mart, by Protheroe & Morris.

FRIDAY, Aug. 1—Imported and Established Orchids (some from the Blenheim collection), at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°.3.

Carnations, Ferns, and Selaginellas.

There does not seem any close relationship between the first and the two latter classes of plants, but that is not a matter of much consequence at such a flower show as was held at Chiswick on Tuesday and Wednesday last. Those who have little sympathy with the formal outlines and "dressed" appearance of the florist's Carnation, could find a delightful contrast in the astonishing variety in the shapes of the Ferns; and those to whom the monotonous colouring of the Fern was unattractive, could find colour and fragrance in the Carnations. At any rate, a fine display of each was secured in the old gardens, and a fair company was gathered together to see it. As for the Carnations and Picotees, we must refer to our special report. Beautiful as they are, they are too highly specialised to admit of generalisation; their beauty remains, but the interest is dressed out of them. But the Ferns were something extraordinary; the variety and interest they presented were indeed marvellous. Several very fine collections were staged in a long tent, which was entirely filled with them, by Dr. Lowe, Messrs. Veitch, Birkenhead, May, and others. Perhaps the most astonishing of all were the collections of British Ferns, and of the varieties raised from them. To describe them is out of the question; merely to enumerate them would make demands on our space that we could not satisfy. We must content ourselves with noting a few of the more remarkable. Foremost we must mention "Polystichum angulare var. divisilobum, sub-var. plumosum, sub-sub-var. densum." We are not responsible for the name! and we protest against it, but no name, even if it contained a dozen more words than the one quoted could give any idea of the wondrous grace and luxuriant appearance of this Fern. The plumage of an ostrich or a bird-of-paradise is the only thing we can think of at all comparable to the infinitely minute sub-divisions and graceful appearance of this Fern. Then there was a collection of Scolopendriums from Dr. Lowe, which were almost stupefying in their wonderful variety. Looked at purely from the æsthetic side, it is doubtful whether a well-grown plant of the original Hart's-tongue, from which all these wonderful forms have proceeded, is not, after all, the most beautiful; but from the standpoint of interest and curiosity, it is impossible to conceive anything more remarkable. The forms are so extraordinarily diversified and so complicated, that description, without loading our pages with technicalities, is impossible.

Next to the beauty and variety of form, the most interesting point connected with the Fern Exhibition was the number of hybrids shown. Time was when the very idea of hybridism among Ferns was scouted as an impossibility, but here were hybrids between Aspidium aculeatum and A. angulare, between Lomaria gibba and Blechnum brasiliense, between Dicksonia arborescens and D. antarctica, between Alsophila excelsa and Cyathea princeps, and many others. The two last specified were raised by Mr. Latham of the Birmingham Botanic Gardens, and Dicksonia Lathami × exists as a worthy memorial of his skill as a cultivator. Mr. Latham tells us (we may incidentally mention), that in the case of these hybrid Ferns the prothallus resembles that of one or other parent, and it is not till the plant has advanced towards the fully developed state that the hybrid or intermediate characteristics make their first appearance.

Referring to our report for a fuller notice, we must now pass on to the proceedings at the Conference. On the first day, Tuesday, the chair was taken by Martin Smith, Esq., who in his opening address pleaded for Carnations with greater hardihood and staying power. The first paper read was one by F. N. Williams, Esq., on the "Botany of the Carnation," in which he traced the history of the five species of Dianthus generally cultivated, viz.:—D. barbatus, the source whence the Sweet William is derived; D. deltoides, the origin of the red Pinks; D. plumarius, the starting point of the white-fringed Pinks; D. sinensis, the Indian Pink; and D. caryophyllus, the species from which the Clove, the Carnation, and the Picotee are derived. This paper was one of great interest and value as an authentic document, prepared by the botanist best fitted to deal with the subject, and its publication in the *Journal* of the Society, will enhance the value of that publication as a work of reference. Three cultural papers followed, and when we say they were from the pens of Messrs. Harry Turner, Rowan, and Richard Dean, we shall have said enough to assure Carnation growers and amateurs that the subject was thoroughly well treated. Mr. Turner, to the satisfaction of many of the unlearned, described and illustrated by example, the differences between bizarres, whether scarlet, crimson, pink, or purple; flakes of two colours only; Picotees, such as heavy red, light red, heavy purple, light purple, rose and scarlet, light rose and scarlet, and so forth, not forgetting the popular yellow Picotees. These papers will probably all be published in the *Journal* of the Society, so that we will not attempt to forestall that publication.

On the second day of the Conference, Dr. Maxwell Masters presided, in place of Mr. Baker, who, most unfortunately, was prevented by illness from occupying a position for which he is eminently suited. Mr. Baker, however, sent a letter relating to the delimitation, classification, and especially the nomenclature of the minor variations of British Ferns. The nomenclature of Ferns has now become a nuisance of the first magnitude. Mr. Morris, at a later period of the day, appealed to Dr. Lowe to do something to regulate and purify the enormity. The method of dealing with it is quite simple, but after the experience of the Orchid Nomenclature Committee, we have little faith that simplicity of nomenclature will commend itself to those most deeply concerned, and from this we infer that the nuisance cannot, after all, be so burdensome as it looks.

The first paper was one by Professor Bower, of the University of Glasgow, who descanted orally on the relationship between Ferns and other allied plants, as well as between themselves. Basing his remarks upon the comparative study he had made of the mode of growth of the tissues of Ferns in their earliest state, and upon the nature of their spore-cases, he traced a conjectural series, proceeding from the simple to the more complex, contending that the Marattiaceæ and Osmundas more nearly represent the primitive types than any other, the Hymenophyllums, or Filmy Ferns, being at the other end of the series. The argument, which was very clearly and logically presented, was backed up by reference to the earlier stages of Equiseta, Lycopods, &c., and by geological evidence, which shows that the Marattiaceæ were, so far as known, an earlier type than the others, but the negative evidence afforded by the apparent absence of other forms in a fossil condition, may, of course, be upset by future discoveries.

Mr. Lowe followed with a paper on "Hybrid and Crossed Ferns," a paper of a most valuable and interesting character for cultivators, and one in which he traced the history of the subject, detailed the course of his early and of his more recent experiments, showing how much of the variation was clearly adaptive, and the result of adverse conditions, although the variations could often be perpetuated by spores. Mr. Lowe maintains that by mixing together the spores of from two to six different varieties, it is possible to secure hybrid varieties in which the character of all the parents may be represented in one plant, and he showed several specimens in illustration of his remarks. There are the facts, whether Mr. Lowe's explanation is the correct one, or whether the phenomena may not be capable of some other explanation remains to be seen. rofessor Bower, in commenting on them, urged that the matter should be put to a rigid test by isolating the prothalli, cultivating them by methods familiar in botanical laboratories, and following out in detail and continuously the whole life-history.

Dr. Scott continued the discussion. No two botanists could be found better qualified to undertake the task, which is one one of foremost importance physiologically, and ultimately practically also.

Mr. Druery followed with a paper on plumose Ferns, dilating on the peculiarities of their organisation, and describing the more prominent forms. Dr. Stansfield made a few comments in the same strain.

The last item of the programme was a paper by Mr. Birkenhead, on "Hardy Ferns, and their Cultivation." The magnificent illustrations exhibited by Mr. Birkenhead in the tent were a better means of conveying to the mind of the spectator the beauty and interest of the plants, than any formal enumeration or description. The cultural details were valuable, and coming from such a source will be studied with care.

Thus ended a Conference, equal in interest and permanent value to any of its predecessors.



FERNERY AT NASH COURT, FAVERSHAM.

We may once more beg the Society to consider the propriety of making these Conferences more agreeable and more valuable to the listeners. On this occasion most of the pundits read their papers in a long tent particularly ill-suited for acoustic purposes, so that only those in the immediate vicinity of the lecturers could hear. Moreover, much of the detail, however valuable, was not of a character to interest a mixed audience, especially on hot afternoons. The consequence was — but that may be imagined. A short abstract of the paper, containing the main propositions which the lecturer wishes to emphasise, should be circulated beforehand, the paper itself taken as read, and the lecturer requested to speak—not read—what he has to say, and to pick out the salient points he wishes to call attention to. The details should be reserved for the *Journal*. Discussion would thus be facilitated, and a somewhat dreary function would be replaced by a bright, lively conversational meeting, to the great relief of the auditors, and one which, we venture to say, would secure to the lecturer a measure of ympathy and success to which, under existing circumstances, he does not attain.

FERNERY AT NASH COURT.—Our supplementary illustration shows a view in the Fernery at Nash Court, near Faversham, and sufficiently illustrates what effective pictures may be obtained at relatively little cost and trouble by the use of easily-obtained Ferns. We need not enter into detail, as the illustration speaks for itself as to the cultivation which Mr. HUMPHREYS, the gardener, bestows on his plants; and, moreover, the Fernery was described in our number for January 14, 1888.

A MEMORIAL TO THE LATE B. S. WILLIAMS.—A memorial to the late Mr. B. S. WILLIAMS was put into a preliminary form at a meeting held at 50, Parliament Street, on Monday last. In the first instance, Mr. HARRY VEITCH presided, supported by Messrs. J. A. LAING, BAKER, SHIRLEY HIBBERD, A. OUTRAM, E. R. CUTLER, B. WYNNE, and L. CASTLE. A resolution of condolence with the family of the late Mr. WILLIAMS was adopted, and then it was resolved to form a committee to carry out a memorial of a strictly horticultural character. Mr. SHIRLEY HIBBERD was named chairman of the committee, which it is intended shall include a large number of representative horticulturists, and more especially of those specially interested in stove plants and Orchids. The form of proposal that found favour consists in money prizes and certificates to be offered at exhibitions, and to be restricted to stove and greenhouse plants and Orchids. It is hoped that such a certificate will be produced as will serve as a model for superseding the inartistic and often ugly things that have been in use hitherto, and an artist of high ability will be asked to make suggestions for it, for the consideration of the promoters hereafter. A meeting for enrolling members of committee and other business will be held at 50, Parliament Street, at 3 P.M., on Friday next, Aug. 1. Mr. A. OUTRAM and Mr. J. H. LAING, of Forest Hill, are honorary secretaries.

THE LATE REV. M. J. BERKELEY.—Parts 25 and 26 of *Northamptonshire Notes and Queries* contain, amidst a mass of material interesting to archæologists and those specially interested in Northamptonshire, a biography of the late Rev. M. J. BERKELEY. The list of his memoirs and publications, included somewhat oddly under the title "Bibliotheca Berkeleiana," shows what an indefatigable worker he was. The list does not include the articles contributed to this Journal almost weekly for more than forty years.

FAIRCHILD'S MULE PINK.—Referring to the subject of Carnations, which occupies so much of our space this week, we may call attention to a circumstance that is not generally known, but which, nevertheless, is historically of first-rate importance. The very first artificially produced hybrid of any kind on record, was raised by FAIRCHILD, at Hoxton, before 1719. The hybrid was raised between D. caryophyllus and D. barbatus, and known as Fairchild's Sweet William. FAIRCHILD was a nurseryman, and were it for this one circumstance alone should have a place in the Horticultural Walhalla as the foremost pioneer in the art of hybridising, which has since become so greatly extended. The practice was scouted at one time by the *unco guid*, as an interference with natural procedures; it was looked at askance by botanists from the confusion and difficulties of discrimination it introduces. It is looked on by their modern representatives as of the greatest importance in throwing light upon the "question of the evolution of species." All the old prejudice has vanished, but the feat of FAIRCHILD, known now only to few, should be published abroad, and his memory honoured in consequence. FAIRCHILD had a vineyard at Hoxton as late as 1722, and left money for a sermon to be delivered annually at St. Leonard, Shoreditch on Whit Tuesday, on the "Certainty of the Resurrection," as shown by certain changes in the animal and vegetable creation. Not only was FAIRCHILD the originator of the first hybrid, but he may also thus lay claim to be the originator of the flower-services now so common.

CIVIL LIST PENSIONS.—The pensions doled out to men of eminence who have devoted their lives to unremunerative labour, or to their representatives, are not only grotesquely inadequate, but disgraceful to the nation. The shame is felt the more keenly when note is taken of the vast discrepancy that exists between the amounts paid to certain fortunate nobodies and pensioners, and those given to men honoured for their labours by their fellows throughout the civilised world.

THE NEW ZEALAND FLAX PLANT.—At the present time, says the *Cornishman*, a plant of Phormium tenax is flowering in the open air in the vicinity of Exeter; and another in Mr. BRANWELL'S garden at Penlee, Penzance; and one flowered there some three years ago. The plant at Penlee is not in a damp situation, like the one in Exeter; and probably the mild winter has had more to do with the flowering than the dampness of the position. A number of plants of Dracæna australis have also flowered at Penlee. It would be interesting to know whether plants of D. australis have bloomed freely elsewhere than Penzance, and, probably, Scilly.

HOWEIA FORSTERIANA AND H. BELMOREANA.—Reverting to these two Palms, of which we gave a figure in our last issue, we may now mention, that in Count DE KERCHOVE'S elegant book on Palms, coloured figures are given of the two species, and which show the characteristic differences between the two, as mentioned in our last article. Count DE KERCHOVE objects to the name Howeia, as presenting too great a resemblance to Hovea, the well-known Leguminous genus. This is an illustration of the difficulty of obtaining uniformity. No Englishman would confound the pronunciation of the two words, but in French they would be very similar in sound. The two Palms grow in the island called after Lord HOWE; hence we not unfrequently see the name of the Palms written Howea. The more strictly classical form is Howeia, as Beccari wrote, and this has the advantage of being less readily confused with Hovea. Clivea, in like manner, would be more correctly written Cliveia.

BORDER CARNATIONS.—On Tuesday last, Mr. SMITH, who presided at the Carnation Conference, offered to give a sum of 20 guineas for five years to stimulate the cultivation of border Carnations.

"THE GENTLEWOMAN." — Yet another new paper has been sent to us! and one to which we can offer our best wishes. *The Gentlewoman* (published at Howard House, Arundel Street, Strand,) is a weekly sixpenny magazine, whose many pages are full of news, fiction, fashion, and similar topics interesting to the public, to which it is specially addressed. Children also are not forgotten, for a page is devoted to them. The whole magazine is well printed on good paper.

PRUNUS CERASIFERA VAR. PISSARDI.—This coloured Plum may be safely recommended as suitable for planting in town squares, even in smoky localities. At any rate, we have had the opportunity of trying it on a small scale in such spots with satisfactory results.

DOUBLE-FLOWERED EPIDENDRUM VITELLINUM.—Mr. SWAN sends us from the garden of G. C. RAPHAEL, Esq., a spike of Epidendrum vitellinum, in which all the flowers are more or less double. The conditions vary a little in each flower, but the general structure is as follows:—Three outer segments or sepals of the ordinary character, three inner segments or petals, the lip being like the two side-petals in form and colour, and quite detached from the column. The column itself consists of four or five disjoined petaloid pieces of very irregular shape—no pollen-masses are visible, but some of the segments have whitish threads on their margins like abortive ovules. The flowers, then, are the subjects of regular peloria, and of petalody of the stamens. Mr. SWAN tells us that all the flowers on other five spikes were similarly affected. It may be considered as a reversion to a less complex condition such as may have existed in earlier times, before the flower had become adapted to admit of insect fertilisation.

THE SUMMER SHOW AT THE ROYAL AQUARIUM. — Mr. W. HOLMES, nurseryman, Hackney, writes that the show to be held at the above-named place promises to be a good one for flowers in season, and Begonias of the tuberous-rooted section will be largely shown.

A FINE BEECH TREE.—In the forest behind the Castle of Mereworth, Maidstone, stands a Beech tree whose age must be more than 250 years, and which shows no indications of decay. The bole at 3 feet from the ground measures 17 feet in circumference, and it only commences to branch at a height of 22 feet, diameter of crown 30 yards. Dates cut in the bark about the middle of the last century, still clear and easily deciphered, show that it was a big tree then, and that it has expanded but little since. The surrounding forest is utterly wild, with immense old Thorns, Crabs, and Yews; and thin lanky Beech, Limes, &c., standing about without plan or design, and Bracken in every open glade and clearing where trees have fallen from decay, running up to 7 and 8 feet in height. It is very picturesque, but it is not forestry.

ANTHURIUM ANDREANUM VAR. MADAME CLOSON.—A seedling obtained by MM. JACOB-MAKOY & Co., of Liège, and sent out by the "Horticulture Internationale" of Brussels. The spathe is creamy-white, while the spadix is pale violet *Illustration Horticole*, t. 105.

BEES AND BEE-KEEPING.—The third part of Mr. CHESHIRE'S *Bees and Bee-Keeping* has just been re-issued. This is a work we can confidently recommend to the notice of apiarians. Mr. UPCOTT GILL, 170, Strand, is the publisher.

SCIENCE AND PRACTICE.—Mr. THOMAS MEEHAN says that it is fifty years since he wrote his first article for a horticultural paper, and it seemed to him, although horticulture had made rapid advances in all of those years, that it had not progressed as far on the scientific side as it ought to have done. As a practical example of some scientific truths, upon which good practice is based, he instanced the fact that fibrous roots live only a year. They do their work, and then die. Where there are a hundred small roots now about a young tree, there will be in a few years only a few large ones radiating from it, like railroads on a map. These big roots

alone have the strength to send out fibres, and the root is of no value to the tree until new white fibres are growing. Therefore, it may be that a mass of fibrous roots in a tree for transplanting is injurious. They are weak; they have no vital power to put out rootlets, and they may keep the soil from contact with the big roots, which therefore do not find the proper medium in which to throw out feeding roots. Another fact which observation teaches is, that roots die in exact proportion to the amount of tops that are cut off. If a tree is pollarded, nine-tenths of the roots may die, and then invite a fungus which spreads to the living roots. It is said that the branches which sprout from these pollards grow strongly because the roots are stronger below them, but in fact they grow from the food stored up in the trunk, just as shoots 3 or 4 feet long often grow out of logs which lie by the wayside. Generally, pollarded trees die after this operation has been frequently performed. Look, for example, at an Osage Orange hedge. If one of the trees at the end is allowed to grow, it will make a trunk as big as a man's body in twenty years, while the hedge-plants of the same age, their vital power being weakened by constant cutting, are no larger than a man's wrist. Of course, all pruning is not to be condemned, although it does weaken the vital power of the plant. We prune for other purposes than to make long-lived trees. *American Association of Nurserymen.*

TIMOTHY GRASS.—This grass, known in this country as Cat's-tail (Phleum pratense), is also widely known as Timothy Grass. It takes its name from TIMOTHY HANSON, a farmer of Maryland, who brought it under general notice as a hay-grass, after he had cultivated it extensively for his own use for years. It is a curious fact, that although its native home is Europe, the United States is the first country in which it was grown, cut, and cured for hay. And so it happens that a common European plant has secured a popular American cognomen.

BRITISH GUIANA.—Mr. G. S. JENMAN, the Government botanist, notes that in 1889 no fewer than 123·5 inches of rain fell, the mean amount being 84·7. But the variation between the highest and lowest annual rainfall at the gardens is as great as 100 per cent.! In spite of the heavy rainfall, bright sunshine was recorded on 354 days, leaving only eleven days that the sun was all day long obscured The mean maximum day temperature for the year was 86°, the mean minimum, 75°. The extremes were 90° in the shade, and 70° as the lowest night temperature. As a consequence of the heavy rainfall, many Roses, Palms, Casuarinas, and even Sugar-canes, succumbed. The Palmyra Palm, Borassus flabelliformis, produced its flowers as well as other Palms, concerning which an interesting note is given in the annual report. Mr. JENMAN also notes numerous cases of seeding in the Sugar-cane.

M. VAN IMSCHOOT'S ORCHIDS.—We have received a copy of the Catalogue of the Orchids cultivated by this gentleman at Mont St. Amand, near Ghent. The Catalogue is arranged alphabetically, and comprises approximately no fewer than 800 species and varieties. M. VAN IMSCHOOT is desirous of exchanging with other amateurs.

WHAT MODERN ENTERPRISE CAN DO.—The Ceylon papers of June last contain graphic descriptions of the interest excited in the island by the visit of Mr. LIPTON. Amongst other estates bought by him is the well-known Haputale group, the most valuable both for Tea and Coffee of any in the country, £130,000 having been previously refused. It may be mentioned that the Dambetenne estate alone, which is included in the Haputale group, and which covers over 2,300 acres, cost £80,000 cash. The estate of Pooprassi, in Pussellawa, had also been bought by Mr. LIPTON from the Chartered Mercantile Bank India, China, and London. This estate contains over 900 acres in Tea and Coffee. Altogether on the various estates owned by Mr. LIPTON, over 3000 coolies are employed. Negotiations are going on for the purchase of several other estates.

PAPAVER HELDREICHII.—We lately met with this distinct Poppy in the garden of the Rev. W. WILKS, the indefatigable Secretary of the Royal Horticultural Society. It is closely allied to P. pilosum, having deeply lobed, glaucous, coarsely hairy leaves, but the most marked feature about it consists in the peculiar salmon-coloured flowers. These are very effective, and the petals do not drop for some time after the flowers are cut and placed in water. The plant is a native of the mountains of Lycia, Taurius, and Lycaonia, and is described in BOISSIER'S *Flora Orientalis*, i., p. 108 (1867).

THE VEGETATION OF CENTRAL AFRICA.—In the mountainous region between the Albert and the Albert Edward Nyanzas, in the Semliki Valley, Stanley thus speaks of the physical features and vegetation :—

"There were many lateral depressions, marking the courses of the streams, and few elevations of any importance, but over the whole slowly sailed the snow-white mist in broad, irregular streams; these, in a few moments, became joined into a universal mass, which to us, looking down upon it, resembled an inverted sky. All this was very annoying to us as curious sight-seers, anxious to know the strange world we were in; but it furnished suggestions as to the reason why this part was so especially prolific, and why Ruwenzori was so coy. No winds could cool this portion of the valley, or waft the vapours away and clear the atmosphere from an entire corner of the compass, owing to the extent and great height of Ruwenzori. The great mountain intercepted every breeze from the east round to south, and prevented the everlasting exhalations of the valley from being blown in that direction; but, on their reaching the intense cold above, distilled them and rediffused them in copious showers of rain. From north to west the northern range of mountains obstructed the free passage of the winds, and assisted to maintain that equable heat of the valley that was necessary for the fostering of that marvellous vegetation. In every camp of this region the smoke hung over us like a pall, smarting the eyes, and half-suffocating us. In such a Nature's conservatory as the Semliki Valley, buried under its own perpetual warm exhalations, vegetation, as a matter of course, finding every favourable element therein necessary for its growth and nourishment, grows in riotous profusion. Where the humus is deep we find a tall and stately forest, with an impervious underwood of young trees bound together, and sometimes altogether hidden by countless climbing Vines and robust plants; where the humus is thinner, as near the foot of the range, dense crops of Cane-grass, from 10 feet to 15 feet in height, flourish luxuriant and impenetrable. Every tree stem has its green robe of soft moss dripping with dew, and each Tree Fern or horizontal branch has its Orchids, or broad elephant-eared plant. Every rock is clothed with Lichens, and if but the slightest hollow is found in it, there will be seen a multitude of tropic plants crowding every inch. In short, everywhere, except upon the perpendicular face of a late-moved boulder, vegetation thrives of every variety of greenness, form, and character."

HOME CORRESPONDENCE.

STRAWBERRY KITLEY'S GOLIATH.—"A. D.'s" remarks on p. 80 call for a reply. Goliath was grown here twenty-five years ago, and at one of the Royal Horticultural Society's meetings (1888) some of John Powell were exhibited from Gunton Park, which Mr. Allan considered to be distinct from Goliath, and he kindly sent a few plants to me. We put them in our list as John Powell, but after a further trial on equal terms (which the first year's growth did not give us), both myself and my Strawberry manager considered them identical, and therefore we classed them as the same. It appears to me to make little difference whether you state John Powell (Goliath) or the reverse. It is a good kind under any name. John Powell was, I think, one of the Frogmore seedlings. The same thing occurs in Eleanor; some fine growers still maintain that Oxonian is distinct. I consider them alike, and therefore class them as one only. *George Bunyard, Maidstone.*

—— We find at p. 740 of the *Gardeners' Chronicle*, for 1851, some remarks by the late Mr. Bailey, gardener at Nuneham, on new Strawberries, in which he condemned Cuthill's Black Prince, Goliath (Kitley), Myatt's Eleanor, and some others. The following week appeared replies to this note from gardeners North and South, some praising, some finding fault with Goliath and the others; and at p. 789, Kitley, the raiser of the fruit in question, combatted the views of the first writer—Bailey—that it and the others he condemned, were crosses from the Chili Pine, and were on that account worthless. Kitley asserts that his fruit was raised from British Queen, without crossing, and moreover asserts that he would like to test a bed of a given number of plants of Goliath against a bed of British Queen, five points to be taken, viz., flavour, colour, size, productiveness, and hardiness of plant. Bailey called Goliath "insipid" ("not high flavoured" in a later letter), coarse, woolly, and a shy bearer; but he climbed down a little in the later letter. The public since his day have virtually endorsed his opinions in regard to most of the varieties he condemned, as is seen in their retirement from general cultivation. Some few conservative growers stick to Black Prince, very few grow Goliath, Eliza, Eleanor, or the others, because there are now many others greatly superior to these, British Queen excepted, and even that much belauded Strawberry will not do well everywhere. The older raisers then ran much after size, just as they do now, and with less regard to flavour and appearance, for there were many very ugly Strawberries in those days beyond those named in this note, as the writer can well remember. Railways were few; fruit was not sent to any great distance, and firmness of flesh was therefore not a point to be insisted on, as witness the softness of the favourite varieties, Trollope's Victoria, Keen's Seedling, Bicton Pine, Black Prince, Carolina Superba, and Rosebery. None would then travel well. The old Pine was the best perhaps. *A. Y. E.*

—— I am much obliged to Mr. Dean for drawing attention to the new name given to this Strawberry by Mr. Bunyard. This excellent Strawberry was raised by my father, the late James Kitley, nurseryman, Lyncombe Vale, Bath, and was sent out by him, I think, in the year 1848. I hope we shall hear no more of "John Powell" in connection with this Strawberry. Kitley's Goliath is one of the very best Strawberries, either for a private garden or for market purposes. It is a very heavy cropper. I can remember when a boy seeing my father gather as many as 3 lb. at one time off one plant. It was a common occurrence to set down one of the Bath Strawberry baskets (holding 3 lb.), and fill it without moving on. Again, the flavour of Goliath is very little inferior to that of British Queen, and the constitution of the plant is all that could be desired; it is largely grown in the neighbourhood of Bath, and always takes a prominent place in the Bath shows. Another Strawberry that was raised by my father about the same time as Goliath, is worthy of notice; I mean Carolina Superba, a very handsome Strawberry of the British Queen type, and quite equal to it in flavour, the habit of the plant is very dwarf and compact, growing little more than 8 inches high. It thrives best when planted frequently and rather close together, say 10 inches apart in the row, and 15 inches from row to row. In my opinion it is the finest flavoured Strawberry in existence, as a proof of which the blackbirds leave every other kind for this one. *John Kitley, Castle Nursery, Warwick.*

OWLS.—I read with great interest the description of Netherby in last week's *Gardeners' Chronicle*, and have great pleasure in corroborating what "H. E." says on p. 66, respecting the needless sacrifice of that beautiful and useful bird, the owl. A lodge was built for some favourite brood mares in a paddock here, and a space was left in the gable for the owls to roost and rest in, which happily has taken place, and every evening they may be seen skimming over the meadows and gardens in search of food—so soft and downy, as a lady remarked, as if they were of tissue paper; but the pith of my story remains to be told, for the keeper has reared 500 pheasants in this very field, and he says he does not believe that he has lost one; and, as "H. E." puts it, why this needless sacrifice of an innocent bird? indeed, it is a great friend of the gardener, and many a row of early Peas is saved by the owls

keeping the mice under. It grieves me always when I see scores of larks being dressed for dinner, and the rush after plover's eggs in the London season, thus running the risk of exterminating perfectly innocent birds. And let a kingfisher or woodpecker make their appearance, and some stupid fellow will soon be on their track. One might bring forward hundreds of such instances of this love of mere shooting for shooting sake, and it behoves every humane person to set his face against it. *J. Rust, Eridge Castle, Sussex.*

LONDON PURPLE, AND HOW TO USE IT.—I have been waiting for some one to break the ice in regard to the use of London Purple, and beg to thank Mr. Evans for bringing this to the notice of your many readers, through the columns of the *Gardeners' Chronicle*, and if you will permit me I will give my testimony as to its effects. I procured 1 lb. of London Purple in powder, mixed 2 ozs. into a paste, gradually added water until it became like thin paint, filled up the water barrel which holds 25 gallons, and then I put into it the mixture, stirring it well all the time, which makes the water of a pale green colour. We sprayed the trees with an ordinary syringe, first some Filbert bushes, and waited about eight days to see the effect, which was most gratifying. I then mixed some more and applied it to the Pear trees, with the same good results; and then it was employed on Apple trees, which were simply covered at that time with caterpillars. Before spraying, the trees should first have set their fruit, and during its use keep the mixture well stirred with a broomstick. This is practical advice, which I trust may be of some good. *John Atkinson, Wykeham Rise, Totteridge, N.*

CARNATION GRENADIN.—From a packet of seed of this variety one can ensure a good supply of very early blooms, and often are enabled to select a few good flowers worth propagating. I have had some very good flowers in several years, and at Spye Park the gardener, Mr. Perry, told me that he had been cutting blooms for more than one month, and very useful he had found them during the London season, when he had to send great quantities away. He had some brilliant-coloured blooms amongst his plants. *W. A. Cook, Compton Bassett.*

HYBRID THUNIA.—In your issue of the 19th ult., under the above heading, it is stated that the same Thunia was raised by Mr. Toll, of Manchester; but those seedlings were in reality raised by Mr. O. F. Gordon, when gardener to G. G. Wrigley, Esq., when he lived at Broad Oaks, Bury; and had Mr. Toll been living now, he would be the first to say so. *T. G., Bury.*

AMERICAN STRAWBERRIES. — In a recent number you state that these may be worth a trial here. At present none of them are of any value, as tried in our grounds. The only one worth attention is Crescent City (or C. seedling), which is the first to ripen. Curious to say, the American Raspberry, Marlborough, has no flavour whatever as grown here. Mr. Laxton states Sharpless was one of the parents of Noble. If our imported stock of Sharpless is true, it is very inferior. *G. Bunyard.*

ACCLIMATISATION. — On p. 68, Dr. Bonavia refers to an opinion about acclimatisation expressed by me in a recent lecture on hardy gardening at the Drill Hall. I said, that no man can educate a plant in successive generations from seed to endure a greater degree of cold than it was formed by Nature to bear. I maintain an open mind on this question, and will gladly own that my opinion is wrong when any certain proof is given against it. But the cases mentioned by Dr. Bonavia hardly touch the point at issue. As regards cultivated herbs, like the Cauliflower, which have departed far from their natural type, gardeners and agriculturists know that they have many peculiarities, and that the seed of some of them must be raised under unnatural conditions, in order to ensure good crops. It is said, for instance, that Turnips or Carrots, if the plants from which seed is ripened have not been transplanted, become club-rooted or tap-rooted; and to say that seed of Cauliflowers must be ripened under certain conditions, in order to produce good plants in a tropical climate, hardly tends to disprove my assertion. Again, in the case of the Amaryllis, I can easily believe that successive crossings between tropical and less tender kinds have evolved a more hardy intermediate race. Hybrids often differ from both parents so much, that I should not be surprised to learn that a cross between two tender plants had proved hardy; but I intended, in what I said at the Drill Hall, to refer to typical and unaltered species. Take, for instance, any plant which in ordinary English gardens verges upon the limits of hardiness, such as Celsia cretica, or Primula obconica; if it can be proved, that after twenty years or fifty years of reproduction from seed in England, either of these plants has become more capable of enduring an English winter than plants raised from seed gathered in their native home, I will own that I am wrong. *C. Wolley Dod, Edge Hall, July 20.*

—— In reference to the remarks of Dr. Bonavia, on pp. 68, 69, I should like to draw attention to Dr. Alfred Russell Wallace's notes on this subject, to be found on p. 94, &c., in his work *Darwinism*. Wheat is there shown to have become adapted to other climates. The Orange is said to have been tender in Italy when first introduced, and this tenderness continued in the case of grafted plants, until seedling varieties raised on Italian soil proved to be hardier than the grafted varieties as originally introduced. Darwin, himself, observed the varying hardiness in seedlings of Runner and in French Beans, and there can be but little doubt that seed carefully selected from the hardier forms of any species, gives us a hardier race if selection from this point of view be persisted in generation after generation. I should say that the observations of every gardener go to prove most conclusively that all the parts of a plant, germ-plasm included, are distinctly affected by its surroundings. *F. W. B.*

TRAGOPOGON PRATENSIS, GOAT'S-BEARD.—This British plant is yearly an interesting plant to me, and I keep a few specimens for observations. The flower opens at this season of the year at 5 A.M., and closes daily at 11 30 A.M., within a few minutes. As my old and departed friend, the late Mr. Bains, wrote in his *Flora of Yorkshire*:—

> "In every dark and sheltered dell,
> Unveiled to the observant eye,
> A faithful monitor who tells
> How passes the hours and seasons by.
> Broad over its imbricated cups,
> The Goate's-beard spreads its golden rays,
> And cautiously shuts its petals up,
> Retreating from the noon-tide blaze."

R. H. D. [Some seeds of this plant for sowing in August were kindly sent by our correspondent. If sown at that time, the plants will bloom in May, June, and July following. Ed.]

LARGE SPECIMEN PLANTS OF PERPETUAL FLOWERING CARNATION.—The beginning of this month, in looking through the gardens of Alderman Chaffin, at Bath, I noticed some dozens of large, healthy and floriferous plants of perpetual flowering Carnation. The plants, about 3 feet high, and as much in diameter, were in 10-inch pots, and which were plunged to the rim in coal ashes in a high position sheltered from the north. The plants were only eighteen months' old, and the variety Belle Rose, and were potted firmly in enriched, light, loamy soil. The flowers were not large, but very compact and fragrant, and the colour was pink-rose. Mr. Taylor's skill in growing Tree Carnations is equal to, but not so widely known, as his ability to grow Grapes of the finest quality. I have seen this variety of Carnation only once before—at Longleat, in 1879—a few years before Mr. Taylor removed to Bath. *H. W. Ward.*

MARKET GARDEN WOMEN.—At a time when the wages remuneration for labour is creating so much interest, there may be use in referring to the summer earnings of women in the market gardens here just now. Ordinarily the payment to women is from 1*s.* 3*d.* to 1*s.* 6*d.* per day for nine hours' labour. Considering how rough that work often is in the winter, and to what inclemencies they are exposed, it can hardly be said to be high. Relatively, however, it is about as much as growers can afford to pay, as profits in the trade are moderate. It is in the summer season, when work is plentiful, and is largely paid by the piece, that women are well remunerated. Commencing with Violet gathering at per dozen bunches, and Wallflower gathering, presently comes on green Gooseberry picking, then Peas, Strawberries, bush fruits, Runner Beans, &c., giving some three to four months of fairly well-paid labour. During the Strawberry season, women are often out at 4 A.M., as it is of the first importance the fruits should be gathered and sent to market the same morning. I have just seen the wages account of one local grower who employs twelve women, showing that with Peas, Strawberries, Raspberries, and Gooseberries, the dozen earned last week just £14, or at the rate of £1 3*s.* 4*d* each. In one case a mother and her daughter took off that amount each, and the husband, who does little of piece labour, but usually makes overtime, earned 21*s.*—not a bad income for one family, but of course exceptional. Ordinarily the men's hours are from 6 A.M. to 6 P.M. for 3*s.* per day, not considerable pay, but making all through the summer 3*s.* extra per week overtime, and almost invariably having the wife's wages also, their case is not bad. It is rather the homess and children which suffer, and on the whole it i found that the wife who has earned £20 during the summer, and is little, if any, better off in the end than is the wife who has stopped at home and looked after her family. *A. D.*

CAMPANULAS. — Among hardy border plants, few are more showy just now than the Campanulas, especially those known as Canterbury Bells, C. Medium calycanthema, of which there are three distinct varieties producing differently coloured flowers, one pure white, another blue, and another mauve or flesh coloured, which have big bell-shaped blooms, with large saucer-like calyces of the same hue. Besides being splendid plants for borders, they are decorative when grown in pots for the greenhouse, and if placed under glass early in the spring, they flower about one month before those in the open. Being biennials, it is necessary to sow seed and raise fresh plants each year, which should be done in April, so as to get them large and strong; but serviceable plants may be obtained in July if they can be got up quickly under glass and pushed along quickly afterwards. Sow the seed in prepared soil, making it fine and watering it, and just cover the seeds by sifting silver sand over it, placing a hand-light over it, and keep it closed until the plants are up. As soon as these are large enough to handle, prick them out in rich soil, at 8 inches apart, to be left to grow till it is time to lift and pot, or plant them out in the borders. For flowering indoors, it is better to pot in the autumn and winter under glass in a cold frame, as then they make plenty of root, and flower more freely and finely than they do when not fully established. Another good one to grow in pots for the embellishment of the greenhouse, Campanulas, C. pyramidalis, blue and white varieties, which attains a height of from 3 to 5 feet, and flowers from base to summit. C. pyramidalis is a perennial, and is increased by means of suckers, which the plants send out freely around the crowns, and the strongest and best should be taken off and potted, or planted out in the same way as the others. Besides being propagated in the manner mentioned, C. pyramidalis may also be raised from seed, and if this be sown at once, and the plants treated like the others, they will flower next season. C. persicifolia and C. persicifolia alba are both desirable kinds for the border, and these are of lowly growth and perennial, but they send up tall thin spikes of long bell-shaped blooms that make a good show. *J. S.*

EARLY PEACHES.—From a young tree of Alexander Peach, growing against a south wall, I gathered two ripe fruits on Sunday, July 20, and two again this morning (July 22). Is this not very early? The thermometer on the north side of the same wall had gone down to 43° on the night of Saturday previously. *T. Woodham Mott.*

HEAVY RAINFALL AT READING.—It may interest many of your readers to learn, that the total rainfall as registered here for the twenty-four hours ending 9 A.M. on the 18th inst., was no less than 3·10 inches. *J. Woolford, East Thorpe.*

WELL-GROWN ZONAL PELARGONIUMS. — Quite the best grown and flowered examples of zonal Pelargoniums I have had the pleasure of seeing for some time, came under my notice a week ago, in the garden of Matthew Hodgson, Esq., Shirley Cottage, near Croydon. The plants were growing in 8-inch pots, on a sloping stage, in an old lean-to vinery, and were not quite a year old. Most of them measured 2 to 3 feet in diameter, and had shoots fully 2 feet long, each shoot carrying two or more immense trusses of remarkably large blooms. Plutarch, a brilliant scarlet variety, had exactly 100 trusses of bloom on it; Swanley Gem, ninety trusses; Mrs. Lord, eighty-seven; Mrs. David Sanders, and Constance, eighty-five; whilst numbers of others ranged between fifty and eighty. Mr. H. Shoesmith, the talented gardener, attributes his success to cool treatment, small pots, and liberal feeding with

liquid-manure, drainings from manure, and the contents of a cesspool. It should also be mentioned that the shoots were furnished with healthy leafage down to the base. Mr. Shoesmith is equally successful in growing and flowering the Maréchal Niel Rose, also Cinerarias, herbaceous Calceolarias, and, in fact, in everything he has under his charge, both in and outdoors. *W.*

Societies.

ROYAL HORTICULTURAL.

July 22.—The meetings of the committees were held at Chiswick last Tuesday, in conjunction with the Exhibition and Conference of the National Carnation and Picotee Society, which is considered in detail in another column; and the Fern Conference, which was opened on that day and continued on Wednesday, when various papers of considerable interest were contributed, and of which some note is made on p. 102. The weather was hot, and all things favourable for a good attendance of visitors, who, however, did not arrive in large numbers.

The exhibits of Ferns were extensive, filling one long tent and a portion of another; Messrs. W. J. Birkenhead, C. T. Druery, E. Lowe, H. B. May, J. Veitch & Sons, and J. A. Whittard making the display, which, however, was, as a show of Ferns, very fine; and the excellent specimens of varieties of British species from Mr. Lowe and from Mr. Druery deserve a special notice. Specimen plants, in the general acceptation of the term, were conspicuously absent, and a few Tree Ferns would have greatly improved the whole display; but the long banks of Ferns in the various shades of green, and the gracefully crested fronds, produced a very pleasing effect. In the subjoined remarks, mention is only made of the most striking and rarer plants in the several collections.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. S. Hibberd, R. B. Lowe, C. T. Druery, J. Walker, H. Herbst, G. Nicholson, T. Baines, W. C. Leach, R. Dean, W. Goldring, G. Paul, and W. Holmes.

Messrs. H. Cannell & Son, Swanley, Kent, showed cut blooms of double Tuberous Begonias, and plants of the varieties H. M. Stanley, double, bright magenta, large in petal; Lafayette, dark scarlet, very bright—a free-flowering plant, with flowers of moderate size, foliage also dark; and also a crimson-spotted Gloxinia, Mrs. Stanley, a short-tubed flower, with large lobes.

Messrs. Paul & Son, Cheshunt, showed a large collection of cut flowers. Roses were numerous, and the boxes contained some good examples of popular flowers, including some of the more recent introductions, Cheshunt Scarlet, Clothilde Soupert, Mrs. Paul, and Bruce Findlay; also L'Idéal (a Noisette), rich apricot-yellow, flushed heavily with crimson. Herbaceous flowers came from the same, and included several Œnotheras, Eryngium amethystinum, Campanulas, and a double form of Clematis erecta, very elegant. Numerous bunches of Carnations were also shown.

Messrs. J. Veitch & Sons, Chelsea, S.W., showed a capital lot of Carnation and Picotee blooms grown at Chelsea, and also trusses of hybrid greenhouse Rhododendrons; and from Mr. T. S. Ware, Hale Farm Nursery, Tottenham, a prettily-arranged collection of Carnations in bunches, set up with foliage, was also contributed.

Mr. R. Dean, Ealing, exhibited cut blooms of three varieties of self Carnations, viz.: Rosalind, delicate soft pink with fringed petals; Rowena, brilliant scarlet; and Rebecca, speckled heavily with rosy-purple, and also a collection of cut Pentstemons.

Mr. Samuel Barlow sent from Manchester a stand of florists' laced Pinks, including James Thurstan, Boiard, George Hodgkinson, Henry Hooper, and Mrs. Darke, and the National Carnation Society made an Award of Merit to the collection, and gave a First-class Certificate to James Thurstan, a very fine dark laced variety.

Mr. T. Bones, Tower House, Chiswick, and Mr. Headland, The Firs, Leyton, also sent Carnations, while Mr W. C. Leach, Albury Park Gardens, Guildford, showed a deep blue Delphinium.

A group of plants was also shown from the Royal Gardens, Kew, in which were the old Æschynanthus speciosus, very showy; Peperomia resedæflora, Solanum Wendlandi, with large mauve flowers; Gladiolus primulinus, a pure, soft yellow flower without a trace of any other colour; the sweetly-scented Hedychium flavescens, Mutisia decurrens, Littonia modesta, Nerine curvifolia, Sollya linearis, Zephyranthes robusta, and Eucomis bicolor.

A pretty and tastefully arranged group of Carnations Souvenir de la Malmaison and its pink form, and Germanica mixed with Adiantums, &c., came from Mr. Reynolds, gr., Gunnersbury Park Gardens, Acton.

Orchid Committee.

Present: Sir T. Lawrence, Bart., in the chair, and Messrs. J. O'Brien, C. Pilcher, E. Hill, J. Dominy, H. J. Veitch, and W. B. Latham.

From Sir T. Lawrence, Burford Lodge, Dorking (gr., Mr. W. White), came an Epidendrum of the Parkinsonianum type, having its segments broader, the sepals very pale pink, petals white, as was the lip, which had a central spot of lemon-yellow; also Oncidium chrysorhapis, with densely-flowered spikes, the flowers yellow, with brown tranverse lines.

Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, sent an unnamed Orchid (? Dipodium); it had a tall growth, and bore a flower raceme of 2 feet length, with eight flowers about the end; flowers white, the linear sepals and petals half an inch long, with a few small pink spots; lip folded so that the two edges meet; crimson and white, with white hairs at the apex.

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, S.W., showed Masdevallia elephanticeps, the flower rich yellow outside, red-brown within.

A plant of Cypripedium Lawrenceanum Hyeanum, the flower of apple-green and white, with pale green mottled leaves; and a new Dendrobium, resembling crystallinum, came from Messrs. Pitcher & Manda, Hextable, Swanley.

From Messrs. F. Sander & Co., St. Albans, came Masdevallia Rolfeana, deep crimson-brown, with yellow tails; Dendrobium chrysolabium, with a compact spike, bearing flowers of pink with a small rich yellow lip; a fine piece of Cattleya Schofieldiana, and Grammatophyllum multiflorum, pale green, with irregular large brown spots, was also shown.

Fruit Committee.

Present: T. F. Rivers, Esq., in the chair; and Messrs. J. Cheal, P. Crawley, P. C. M. Veitch, H. Balderson, W. Warren, G. Wythes, and J. Hudson.

Three fine specimens of the Queen Pine came from Mr. R. Nicholas, Castle Hill Gardens, South Molton; they weighed in all 21 lb. Mr. Leach, Albury Park Gardens, Guildford, sent specimens of Raspberry Hornet; and Mr. J. Barkham, Longford House Gardens, Ryde, Isle of Wight, had a very fine-flavoured red-fleshed seedling Melon.

Prizes were offered by Messrs. C. Sharpe & Co. for Peas, and that for six went to Mr. W. A. Cook, gr. to Major Heneage, V.C., Compton Bassett, Calne, Wilts; while for three dishes, Mr. J. Watkins, Merrow, Guildford, took 1st, there being no competition in either class.

Awards were made as follows:—

By the Floral Committee.

Awards of Merit.

To Clematis erecta, fl. pl., from Messrs. Paul & Son.

To Border Carnation, Rosalind, from Mr. R. Dean.

To Border Carnation, Rowena, from Mr. R. Dean.

To Gloxinia, Mrs. Stanley, from Messrs. H. Cannell & Sons.

To Begonia, H. M. Stanley, from Messrs. H. Cannell & Sons.

To Begonia, Lafayette, from Messrs. H. Cannell & Sons.

To Rose (Noisette), L'Idéal, from Messrs. Paul & Son.

By the Orchid Committee.

First-class Certificates.

To Epidendrum species from Sir T. Lawrence,

To Oncidium chrysorhapis, from Sir T. Lawrence.

Awards of Merit.

To Grammatophyllum multiflorum, from Messrs. F. Sander & Co.

To Masdevallia Rolfeana, from Messrs. F. Sander & Co.

Botanical Certificate.

To Masdevallia elephanticeps, from Messrs. J. Veitch & Sons.

By the Fruit Committee.

First-class Certificate.

To Melon, Barkham's Seedling, from Mr. J. Barkham.

Medal.

Silver, to Mr. R. Nicholas, for Queen Pines.

National Carnation and Picotee (Southern Section).

The annual exhibition of the Society was held on this occasion at Chiswick, the flowers being staged in a tent on the lawn. The weather was delightfully fine, and visitors were enabled to see the gardens under the best conditions. It must be admitted that the display of Carnations surpassed expectation, as the season had proved so unkindly, the plants developed badly, and the want of sunshine not only failed to bring out the flowers, but also to give priority of the ground to those which had expanded. There was a much larger number of blooms staged than could have been expected, and they were much finer in quality than it was generally supposed they would be. The fact that they were exhibited under canvas enabled the flowers to be seen to the very best advantage.

Carnations. — There were three collections of twenty-four blooms of these in not less than twelve varieties. The best came from Mr. James Douglas, gr. to Mrs. Whitbourn, Great Gearies, Ilford, who had large and highly developed flowers for the season of Arthur Medhurst, S.B, Matador, S.F., Squire Whitbourn, P.F., Harrison Weir, C.B., Alisemond, S.F., Robert Houlgrave, S.B., Thalia, R.F., Edward Adams, S.B., Joseph Crossland, S.B., Rosamond, C.B., John Keet, S.F., Harmony (Douglas), P.P.B., and some very promising seedlings; 2nd, Mr. Charles Turner, Royal Nursery, Slough, with Hutchinson's Rose, R.F., H. K. Mayor, P.P.B, Thalia, R.F., James Taylor, P.P.B., Mrs. Payne, P.P.B., Alisemond, S.F., Mayor of Nottingham, P.F., Miss Erskine Wemyss, R.F., William Skirving, P.P.B., Squire Potts, S.B., Jupiter, S.F., Albion's Pride, C.B., and Robert Houlgrave, S.B.; 3rd, Mr. M. Rowan, Manor Street, Clapham.

In the class for twelve blooms, distinct varieties, there were six competitors, Mr. M. Rowan, was placed 1st, with Thalia, R.F., Alfred, S.B, J. D. Hextall, C.B., Master Fred, C.B, James Douglas, P.F., Sarah Payne, P.P.B., George Melville, P.F., Admiral Curzon, S.B., Edward Rowan, C.B., a very promising variety; Gordon Lewis, P.F., Sportsman, S.F., and John Buxton, R.F. 2nd, Mr. James Douglas, with Joseph Crossland, S.B., John Harland, C.B., Rob Roy, R.F., Matador, S.F, a sport or two, and seedlings; 3rd, Mr. C. Phillips, Hamilton Road, Reading.

In the class for six blooms there were nine exhibitors, Mr. Joseph Lakin, Temple Cowley, Oxford, was 1st, with fine blooms of James Douglas, P.F., Duchess of Fife, a pretty and very delicate variety; R.F. Squire Llewellyn, C.B., Matador, S.F., and Lovely Mary, R.F., a very fine seedling from the old Lovely Ann; 2nd, Mr. T. Anstiss, Brill, with William Bacon, C.B., Mrs. May, R.F., James Douglas, P.F., Robert Cannell, S.F., Robert Houlgrave, S.B., and Seedling Dodwell, P.F.; 3rd, Mr. J. J. Keen, Castle Street, Southampton.

The following were the awards made in the classes for single blooms:—

Scarlet bizarres: 1st and 2nd, Mr. Douglas, with Robert Houlgrave; 3rd, Mr. H. W. Headland, Leyton, with Joseph Crossland; 4th, Mr. Headland, with the same; 5th, Mr. C. Phillips, with Genge.

Crimson bizarres: 1st, Mr. J. Douglas, with seedling; 2nd, Mr. C. Phillips, with John Harland; 3rd, Mr. J. Douglas, with seedlings; 4th, Mr. R. Sydenham, with Harrison Weir; 5th, Mr. H. W. Headland, with Duc d'Aumale.

Pink and purple bizarres: 1st, Mr. A. J. Sanders, with William Skirving; 2nd and 3rd, Mr. J. Douglas, with seedlings; 4th, Mr. J. Lakin, with Sarah Payne; 5th, Mr. C. Phillips, with James Douglas.

Rose flakes: 1st, Mr. J. Lakin, with Lovely Mary; 2nd, Mr. J. Douglas, with seedling; 3rd and 5th, Mr. C. Turner, with Thalia; 4th, Mr. M. Rowan, with Thalia.

Purple flakes: 1st, Mr. J. Douglas, with Mrs. Rowan; 2nd, the same, with a seedling; 3rd, Mr. A. J. Sanders, with James Douglas; 4th, Mr. J. Lakin, with Mayor of Nottingham; 5th, Mr. C. Phillips, with James Douglas.

Scarlet flakes: 1st, Mr. J. Douglas, with Alisemond; 2nd, Mr. J. Lakin, with Sportsman;

3rd and 5th, Mr. C. Phillips, with the same; 4th, Mr. H. W. Headland, with Henry Cannell.

The premier Carnation, selected from the whole show, was S.B. Robert Houlgrave (Barlow), shown by Mr. C. Turner.

Picotees.—There were two stands of twenty-four blooms, not less than twelve varieties, and here Mr. Charles Turner was 1st, with Lucy, L. Rose E.; Nymph, L.P.E.; Lady Holmesdale, H. Rose E.; Princess Dagmar, H.P.E.; Rival Purple, H. Rose E.; Louisa, H. Rose E.; John Smith, H. Red E.; Madeline, H. Rose E.; Lucy, L. Rose E.; Miss Flowdy, L. Rose E.; Norfolk Beauty, H.P.E.; Lord Valentia, H. Red E.; Mrs. Gorton, L.P.E.; and several seedlings. 2nd, Mr. J. Douglas, with Her Majesty, L P.E.; Constance Heron, Liddington Favourite, R. Rose E.; Muriel, H P.E.; Mr. Chancellor, H.P.E.; Silvia, L P.E.; Mrs. Bower, L. Red E.; Ethel, L. Rose E.; Princess of Wales, H. Red E.; Mr. Sharpe, H. Rose E.; Brunette, H. Red E.; Her Majesty, L.P.E; Muriel, H.P.E.; Miss Flowdy, L. Rose E.; and several seedlings.

Mr. Douglas had the best twelve blooms, staging Her Majesty, L.P.E.; Constance Heron, L. H. Rose E.; Liddington Favourite, L Rose E.; Muriel, H.P.E.; Princess of Wales, H Red E.; Jessie, L P.E.; Mrs. Sharpe, H. Rose E.; Mrs. Goggie, L. Rose E.; Silvia, L.P.E.; Mr. Chancellor, H.P.E.; Zerlina, H.P.E.; and Brunette, H. Red E. 2nd, Mr. C. Phillips, with Orlando, L. Rose E.; Mrs. Sharpe, H. Rose E.; Juliette, L.P.E.; Royal Visit, H. Rose E.; Mrs. Ricardo, Light Rose E.; Brunnette, H. Red E.; Favourite, L. Rose E.; Amy Robsart, H.P.E.; Muriel, H.P.E.; Ethel, L. Rose E.; John Smith, H. Red E.; and Thos. William, L. Red E. 3rd, Mr. A. J. Sanders, Brookham Lodge, Cobham.

The best six blooms were furnished by Mr. M. Rowan, who had Master Norman, H. Red E.; Favourite, L. Rose E.; Edith D'Ombrain, H. Rose E.; Clara Penson, L.P.E; Muriel, H.P.E; and Brunette, H. Red E. 2nd, Mr. G. Chaundy, William Street, Oxford, with Amelia, H.P.E; Lady Holmesdale, H. Rose E; Favourite, L. Rose E.; Clara Penson, L.P.E.; Seedling, L.P.E.; and Mrs. Lord, R. Rose E. 3rd, Mr. J. Lakin.

In the classes for single blooms of Picotees, the awards were made as follows:—Heavy Red Edged: 1st, Mr. J. Lakin, with Isabel Lakin; 2nd, Mr. A. J. Sanders, with Brunette; 3rd, Mr. H. W. Headland, with J. B. Bryant; 4th, Mr. J. Douglas, with Princess of Wales; and 5th, with Brunette. Light Red Edged: 1st and 2nd, Mr. J. Douglas, with Violet Douglas; 3rd, Mr. R. Sydenham, with Ethel. Heavy Purple Edged: 1st and 3rd, Mr. J. Douglas, with Mr. Chancellor; 2nd, Mr. C. Phillips, with Muriel; and 4th, with the same; 5th, Mr. A. J. Sanders, with Zerlina. Light Purple Edged: 1st, Mr. M. Rowan, with Clara Penson; 2nd, Mr. H. W. Headland, with Pride of Leyton; 3rd, Mr. J. Douglas, with Her Majesty, and 4th, with Sylvia; 5th, Mr. W. J. Nicholls, with Pride of Leyton. Heavy Rose Edged: 1st, Mr. C. Turner, with Madeline; 2nd, Mr. J. Douglas, with Mrs. Payne, and 3rd, with Constance Heron; 4th, Mr. C. Phillips, with Mrs. Ricardo; 5th, Mr. W. J. Nicholls, with Mrs. Sharpe. Light Rose Edged: 1st and 2nd, Mr. J. Douglas, with Favourite; 3rd, Mr. H. W. Headland, with the same; 4th, Mr. R. Sydenham, with Mr. Geggie; and 5th, Mr. C. Phillips, with Favourite.

The Premier Picotee was Liddington Favourite, shown by Mr. J. Douglas.

Yellow Grounds.—Of these some very fine blooms were staged. The best twelve came from Mr. C. Turner, who had Annie Douglas, Janira, Dorothy, Almira, Agnes Chambers, and seedlings; Mr. J. Douglas was 2nd, with Mrs. Whitbourn, Agnes Chambers, and seedlings; 3rd, Mr. H. Hooper, Vine Nursery, Bath, with Star of Bath, Mr. Little, Duchess of Albany, Sparkler, Agnes Chambers, and seedlings. Mr. G. Hooper, Bath, had the best six varieties, staging Mrs. Little, Star of Bath, Agnes Chambers, Sparkler, Alice Brooks, and Duchess of Albany. 2nd, Mr. G. Chaundy, with Alfred Grey, very fine; Nancy Tournament, and seedlings. 3rd, Mr. F. Nutt, Gloucester Villas, Southampton.

Selfs and Fancies.—These were a great feature also. There were five collections of twenty-four blooms, Mr. C. Turner being placed 1st, with a very fine lot, including Mary Morris, Anna Benary, white flaked with rose; Germania, very fine; Colonial Beauty, Mrs. Reynolds Hole, Sunset, yellow ground; Rose Celestial, Victory, yellow ground, very fine; Duchess of Connaught, Purple Emperor, Ruby, Terra Cotta, and Lady Rose Molyneaux, white; 2nd, Mr. J. Douglas, with Mrs. Reynolds Hole, Orlando, white; Elaine, white; and seedlings. Mr. G. Chaundy had the best twelve, having the Major, Queen of the West, pink; Mrs. Champness, Mrs. R. Hole, Beauty, and seedlings; 2nd, Mr. C. Phillips, with some very fine run flowers; 3rd, Mr. M. Rowan.

Plants in Pots.—Mr. C. Turner was 1st, with twelve finely-grown and flowered specimens; Mr. J. Douglas, 2nd; and Mr. H. W. Headland, 3rd.

Certain prizes were offered for seedlings, but no awards were made for Carnations or Picotees. Mr. J. Douglas was awarded 1st and 2nd prizes for a pure yellow seedling with a light edging of red, and a Certificate of Merit was also awarded to it, but it was not named. Certificates of Merit were also awarded to Mr. C. Turner, for Victory, buff ground heavily flaked with orange-red; and to Sunset, buff ground with edging of crimson and slate—both large and very full flowers.



Fig. 18.—Actiniopteris radiata. (see p. 108.)

Fern Conference.

We now turn to the collections of Ferns, excluding for the present the varieties of British species which are separately dealt with lower down.

Messrs. W. & J. Birkenhead, Sale, near Manchester, had a very fine collection, embracing all sections named in the schedule, and, although not remarkable for the size of the plants, their variety and rarity placed the collection in a high place. There were some 600 varieties, all finely cultivated; and the Filmy Ferns were a feature, these being specialties of the firm. Of the plants shown, about 100 were Adiantums, and the majority of the popular varieties were represented, among them being O'Brienianum, Mariesii, Wiegandii, and A. manuatum a new form, which is intermediate in general appearance between gracillimum and the ordinary cuneatum, also one allied to A. Flemingi, with curiously laciniate pinnæ, were noticeable. In Adiantum Feeii was seen a rare species, with small cuneate pinnæ, the rhachis and stipes brown, and densely clothed with short brown hairs; A. palmatum, a straggling plant, with rather large pinnæ; and A. Seemanni, somewhat resembling A. Kewianum, but more compact in the frond. The curious Asplenium Seelosii, with a 3-lobed frond borne about 2 or 3 inches high, was not decorative by any means. Of Gymnogrammas, the heavily-silvered G. peruviana argyrophylla was conspicuous, and it is the best of them too; G. schizophylla gloriosa is a very elegant form, and G. Muelleri, striking by reason of its large pinnæ, which are covered with a coarse brown scale. G. Pearcei robusta is another elegant form, with finely cut fronds, and is more erect. Of Davallias there were tenuifolia stricta, D. parvula, D. fijiensis,

and D. f. plumosa, all good examples, and also the thorny D. aculeata. There were several Lygodiums, the best being L. dichotoma and L. japonica, which is usually known as L. scandens. In Hypolepis anthurcifolia is a very elegant Fern, and the curious Actinopteris radiata, of which we publish a representation on p. 107, was also included. Lomaria L'Herminierii was shown as a tree Fern about 1 foot high, and the young inner leaves, being of a rosy tint, the plant was indeed an object of beauty. Cheilanthes were well shown, and a pan of C. pulchella, a rare species, was attractive. The plant is quite dwarf, and of a clear bright colour; but in C. californica we find one still more dwarf, and very compact, forming a pretty little tuft as it were. Then there was the Bear's-paw Fern, Aglaomorpha Meyeniana, with its large arching fronds of pale green. In Osmundas there were O. japonica cristata and O. palustris, evergreen, and pretty, on account of the rose-tinted stipes. Todea superba and T. grandipinnula were in perfect health, with several of the British Filmies. The violet-scented Lastred fragrans, which came in for a good share of notice, was well represented, and close by was the dense dwarf, and finely-divided Pteris scaberula. The vigorous North American Ferns were seen in good samples, and Struthiopteris germanica, Osmunda, Claytonia and Onoclea sensibilis may also be added. A few small examples of Selaginellas were staged, numbering about a dozen, S. cæsia, S. gracilis, and S. amœna being best represented. Along the back of the group, suspended on posts, were specimens of Platyceriums representing the species alcicorne, grande, Hilli, and Willincki.

The large display made by Messrs. J. Veitch & Sons, Chelsea, was one of the most interesting in regard to novelty of exhibits and numbers in the tent. There were, we believe, more than 250 species and varieties in the collection, and this included some of finest of the exotic, and a few native forms. On entering the tent one was brought up sharp by a group, of what at first sight appeared to be Todea pellucida, but which, on examination, proved to be a very remarkable lot of hybrids, and on referring to the label accompanying, they were described as forms which had been obtained by Messrs. Veitch by sowing spores of several different species mixed altogether. The plants, although of very different height and breadth, were all of the same age, and from the same pan of spores. The varieties show also great differences in form of the pinnules, length of frond, colour, and general habit. There were T. pellucida ferulacea, the secondary specific name from its fennel-like appearance; T. grandipinnula, T. superba, T. plumosa, &c. To the right, a long platform was in great part taken up with the main collection, from which we culled a few of the rarer and more striking plants. Thyrsopteris elegans, with the general characteristics of a Cibotium, is a rare Fern, with a singular form of fructification; the sori appearing on the pinnæ at the base of the fronds. The stipes are dark brown, and covered with soft brown hairs. It is a Fern of imposing appearance, the fronds, however, springing from a short root-stock, and not from a stem—at least in the specimen shown. Several forms of the favourite Lomaria gibba were noticed, viz, L. platyptera (Moore), with fronds less drooping than the type, and pinnæ wider apart, and also of a lighter shade of green. It was a barren plant, resulting from intermixture of the spores of L. gibba and Blechnum braziliense, and is in habit about intermediate between these. L. L'Herminieri, dwarf species from tropical America; several hybrids from spores of L. gibba, which differ greatly the one from the other, and from the parent, some having compound pinnæ, denser habit, or more arched fronds.

Doryopteris palmata is a nice-habited evergreen species, with palmate fronds on brown, slightly hairy stipes; it is getting common, and is sold in the shops for room decoration, for which purpose it is well adapted, notwithstanding its tropical origin. Adiantums were, of course, very numerous, but we saw nothing that was very novel, although of good things there was no scarcity. A. rubella is a pretty dwarf species, with bronzy-red young fronds. A. capillus-veneris grande, a variety with big pinnæ. It is a garden hybrid from Mr. Jannock, Dersingham; a good market Fern. A. cuneatum mundulum, a nice compact Fern with an apparent doubling of the pinnæ, which gives great density to it. A. c. gracillinum, a well-known form. A. Weigandii, A. c. Lambertianum, with very sparse pinnæ, and these markedly cuneate. Lastreas and Davallias were numerous and pretty, and we may mention of the former, L. patens superba (Chile), also two garden forms of it, L. lepida being an especially graceful form; L. Richardsii multifida, the frond covered with conglomeration of small crests. It is a robust Fern.

Davallias included alpina (Borneo) tenuifolia, and one of its varieties (Penang)—tenuifolia Veitchi, with very slender fronds, which are much divided, and the pinnæ very minute; Mooreana, a well-known species. These Davallias have creeping rhizomes, and are well adapted for forming many pretty devices in baskets, &c. Didymochtlæna trunculata is a handsome Fern, with a robust habit; Gymnogramma Pearcei robusta is a Fern of delicate light green, and 1 foot high.

Adiantopsis radiata has black stipes, palmate fronds horizontally poised—a fine Fern for a dinner table; Nephrolepis rufescens tripinnatifida illustrated in our columns in 1887, pp. 477 and 481; N. davalloides furcans. Marattia Cooperi (New Caledonia) is a strong growing plant, with palmate fronds, which are again subdivided; it is very distinct. Hymenodium crinitum (West Indies), broad undivided fronds, covered on both sides with black hairs a quarter of an inch long, set widely apart; Microlepia hirta cristata (South Sea Islands), very pretty species, of a light green colour; Gymnogramma schizophylla argentea (R. Veitch), is a prettily silvered species; a crested form of Woodwardia radicans cristata is a distinct variety of the well-known species; Polypodium crassinervum is a Fern with prominent nerves arranged in oblique lines across the Scolopendrium-like fronds. The collection of Platyceriums was a very complete one, and contained the species Hilli, Alcicorne, biforme Willinckii, Grande, and Stemmaria.

Messrs. Veitch showed, under the heading, "Curiosities in Ferns," many rare and interesting small-growing Ferns generally:—Adiantum asarifolium, Hymenodium crinitum, Polypodium lucidum, Asplenium attenuatum, Actiniopteris radiata var. australis (p. 107), Rhiphidopteris peltata gracillima, Meniscium simplex, Pellea Wrightiana, Heminitis cordata, Adiantum reniforme, Gymnogramma Muelleri, Nothochlæna nivea × trichomanoides, Doryopteris nobilis, Adiantum pumilum, Ceterach aureum, Lastrea fragans, &c.

Groups of supposed hybrids were likewise shown, both British and exotic, and included chiefly under Adiantum, Lomaria, Lastrea, Gymnogramma, Nephrolepis, Todea, Cyrtopodium, Dicksonia and Pteris serrulata. In the collection of exotic Ferns, considerable interest was infused by a capital group of abnormal varieties, crested and otherwise, showing the like capacity for forming crests, &c., as in the British. An interesting exhibit of Marattia developing from incipient buds on the old frond bases linked exotics again with our familiar wild Ferns, as Scolopendrim and other species reproduce themselves in a similar fashion.

Mr. H. B. May, Dyson's Lane Nursery, Upper Edmonton, N., contributed two collections of Ferns, both very extensive, and embracing the best and most popular species and varieties in the one group; the plants were arranged more or less in sections according to the schedule, whereas the other was a purely decorative arrangement, in which the varying colours and forms of the fronds were arranged for effect, and to display each other to the greatest advantage, and the endeavour must be recorded as a very successful one. It will be easier to take these two groups together, and to single out certain specimens, but we may at once say all the more popular and market Ferns were included, and the majority of others were only of small dimensions. The genus Adiantum was largely and well represented by such as Pacotii, Weigandi, &c., and the recent A. Versaillense, a sort of improved Luddemannii. The very numerous crested forms of Pteris cretica were well represented, and some of them were very elegant, and the forms Rex, densa, nobilis, and compacta, may be recommended for decorative purposes, and they are capable of standing well in an ordinary living-room, which is a strong point in their favour. Drynaria musæfolia was striking, and also Polypodium ingrescens, the decorative-looking Cheilanthes elegans, with others, and Gymnogrammas, both gold and silver, were good examples, especially G. schizophylla gloriosa. Nothoclæna nevia is another worthy of note. Lomaria discolor bipinnatifida was an elegant specimen, and Woodwardia orientalis, with its fronds laden with young plants attracted considerable notice from the visitors. But of all the plants included in the group, Nephrolepis plumosa and N. davalloides with their bold fronds and bright light green colouring were among the most attractive; but perhaps the elegance of form of the Davallias should secure them a place here, all the best and popular species being well shown. Microlepia platyphylla and several Cyrtomiums may be also named; among the latter being C. falcatum and its variety C. f. caryotideum, very vigorous and larger than the type, and C. f. Fortunei was also included. Several specimens of Platycerium grande and alcicorne were placed in the background of the decorative group, and added much to the general effect.

The only amateur who exhibited a general collection in these classes was J. A. Whittard, Esq., Royal Mount, Streatham Hill, S.E. (gr. Mr. H. Wright), and he showed an extensive collection of well-grown and fairly large plants. This collection included only well-known species and varieties; a plant of Adiantum Farleyense was, perhaps, as conspicuous as anything, and the good examples of the same genus were seen in A. Wrightii, A. gracillimum, A. Pacotti, A. macrophyllum, and A. cultratum. Platycerium grande was a really fine piece; and others were Gymnogramma schizophylla gloriosa, G. Alstoni, and G. Wattenhallianum, Doryopteris palmata, D. nobilis, and Dictyogramma japonica variegata. Davallias were good, the specimen of D. fijiensis plumosa being finely grown; and D. Tyermanni was also a good plant.

British Varieties.

It is undeniable that the Conference announcement had the effect of bringing together one of the most interesting collections of both British and exotic Ferns which has been seen, at any rate in this generation, in London. In the former class, though there were only three exhibitors, the immense range of variation of one indigenous Fern was very adequately exemplified, and fairly represented, from three different and distinct points of view. Mr. E. J. Lowe's collection of nearly 200 varieties, embodying a large proportion of new forms arrived at by hybridisation; that of Mr. C. T. Druery, of about one hundred, embracing a considerable number of his own wild finds, and some charming new plumose Athyria of the most diverse character, raised simply by select culture without crossing; and finally, a collection shown by Messrs. Birkenhead, forming a fair representation of the finest varieties in trade hands. To take Mr. Lowe's collection first, we find it characterised, first and foremost, by the vigorous healthy growth and huge size of the majority of the specimens exhibited, most of which have been grown on into veritable bushes, which, in the case of some of the Scolopendriums, of the crispum or frilled series, certainly enhances their decorative character. In some of the Athyria, however, much of the individuality is lost by permitting this multiplication of crowns, the intermingling of the innumerable fronds detracting from their beauty. The advantage of single crown cultivation is seen very markedly in several of Mr. Lowe's exhibits of Polystichum angulare, two of which, P. a. divisilobum plumosum densum and P. a. Baldwinii, certainly rank as the two finest forms extant of all the British Ferns, the former surpassing even Todea superba in the density and featheriness of its finely dissected fronds, while the latter, though a smaller plant, has manifestly gone a step further, and will eventually outstrip its fellows on the same lines. Both these belong to the wonderfully beautiful strain originated by Colonel Jones and Dr. Fox. Among Mr. Lowe's own hybrids, whose name is legion, decidedly the most noteworthy are to be found in his crosses of Scolopendrium vulgare, the chief of which, display so clearly to the eye of an expert the combined characters of no less than four parental forms, that confirmation of the raiser's register was quite needless. In one form is plainly seen S. v. spirale, which gives a spiral twist; S. v. undulatum, which gives extra size and its peculiar wavy character; S. v. muricatum, which covers the surface with its file-like ridges; and finally, S. v. Keratoides, which stamps its features upon its offspring most unmistakeably by fronding its characteristic crests. In the same batch of seedlings are various equally convincing examples of two and three of the same parental forms in combination, making up a most interesting group from the hybridist point of view, if not from that of the stickler for beauty. In connection with this point, since it is obvious that in the hands of such a successful raiser as Mr. Lowe has proved himself to be, the possibilities of varying the form are infinite, it is equally clear that unless some definite line of improvement be adopted and strictly adhered to, the good forms will inevitably be swamped and swallowed up by a countless horde of monstrosities. So far hybridisation in Ferns has been in its experimental stage, and hence such unde-

niable crosses as those in question are valuable as convincing proofs of what can be done. Let them, then, be accepted as such, but draw the line there, and henceforth sow in the faith born of these successes, simply and solely with a view to greater beauty, consigning all inferior or ugly forms ruthlessly to the dustheap, just as our florists do their worthless seedlings. Among the *élite* of Mr. Lowe's plants we noticed a decided step in the right direction in some bright yellow variegated Scolopendriums of various forms, the colour having been transmitted to fine varieties from common plants, distinguished only by their yellow tint. A tasselled Polystichum angulare had also a pretty white variegation introduced by crossing, which obviously opens up a wide field for work in the right, *i e*, the decorative direction. Our remarks anent rigorous selection apply with no less force to the Athyria here exhibited, which in many cases are distinctly inferior to either parents, possessing neither symmetry of growth nor beauty of detail. Another point in this connection, and, indeed, the most important of all, is the careful selection of the parents. A number of fine hybrid forms, already raised, suffer much in value for lack of this foresight, imperfections being almost invariably transmitted. In Mr. Druery's collection, one of the main features was the number of representative varieties of the Hardy Fern, or Blechnum spicant. One specimen, B. s. plumosum Airey, attracting much attention by its immense developments.

Among the wild kinds discovered by the exhibitor were B. s. concinnum, a curiously narrowed form, like a string of scallop shells, a bold-growing, crested Lastrea montana cristata gracilis, a curiously tailed and variegated Asplenium adiantum nigrum (caudifolium), a corymbiferously-crested Scolopendrium, and several minor varieties, mostly found on the moors of Devon and Somerset. Two plants of S. v. crispum (Wills), with finely frilled fronds, full 5 inches across, were worthy of note, as representing the finest form yet found. A group of Athyriums, representing selective culture from the beautiful point of view, was much admired, four generations, beginning with the wild find of the Axminster plumosum being *en evidence*. A. ff. plumosum elegans, (Parsons) was the first break under cultivation; this yielded a very beautifully crested plumose form, shown as A. ff. plumosum superbum, through which a wide range of very charming plumose forms, both plain and crested, was represented by some nine different perfect forms; these, and perhaps half-a-dozen others, constituting the *élite* of over 120 seedlings. Close to these a huge specimen of Lastrea pseudo-mas cristata displayed the capacity of this species to form a veritable Tree Fern on the single-crown principle. Among the exhibits were A. ff. clarissima and Polystichum angulare pulcherimum (Wills), two examples of aposporous Ferns, in which prothalli are produced on the backs of the fronds and tips of the divisions respectively, instead of from the spores.

Messrs. Birkenhead's specialties in British Ferns embraced a most curious depauperate and lax and crested variety of the common Brake (Pteris aquilina grandiceps pendens), which originated spontaneously in their fernery; some very finely crested forms of A. ff. setigerum, a new form of Lastrea œmula (densa), and a number of the best varieties in commerce.

The awards made were as follows:—

Medals.

Gold to Messrs. W. & J. Birkenhead, and to Messrs. J. Veitch & Sons.

Silver-gilt Flora to Mr. H. B. May, and to C. T. Druery, Esq., and a Silver Flora to J. A. Whallatt, Esq.

Amateurs' Competition.

The Silver Challenge Cup, offered by N. N. Sherwood, Esq., for the best collection of Hardy Ferns, was awarded to E. J. Lowe, Esq.

There was no competition for the Cup offered by D. Morris, Esq, for Hardy Filmy Ferns, grown without heat.

Certificates of Merit.

Athyrium filix-fœmina stellatum angustatum, A. f. f. percristatum J. S. Cousins, A. f. f. plumosum superbum, from C. T. Druery, Esq.

Blechnum spicant ramo-cristatum, B. s. concinnum, B. s. plumosum (Airey), from C. T. Druery, Esq.

Scolopendrium vulgare var. crispum (Wills), from C. T. Druery, Esq.

Trichomanes radicans var. crispum cristatum' from E. J. Lowe, Esq.

Adiantum Capillus-vineris var. autumnale, from E. J. Lowe, Esq.

Nephrodium paleaceum pendens, N. p. cristatum globosum, from E. J. Lowe, Esq.

Aspidium angulare vars. plumosum foliosum, polydactylum variegatum, latifolium grandiceps, remoto-decurrens, divisilobum plumosum, flabellipinnulum, decompositum frondosum, plumosum coronare, divisilobum plumosum imbricatum; aculeatum var. pulcherrimum, var. Abbottæ, from E. J. Lowe, Esq.

A. a. d. p. Baldwinii, from J. L. Baldwin, Esq.

Nephrodium spinulosum var. spectabile, from E. J. Lowe, Esq.

Aspidium aculeatum hybridum, and A. Nepos, from E. J. Lowe, Esq.

Scolopendrium vulgare (undulatum) synthesina, from E. J. Lowe, Esq.

Aspidium angulare plumosum, from E. J. Lowe, Esq.

Scolopendrium vulgare undulatum muricate spirale, S. c. reflexum, S. c. grandiceps, S. c. Cowburnii, S. c. robustum, S. c. augustum, S. variegatum aureolum, S. v. luminare, S. projectum princeps, S. p. capitatum, S. peraforum rosetta, S. inæquale cristatum pericallis, S. ramosum Alexandræ, from E. J. Lowe, Esq.

Asplenium filix-fœmina cruciatum columnare, A. calomelanos, A. Victoriaea, A. gracile, A. uncum cruciatum, A. cristatum magnificum, A. grandiceps coronare, from E. J. Lowe, Esq.

Todea pellucida ferulacea, from Messrs. J. Veitch & Sons.

Pteris serrulata cristata parvula, from Messrs. J. Veitch & Sons.

Scolopendrium crispum fimbriatum lutescens, S. grandiceps fimbriatum, S. crispum fimbriatum cristatum, from H. Stansfield & Co.

Gymnogramma chrysophylla var. grandiceps superba, from Mr. H. B. May.

Pteris aquilina depauperata grandiceps pendens, from Messrs. W. & J. Birkenhead.

Athyrium filix-fœmina setigerum percristatum, and A. f.-f. Frizilliæ coronare, from Messrs. W. & J. Birkenhead.

Adiantum manuatum, from Messrs. W. & J. Birkenhead.

Polystichum angulare var. pulcherrimum (Wills), from C. T. Druery, Esq.

Lastræa montana var. cristata gracile, from C. T. Druery, Esq.

Dicksonia (hybrid) Lathami, from Mr. W. B. Latham.

NATIONAL ROSE.

The provincial show of the National Rose Society, held in the Botanic Gardens, Birmingham, on the 17th inst., was considered by Rose growers to be one of the best provincial exhibitions the Society has held. Mr. Latham had cleared the stages in the new conservatory and Palm-house, and in the former, several stages were erected in the middle, and sufficient plants employed to form a green background to the show of flowers. Sixty leading growers competed in the various classes, which in all cases were well filled, many very excellent stands failing to win anything for their owners. The arrangements made for the exhibition were good, and the judges got to work in good time. The flowers generally were of first-rate quality, the colours bright, the blooms not too large, and the Tea-scented Roses were superb, and there was plenty of them. Messrs. Harkness & Sons, Bedale, scored heavily, and won the trophy prize in the Jubilee class for thirty-six blooms, for the fourth or fifth consecutive year, with twelve exhibits against them. The Cranston Nursery Co. were 2nd; Messrs. A. Dicksons & Sons, Newtownards, 3rd.

In the class for seventy-two blooms, with fine exhibits, Messrs. Harkness & Sons were again well to the front with a superb lot; The Cranston's Nursery Company were 2nd; Mr. B. R. Cant, 3rd.

In the other open classes, the above-named exhibitors were successful, with Mr. H. Merryweather, Southwell, a capital 1st, for thirty-six blooms, and 2nd for eighteen trebles; and Messrs. Jeffries & Sons, Cirencester, 1st for eighteen trebles. All the open classes were well-filled, and throughout the blooms were good.

In the amateur class for the Jubilee and Trophy prize, the Rev. J. H. Pemberton, Havering-atte-Bower, was 1st, with a very fine lot, having eight other competitors against him; and the same exhibitor took the 1st prizes for thirty-six singles and twelve trebles in each class for amateur growers. Other successful amateur exhibitors were — Mr. E. B. Lendill, the Rev. Hugh A. Berners, Mr. S. P. Budd, Mr. Arthur Whittow, the Rev. H. Foster-Melliar, Mr. E. Mawley, Rev. F. P. Roberts, and the Rev. F. S. Taylor.

A very handsome Silver Cup, presented by the Right Hon. Joseph Chamberlain, M.P., for thirty-six blooms, for amateurs, was won by the Rev. J. H. Pemberton; and Lord Calthorpe's Silver Cup, presented for a collection of Moss Roses, was well won by Mr. T. W. Girdlestone, with a tastefully set up lot of many varieties. The bouquets of Roses shown by ladies were generally excellent.

Teas and Noisettes.—These were in great numbers, and exceedingly beautiful, and fine fresh blooms. The competition was keen and heavy throughout. Messrs. Harkness & Sons took 1st for twelve trebles, and 2nd for eighteen single blooms. Mr. George Prince, Oxford, was 1st for eighteen; and Mr. Henry Merryweather was 1st for twelve, and other nurserymen exhibited largely.

In the amateurs' class for Teas and Noisettes, the Rev. F. R. Burnside was 1st for twelve; and Mr. W. Whittle 1st for six. Thirty-six stands of Tea Roses were staged for competition by amateurs.

For twelve new Roses, always an interesting class, Messrs. Paul & Son, Cheshunt, was 1st with H. P. Jules Dispond, a flower giving considerable promise of being an acquisition; John D. Pawle, Comtesse B. de Blacus, Lady Alice, Ernest Metz, a fine Tea; Souvenir de G. N. Prince, Edouard Michel, Marie Margot, Mrs. James Wilson, a promising Tea; Lady Arthur Hill, Scipion Cochet, and Dowager Duchess of Marlborough. The 2nd prize was won by Messrs. Dickson & Sons, Newtownards, and in this stand there were fine blooms of Duchess of Albany, and T. W. Girdlestone; 3rd, Mr. B. R. Cant.

The classes for yellow Roses, white, crimson, and dark crimson, twelve blooms of each, were well filled. The best yellow was Madame van Houtte, the best white Innocente Pirola, the best crimson Alfred Colomb.

A Gold Medal was to be awarded to the best seedling (three blooms) not yet in commerce. The Newtownards firm, Messrs. Dickson & Sons, won this easily, with their grand Margaret Dickson, fine white flowers; Messrs. Paul & Sons, Cheshunt, sent blooms of Mr. Paul (Bourbon), and H.P., T. B. Hayward; and Mr. Swailes, nurseryman, Beverley, blooms of Mrs. Arthur Wilson.

Nearly 190 stands were staged in competition in the various classes, and varieties of Teas were fine everywhere, notably Comtesse de Nadaillac, Souvenir d'un Ami, Madame Cusin (some examples of this variety very rich in colour); Catherine Mermet, Madame de Watteville, in some instances very bright in colour; Luciola, very rich in orange tint; Francisca Kruger, Souvenir d'Elise Vardon, Marie van Houtte, Ethel Brownlow, Edith Gifford, Triumphe de la Reine, very fine; Innocente Pirola, Etoile de Lyon, Jean Ducher, The Bride, and Souvenir de Thérèse Levet, a lovely crimson carmine, with white at the base of each petal.

Amongst H.P.'s, Her Majesty, Mrs. John Laing, and Ulrich Brunner were numerous and in superb style, and many other varieties could be mentioned. There was a lovely bloom of Lady Helen Stewart in Mr. Pemberton's stand, also of Comte de Raimbaud, and a grand bloom of Victor Hugo. *W. D.*

MANCHESTER BOTANICAL AND HORTICULTURAL.

An excellent show of Roses, accompanied by fine weather, was seen at Manchester on July 19. The northern flowers were fresh and bright, whilst those from southern localities had suffered more or less from excessive rainfall.

Nurserymen's Classes.—Seven stands were staged of seventy-two varieties each, in single trusses. Messrs. Harkness & Son, Bedale, took the 1st prize, with a very fine and brilliant lot of the favourite varieties, and the Tea-scented varieties in particular were very fine; the English Flower and Fruit Company, Hereford, were 2nd, with very fine blooms, somewhat damaged by rain.

Thirty-six varieties, three trusses of each, brought a keen competition. The Hereford firm was placed 1st, and Messrs. Prior & Co., Colchester, were 2nd, the varieties in each instance being those usually found in show stands.

Teas and Noisettes.—The classes for these brought

some very fine blooms, and in that for eighteen varieties, three trusses of each, Messrs. Harkness & Sons were again 1st, with a very fine lot of flowers indeed, clean, and finely coloured; and 2nd, Mr. B. R. Cant.

In that for twelve Teas and Noisettes, single blooms, Mr. B. R. Cant was 1st with capital flowers.

The best twelve trusses of any yellow Rose, were Francisca Kruger, from the Cranston Company; Mr. B. R. Cant was 2nd, with Marie van Houtte. The best twelve blooms of any white Rose was Niphetos, from Messrs. Prior & Co.; Messrs. Harkness & Son, being 2nd with Merveille de Lyon. The best twelve blooms of any crimson Rose was Alfred Colomb, from the Cranston Company; Messrs. Paul & Son being 2nd with A. K. Williams.

Bouquets of Roses.—Messrs. Perkins & Son, of Coventry, were the only exhibitors of three bouquets of Roses, and were awarded the 1st prize.

Amateurs' Classes.—The best thirty-six varieties, single trusses, came from the Rev. J. H. Pemberton, Romford.

The best twelve varieties of three trusses each, came from the Rev. J. H. Pemberton.

The Rev. F. R. Burnside, Hereford, had the best twelve Teas and Noisettes, three blooms of each.

The Rev. F. R. Burnside also had the best twelve Teas and Noisettes, having Souvenir de Thérèse Levet, so bright in colour as to suggest that an H.P. had got into the stand by mistake.

The best twelve blooms of any white Rose were Innocente Pirola, from the Rev. F. R. Burnside.

The Rev. J. H. Pemberton had the best twelve blooms of any crimson Rose, showing fine Ulrich Brunner; Mr. Samuel Barlow, Stakehill House, was 2nd, with Marie Baumann.

The best three bouquets of Roses came from Mr. Geo. Wilkes, gr. to Messrs. Lord, Ashton-on-Mersey.

Prizes were offered for district grown Roses, the competition open only to residents within 20 miles of Manchester. Mr. Tatham, Wilmslow, had the best twenty-four. Some very good flowers for the district were shown in these classes.

A First-class Certificate of Merit was awarded to Messrs. Paul & Son, for Bourbon Rose Mrs. Paul.

Extra prizes were awarded to Messrs. Dickson, Brown, and Tait, Manchester, for a collection of hardy cut flowers, Roses, &c.; to Messrs. Dickson and Brown, Manchester, for the same, including a fine lot of cut blooms of Carnations; to Messrs. Dicksons (Limited), Chester, for cut flowers of hardy plants in fine bunches; to Messrs. Clibran & Son, Altrincham, for Calceolarias in pots, a very fine lot of cut blooms of Begonias and Clematis; to Mr. Henry Eckford, Wem, for a collection of bunches of cut blooms of Sweet Peas; and to Mr. Samuel Barlow, for a very interesting collection of hardy cut flowers, bunches of pretty garden Roses, and a fine spike of Phormium tenax variegatum cut in the open air in North Wales.

HAMMERSMITH HORTICULTURAL.

THE annual exhibition was held on the 17th inst. In the gardeners' class for a group of plants, the 1st prize was awarded to Mr. Addison, gr. to Mrs. Lloyd, Merton Lodge, Chiswick. In the amateurs' division the 1st prize and the "Banksian" Medal of the Royal Horticultural Society was awarded to Mr. Bromley, 17, Miles Street, Hammersmith, for a group arranged with good taste. The prize offered by Messrs. Sutton & Sons, Reading, for a collection of various kinds of vegetables, was gained by Mr. J. J. Stickler, a railway porter at Gunnersbury Station, with a very creditable lot. Mr. M. T. May, gr. to the Marquis of Bute, Chiswick House, sent a very beautiful group of foliage and flowering plants, but these were not sent to compete with others.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending July 19, is furnished from the Meteorological Office:—

"The *weather* after a temporary improvement over England during the first half of the week, again fell into a very unsettled and changeable condition generally. During the night of the 17th—18th, severe thunderstorms and extremely heavy rains were experienced over the more southern parts of England, and on the 19th, further heavy falls occurred, especially over the eastern parts of Norfolk.

"The *temperature* has again been below the mean, but the deficit has been much less than that of last week, ranging only from 1° in 'England, E.' and 'S.,' to 2° or 3° in most other districts. The highest of the maxima, which were recorded on the 13th over the northern parts of the kingdom, and on the 16th elsewhere, varied from 64° in 'Scotland, N.,' to 75° in 'England, E.,' and the 'Midland Counties,' and 76° in 'England, S.' The lowest of the minima were registered on somewhat irregular dates, and ranged from 36° in Ireland, N.,' 37° in 'Scotland, N.,' and 40° in 'Scotland, E.,' to 48° in 'England, E.,' and 'N.W.,' and to 53° in the 'Channel Islands.'

"The *rainfall* has been rather less than the mean in Ireland, 'England, N.E.,' 'Scotland, W.,' and 'England, N.W.;' in all other districts, however, an excess is shown, that in 'England, E.,' 'England, S.,' and the 'Channel Islands' being very large. The fall during the evening and night of the 17th amounted to more than 1·5 inch at several of our southern stations; in London, 1·8 inch was measured; at Southampton, 2·1 inches; and at Rothamsted, 2·5 inches. Still larger amounts are reported by the newspapers as having fallen in the western and northern suburbs of London.

"*Bright sunshine* has again been very little prevalent generally, but shows a decided increase over Ireland. The percentage of the possible amount ranged from 23 in 'Scotland, N.,' to 39 in 'Scotland, W.,' and 41 in 'Ireland, S.'"

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (−) the Mean for the week ending July 19.	Accumulated. Above 42° for the Week.	Accumulated. Below 42° for the Week.	Accumulated. Above 42°, difference from Mean since Jan. 1, 1890.	Accumulated. Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (−) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1890.	Rainfall. Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1890.
		Day-deg	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	3 —	69	0	+ 67	— 72	4 +	149	26.5	23	25
2	2 —	90	0	— 47	— 58	0 av.	121	16.5	27	29
3	2 —	110	0	— 33	— 93	1 —	102	12.1	27	27
4	1 —	133	0	— 61	— 39	16 +	109	14.3	35	35
5	2 —	122	0	82	— 26	4 +	100	12.4	30	30
6	1 —	133	0	— 57	— 68	11 +	103	16.3	28	32
7	2 —	95	0	— 11	— 73	3 —	121	26.7	39	31
8	2 —	114	0	1 —	81	2 —	113	16.8	30	29
9	3 —	109	0	59 +	12	6 +	119	20.8	25	34
10	3 —	98	0	— 26	— 55	1 —	131	17.0	35	31
11	3 —	106	0	— 16	— 14	1 —	131	23.3	41	33
12	2 —	122	0	+ 43	— 22	12 +	124	20.3	30	40

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

MARKETS.

COVENT GARDEN, July 24.

OUR market has been heavily supplied this week with soft fruit, and prices, with a brisk trade, are slightly lower. Cherries are arriving in bad condition; Strawberries are falling off in quantity; and indoor goods are more than equal to the demand. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6-	7 0	Lemons, per case	12 0-	20 0
— Tasmanian, case	15 0-	20 0	Melons, each	1 6-	3 0
Cherries, ½-sieve	1 6-	6 0	Peaches, dozen	2 0-	10 0
Currants, red, ½-sieve	3 0-	5 0	Pine-app'es, St. Michael, each	2 0	6 0
— black, ½-sieve	4 9-	5 0			
Grapes, lb	0 9-	3 0	Strawberries, lb.	0 2-	0 9

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichs., Globe, each	0 4-	...	Mustard and Cress, punnet	...	0 4- ...
Beans, French, lb.	8 0-	...	Onions, per bunch	...	0 5- ...
Beet, red, per dozen	1 0-	2 0	Peas, per quart	...	1 0- ...
Carrots, per bunch	0 6-	...	Parsley, per bunch	...	0 6- ...
Cauliflowers, each	0 3-	...	Shallots, per lb.	...	0 6- ...
Celery, per bundle	1 6-	2 0	Spinach, per bushel	...	3 0- ...
Cucumbers, each	0 6-	1 0	Sprue, per bundle	...	1 6- ...
Endive, per dozen	2 0-	...	Tomatos, per lb.	...	1 0- ...
Herbs, per bunch	0 4-	...	Turnips, per bunch, new	...	0 4- ...
Lettuces, per dozen	1 6-	...			
Mushrooms, punnet	1 6-	...			

POTATOS.—Since last report the supply of home-grown Potatos has increased very much. The demand is good, and prices are firm. The warm weather is rather against a continuance of the present firm prices. *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	18 0	Fuchsia, per doz.	4 0-	9 0
Arum Lilies, per doz.	8 0-	12 0	Heliotrope, per doz.	5 0-	8 0
Aspidistra, doz.	18 0-	42 0	Hydrangeas, doz.	6 0-	18 0
— speci. plants, each	7 6-	10 6	Ivy Pelargonium, per dozen	3 0-	6 0
Begonias, per doz.	6 0-	18 0	Liliums, various, per dozen	18 0-	36 0
Cactus, per doz.	4 0-	12 0	Lobelia, per doz.	3 0-	6 0
Calceolaria, p. doz.	4 0-	9 0	Marguerites, doz.	6 0-	12 0
Cyperus, per dozen	4 0-	12 0	Mignonette, per doz.	3 0-	6 0
Dracæna terminalis, per dozen	30 0-	60 0	Musk, per dozen	1 6-	3 0
— viridis, per doz.	12 0	24 0	Nasturtiums, p. doz.	4 0-	6 0
Euonymus, in var., per dozen	6 0	18 0	Palms in var., each	2 6-	21 0
Evergreens, in var., per dozen	6 0-	24 0	Pelargoniums, scarlet, per dozen	3 0-	6 0
Ericas, various, doz.	8 0-	24 0	— per doz.	6 0-	12 0
Ferns, in var., doz	4 0-	18 0	Petunias, per doz.	6 0-	9 0
Ficus elastica, each	1 6-	7 0	Roses, various, doz.	12 0-	24 0
Foliage plants, various, each	2 0-	10 0	Saxifrages, per doz.	18 0-	24 0

*** Bedding plants in variety in boxes, and also in pots.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0-	4 0	Pelargoniums, scarlet, 12 spr.	0 3-	0 6
Bouvardias, per bun.	0 6-	1 0	— dozen sprays	0 6-	1 0
Callæthiopica, 12 bl.	3 0-	5 0	Primulas, double, 12 sprays	0 9-	1 0
Carnations, 12 blms.	1 0-	2 0	Pansy, or Heartsease, 12 bunches	1 0-	2 0
— 12 bunches	4 0-	6 0	Poppies, various, doz. bunches	1 0-	2 6
Cornflower, 12 bun.	1 6-	3 0	Pyrethrum, 12 bun.	3 0-	6 0
Eschscholtzia, 12 bn.	2 0-	3 0	Roses, Tea, per doz.	0 6-	1 6
Eucharis, per dozen	4 0-	6 0	— coloured, dozen	1 0-	1 6
Gardenias, 12 blooms	2 0-	4 0	— red, per 12 bun.	2 0-	6 0
Iris, various, 12 bun.	6 0-	18 0	— Safrano, dozen	1 0-	2 0
Heliotropes, 12 spr.	0 6-	1 0	— outdoor, 12 bun.	1 0-	3 0
Lilium, var., 12 bl.	0 6-	4 0	Stephanotis, 12 spr.	1 6-	3 0
Maiden Hair Fern, do	4 0-	9 0	Sultan, 12 bunches	3 0-	4 0
Marguerites, 12 bun.	3 0-	6 0	Tuberoses, 12 blms.	0 3-	0 6
Mignonette, 12 bun.	2 0-	4 0			
Myosotis or Forget-me-nots, 12 bun.	2 0-	4 0			
Pinks, various, 12 bn.	3 0-	6 0			

ORCHID-BLOOM in variety.

SEEDS.

LONDON: *July* 23.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, write that the chief interest now attaches itself to the successive appearance of various samples of seeds of this year's growth. New Rape seed has come to hand at moderate figures. Sowing Mustard is both good and cheap. Some handsome new Trefoil seed has this week been shown. New winter Tares will soon be ready for delivery. Choice blue Peas have become almost unobtainable. For Hemp and Canary seed the trade is slow. Other articles at this quiet season offer no subject for comment.

FRUIT AND VEGETABLES.

STRATFORD: *July* 23.—The supply has been good during the past week, and a fair trade done at the undermentioned prices:—Cabbages, 2*s.* to 5*s.* per tally; Mangels, 13*s.* to 18*s.* per ton; Onions, Egyptian, 7*s.* to 8*s.* per cwt.; Watercress, 7*d.* per dozen; Green Peas, 3*s.* to 5*s.* per bag; Broad Beans, 1*s.* 6*d.* per sieve, 2*s.* 6*d.* per basket; Turnips, 1*s.* to 2*s.* 6*d.* per dozen bunches; Black Currants, 5*s.* to 5*s.* 6*d.* per half-sieve; red do., 4*s.* 6*d.* to 5*s.* do.; Gooseberries, 2*s.* 6*d.* to to 3*s.* 6*d.* do.; Cucumbers, 1*s.* to 1*s.* 6*d.* per dozen; Strawberries, 1*s.* 6*d.* to 2*s.* 6*d.* per peck; Tomatos, 7*d.* to 9*d.* per box.

POTATOS.

BOROUGH AND SPITALFIELDS: *July* 22.—Quotations:—Jersey kidneys, 90*s.* to 110*s.*; do. rounds, 89*s.* to 110*s.*; home grown, Myatts', 83*s.* to 95*s.*; do. Hebrons, 60*s.* to 90*s.* per do.; Magnums, 50*s.* to 70*s.* per ton.

STRATFORD: *July* 23.—Quotations:—Hebrons, 50*s.* to 80*s.*; kidneys, 90*s.* to 110*s.*; Regents, 90*s.* to 110*s.* per ton.

SPITALFIELDS: *July* 23.—Quotations:—Myatt's kidneys, 4*s.* 6*d.* to 5*s.*; Regents, 3*s.* 6*d.* to 4*s.*; Imperators, 4*s.* to 5*s.*; Hebrons, 2*s.* 6*d.* to 5*s.*; Early Rose, 2*s.* 6*d.* to 2*s.* 9*d.* per cwt.

NOTICES TO CORRESPONDENTS.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

American Fruit Evaporators: *E. W. B.* Abstracts are allowable, or better still—follow the plan you propose.

Bees and Grapes: *H. B. C.* A hive of bees in a Muscat-house might effect some good in setting the flowers of the Vines, and some harm too, by mutilating the same; but, as Muscats can be set well enough by ordinary means, why introduce these troublesome creatures at all.

Burning Rubbish in Orchards: *E. W. B.* Sorry we cannot help you. The practice is commonly followed in the French vineyards.

Carnation Seedlings: *C. A. M. C.* In the present state of the bloom, it is not possible to say if it be worth keeping. Propagate it by layers; plant it in good soil, and thin out the flowers, when it would come in better form, and send it again to us.

Chrysanthemums: *W. G.* It would be better if you would get a manual on Chrysanthemum growing—say, Molyneux's *Chrysanthemums and their Culture*, published at 171, Fleet Street. You would therein find all that you want to know, without the delay that accompanies the publication of serial articles in a gardening journal.

Cypripedium: *T. D.* The soil is full of fungus spawn, which may be injurious; at any rate, it indicates faulty cultivation.

Foxglove: *E. W.* The appearance of a regular flower on the end of the inflorescence of the Foxglove is not unusual, and is caused by the union of two or more flowers when in a very young state.

Freesias: *Ajax.* Ripen off the bulbs in the sun, and they will become fit for flowering next year. Seed should be sown as soon as gathered.

Herbaceous Borders: *G. S.* The subject is too long to be treated in this column. See our issues for November 3 and December 1, 8, and 29, vol. iv., for 1888.

Hollyhock Disease: *W. H. A.* We doubt very much if the state of the soil about the roots of the plants in regard to moisture has any important influence on the disease (Puccinia malvacearum). The disease attacks a great number of allied species of plants in various parts of Europe—Malva, Althea, Lavatera, Abutilon, Malope, &c.—and is capable of spreading, by means of its spores, from these to the garden Hollyhock. The fungus was well illustrated in the *Gardeners' Chronicle*, p. 617, September 11, 1882.

London Purple on Grapes having Thrips upon them; and Bisulphide of Carbon for Thrips and Red Spider: *H. B. C.* However advisable it may be to use either of these poisons on quite young fruits in the open air, where trees get washed repeatedly by rain and dew, and thus made safe for human consumption, their use in the forcing-house, for any purpose whatever, should be strictly forbidden. See our last few numbers for answers to your other questions.

Miscellaneous: *Enquirer, Trowbridge.* (1) To the Director of the Royal Gardens, Kew; (2) No; (3) Obviously by applying to the Secretary, 117, Victoria Street, S.W.; (4) It is not absolutely necessary, but the subscription is so low, that that need not prove an obstacle. See p. 3.

Names of Plants: *W. B.* Rosa lucida—*J. S.* 1, Hydrocotyle vulgaris; 2, Euphorbia esula—*Ajax.* 1, Solidago virga aurea, golden rod; 2, Goats' Beard, Tragopogon pratense; 4, Tradescantia virginica; 6, Hieracium aurantiacum; others withered beyond recognition.—*G. J.* Aërides virens variety.—*Camjee.* Davallia affinis, Pteris aquilina, Dendrobium transparens, Odontoglossum constrictum, Dendrobium Pierardi (yellow lip).—*G. M.-L.* 1, Gymnogramma tartarea; 2, Adiantum macrophyllum; 3, Anemidictyon phyllitides; 4, Dictyogramma japonica variegata; 5, Adiantum curvatum; 6, Doryopteris palmata.—*J. C. B.* Lælia purpurata, Odontoglossum citrosmum; both ordinary forms.—*F. S. M.* Oncidium longipes, probably (specimen insufficient).

Names of Fruits: *J. H. J.* Probably Eleanor.

Pea: *A. D.* The purple-podded Pea, much resembling the Marly Pea, French. The Pea has the defect of becoming brownish when cooked, like field Peas and all violet-flowered varieties. The pods, on the contrary, become green when cooked, and may be eaten when young.

Plum Grafted on a Cherry Stock: *W. A. W.* Plum and Cherry belong to the natural order Amygdalaceæ, but we much doubt if any permanent union could be obtained by putting Plums on Cherry stocks.

Proliferous Roses: *T. C. H.* Very common: a renewal of activity takes place at a period when, under ordinary circumstances, growth ceases. This, no doubt, is due to climatal conditions acting at a particular stage of the plant's growth. There is no "cure" for it. To the botanist such cases are very interesting.

Sand to Get Rid of Plantains, &c., on Lawns: *An Old Subscriber.* Watson's Lawn Sand, to be obtained of any horticultural sundriesman, and of some florists, will kill Plantains and Daisies, but it is an expensive remedy on large areas. If the big weeds are cut off below ground, and a pinch of salt put on the bared roots, these will die, and grass cover the place.

Spots on Dracæna Leaves: *L. F.* These are caused by Phyllosticta draconis, B. & W., a minute fungus found in Portugal, but not hitherto recorded in this country. Some of the species are destructive, and perhaps this. It would be prudent to pick off and burn all affected leaves, to prevent its spreading. *M. C. C.*

Trees: *J. Colebrook.* Plant Austrian Pine, Evergreen Oak, Norway Maples, Sycamore, Hornbeam, Beech, Crab, Sloe. As underwood Common Dogwood, Yew, Holly, Laurel, &c.

Vine Borders: *H. S. T.* Fish bones and shell refuse? Yes, but the shells should be calcined. The bones of fishes would be readily available as a manure, but less enduring in their effects than the bones of other creatures.

Walnut: *E. W. B.* Your proposal is a good one the lead simply throws off the water. You might fill the cavity with concrete as a hollow tooth is filled with gold.

Why are Drains Wanted in a Vine Border? *Inexperience.* A Vine border in our climate, if made of properly compacted soil, would, if undrained, or inefficiently drained, be more or less water-logged, and as a consequence remain in a condition too cold for the Vine, which would soon become unhealthy. A soil that is full of water has no space for air, either cold or warm, and it remains, therefore, practically unaërated, to the detriment of the roots, which require air like the leaves, if not in the same proportion. Given a properly drained border, it becomes warmed by summer rain, which imparts much of its heat to the soil in its passage from the surface to the drains. Moreover, when the water becomes absorbed by the Vines, or lost by descent to the drains, its place is taken by the air from the drains below and from above; and soil that is made warm by sunheat, or indirectly by warm rain, does not readily part with its heat. That is one advantage which a chambered Vine border offers over one not so constructed. To make the most of the drains beneath the border, there should be several large pipes inserted at the highest point, and going down to the chambers, or partitioned spaces, under the border. These pipes may stand 6 inches or 1 foot above the surface, and be fitted with close covers, to be kept on in warm weather, but opened after heavy rains, to assist in evaporating by aëration the excess of moisture in the lower parts of the border. In a border of this kind the flooring over the drains, which should slope to a main drain running along the front, should be made of loosely-jointed slabs of stone or slate, covered with 6 inches of rubble, over that a stratum of sound turves, and lastly the soil. It is an expensive border to make, but gives the best results, especially when the soil of the border is added as the roots extend.

Communications Received.—J. A.—E. J.—Rev. H. F.—M. A.—*Garden and Forest.*—E. J. B.—W. R.—D. T. F.—Our Belgian Correspondent.—Annanford.—Bruce Findlay (too late)—N. S. T.—M. B. A.—W. H. M. (the information given applies to L. giganteum also).—J. S.—T. B.—G. C.—A. J. B.—A. K.—J. D.—H. M.—J. G. B.—J. B.—W. H. D.—W. H. G.—C. A. M. C.—D. L. (next week).—H. B.—W. Brown (Richmond).

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GENUINE ORCHID PEAT, 8*s.* 6*d.* per sack; 5 sacks, 40*s.* BEST BROWN FIBROUS PEAT, 5*s.* per sack; 5 for 22*s.* 6*d.* BLACK FIBROUS PEAT, 4*s.* 6*d.* per sack; 5 for 20*s.* COARSE SILVER SAND, 1*s.* 6*d.* per bushel; 14*s.* half ton; 24*s.* per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1*s.* per bushel. Tobacco Paper, 1*s.* per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, Shell Shingle, Charcoal, Mushroom Spawn, and Russia Mats.
GARDEN NETTING, 2 yards wide, 1½*d.*, or 100 yards, 10*s.*; 4 yards wide, 3*d.*, or 100 yards, 20*s.* SCRIM CANVAS, 1 yard wide, 3*d.*, 2 yards, 6*d.* per yard. TIFFANY, 38 in. wide, in 20 yard pieces, 3*s.* 6*d.* per piece.
BAMBOO CANES, 3 feet 10 in., 3*s.* 6*d.*, 5*s.*, and 7*s.* per 100; extra long, 5*s.* per dozen.
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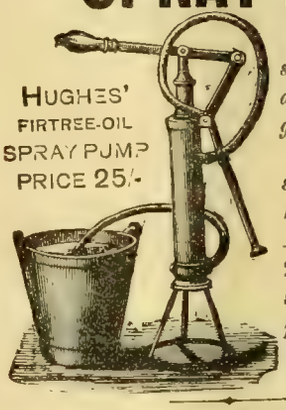
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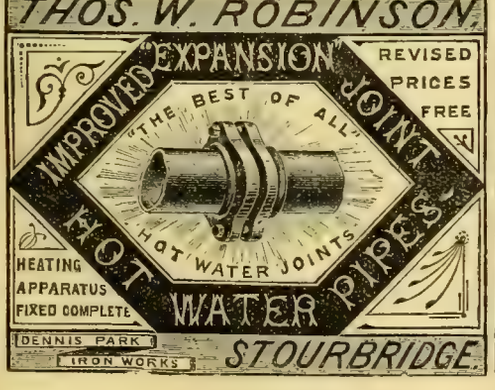
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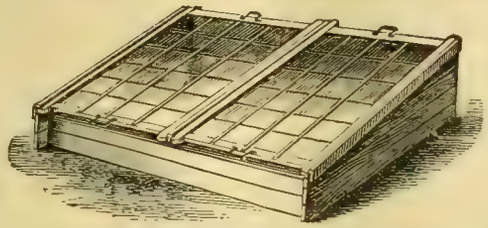
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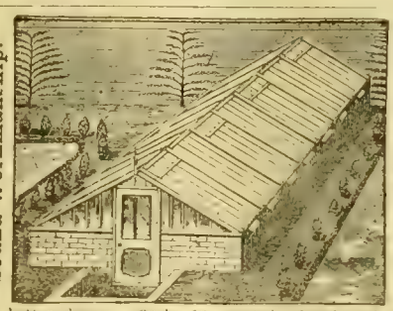
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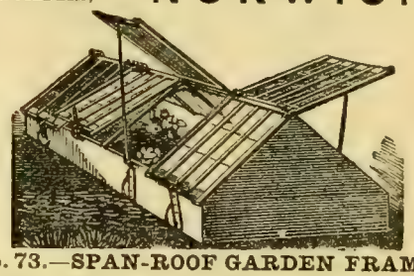
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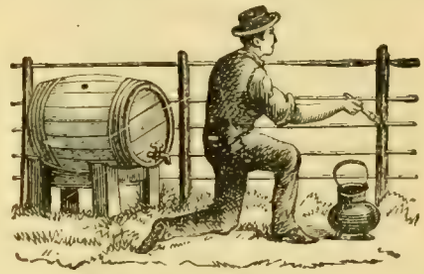
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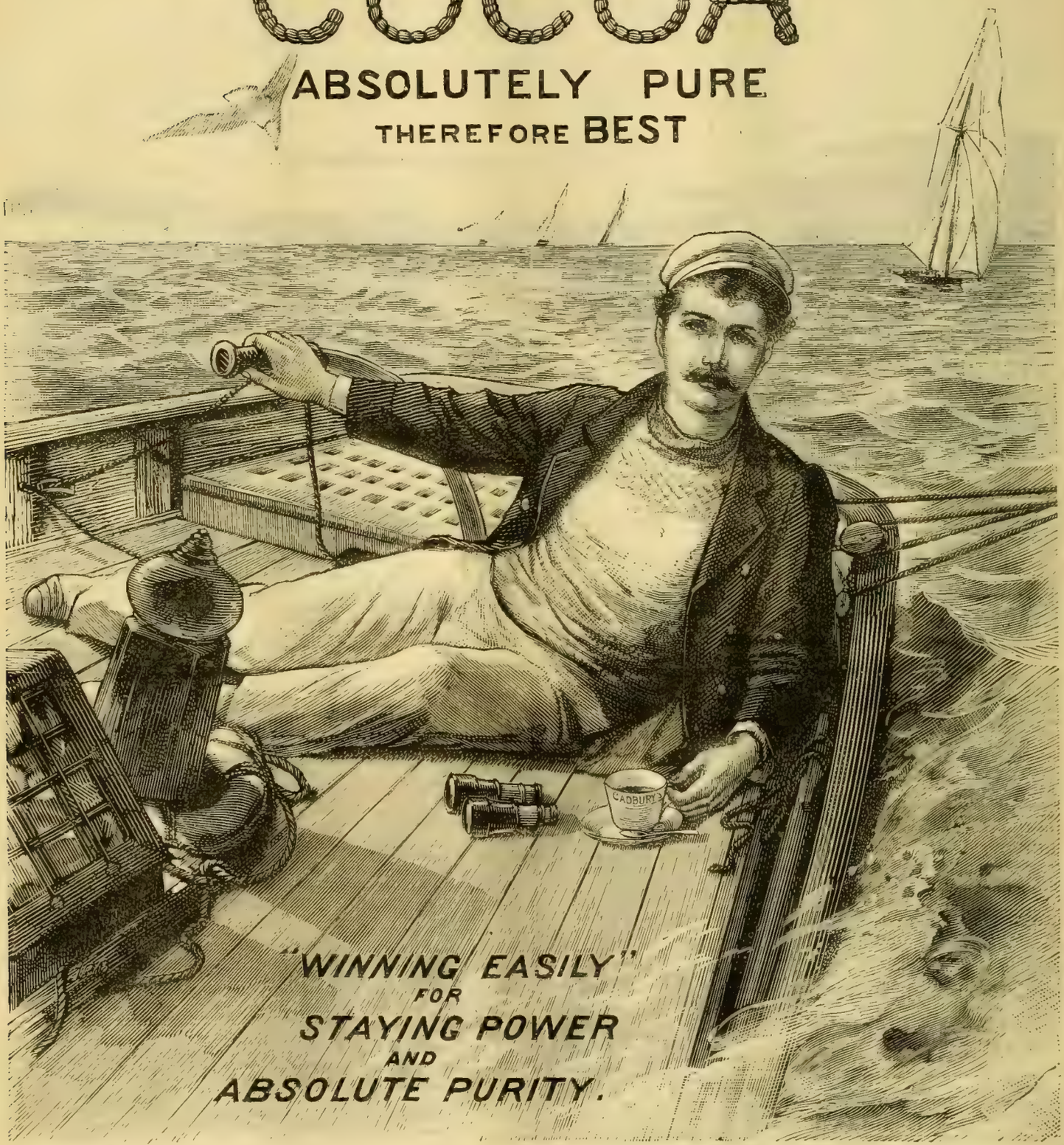
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THE GARDENERS' CHRONICLE, Vol. VII., Third Series, JAN. to JUNE, 1890.

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WANTED, ROSE BUDS.—500 General Jacqueminot, 250 Louis Van Houtte, 250 A. K. Williams.
TODDINGTON ORCHARD CO., Winchcomb.

WANTED, 10,000 strong STRAWBERRY RUNNERS (not Paxton's), old forced plants of Napiers; also strong PRIMULAS, CINERARIAS, PELARGONIUMS, Cuttings and old Stools; FIG TREES in pots.
Price, &c, to EDW. BENNETT, F.R.H.S., The Gardens, Harefield Grove, Uxbridge.

For Present Sowing.
CABBAGE.—CARTERS' HEARTWELL MARROW, acknowledged to be the finest early Cabbage in cultivation, price 1s. 6d. per oz., 6d. and 1s. per packet, post-free.
CARTERS' MAMMOTH BEEFHEART, the best main crop Cabbage, price 1s. 6d. per oz., 6d. and 1s. per packet, post-free.

For Present Sowing.
LETTUCE.—CARTERS' GIANT WHITE COS, price 2s. 6d. per oz., 1s. per packet, post-free.
DUNNETT'S GIANT WINTER COS, price 2s. 6d. per oz., 1s. per packet, post-free.
ALL THE YEAR ROUND, price 1s. 3d. per oz., 6d. per packet, post-free.

For Present Sowing.
ONION.—CARTERS' GOLDEN GLOBE TRIPOLI, price 1s. and 2s. 6d. per packet, post-free.
CARTERS' GIANT WHITE TRIPOLI, price 1s. per oz., 6d. per packet, post-free.
CARTERS' WHITE EMPEROR, price 1s. and 2s. 6d. per packet, post-free.

CARTERS, Royal Seedsmen by Sealed Warrants, 237 and 238, HIGH HOLBORN, LONDON.

PRIMULAS—PRIMULAS—PRIMULAS.—Twenty-first year of distribution. Williams' Superb Strain, 1s. 6d. per dozen, 10s. per 100. CINERARIAS, same price; also double white PRIMULAS, 6d. each. Carriage free for cash with order.—JOHN STEVENS, The Nurseries, Coventry.

CAMELLIAS.—Healthy Plants, well set with bud, 3 to 8 feet high, and bushy. Full particulars on application.
WILLIAM GOLBY, Edgend Nursery, Brierfield, near Burnley.

Many Acres of Lilies of the Valley!
T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-yr. old flowering Crowns for forcing, and 2 and 1-yr. old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.
T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

AMATEUR COLLECTION of RARE ORCHIDS, collected last February by an officer in totally unexplored Hills, Upper Burmah. Consists of over fifty small plants, comprising at least twelve varieties, some believed to be unknown. Set up on blocks and breaking well. For sale immediately, Collector having no accommodation, and knowing nothing about management.
Apply, GARDENER, 59, Kensington Road, Southport.

Dutch, Cape, and Exotic Bulbs.
ANT. ROOZEN AND SON'S CATALOGUE for 1890, containing details of their immense Collections of New, Rare, and Fine Bulbs and Plants (94 pages in English) is now ready, and will, as usual, be sent, post free, on application to their Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.; or themselves direct at Overveen, near Haarlem, Holland.
N.B.—No connection with any other firm of the same name.

STRAWBERRIES.—A fine Collection of the best varieties can be supplied. Orders should be booked now. Descriptive CATALOGUE post-free.
THOMAS RIVERS AND SONS, Sawbridgeworth.

None like the Kent Strawberries.
VERY FINE PLANTS.
True to name—to fruit next year.
GEO. BUNYARD AND CO., Maidstone.
New Illustrated CATALOGUE free. (Explicit Cultural Directions and Descriptions.)

LAXTON'S STRAWBERRIES.—New Priced LIST, with particulars of varieties for the present season, now ready.
THOMAS LAXTON, Seed Grower, Bedford.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Thursday Next.

CHOICE ESTABLISHED ORCHIDS, many in Flower; imported EAST INDIAN ORCHIDS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 7, at half-past 12 o'Clock precisely, CHOICE ESTABLISHED ORCHIDS, many in Flower, many Private Collections, comprising Lælia elegans Turneri, Cattleya velutina, Cypripedium aurorum and vexillarium; Den. nobile, fine plants; Lælia anceps Barkerii, 20 bulbs; Cypripedium insigne, several fine plants, with about 70 growths. Also IMPORTED ORCHIDS, consisting of Dendrobes, and other EAST INDIAN ORCHIDS; Angræcum eburneum, fine plants, &c.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE of ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 14, at half-past 12 o'Clock precisely, and he will be glad if Gentlemen desirous of entering Lots for this Sale will please SEND LISTS NOT LATER THAN THURSDAY NEXT.

Cut Flowers, Plants, and Bulbs.

We hold Sales, several each week. Reference to senders of years standing. Particulars on application.

MESSRS. POPE AND SONS, Sale Rooms, 6, Phillips Street, adjoining Market Hall, Birmingham.

Friday Next.

GREAT TRADE ORCHID SALE.
Without the slightest reserve.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. Sander, of St. Alban's, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 8, at half-past 12 o'Clock, a fine COLLECTION of IMPORTED and ESTABLISHED PLANTS, all of which are highly useful to the Trade and Amateurs. Every plant will be *sold without the slightest reserve whatever.*

CATTLEYA ELDORADO SPLENDENS.

A very fine importation of this Cattleya has just reached us in the best condition, every piece being alive, and furnished with one or more eyes. This plant is now flowering in collections, consequently a better time could not be chosen for buying, as the plants are perfectly at rest. Plants now bought will grow on freely, and will flower well next season. Fine plump eyes, firm bulbs and leaves make the present importation a very fine one.

Also some healthy established plants of Dendrobium nobile from the best northern Indian district. The new and rare PHAIUS HUMBLOTII in splendid health; Cattleya Gaskelliana, strong healthy plants, many in sheath; Cypripedium caudatum, Oncidium papilio majus, Lælia harpophylla, ANGRÆCUM SANDERIANUM, a charming thing; Cypripedium Sanderianum, C. venustum pardinum, C. caudatum, &c.

CATTLEYA SPECIES.

In the way of C. Triange, our collector has recently been searching in an hitherto unexplored part of Columbia, where he found these plants; he collected every plant of it that could be found, and all are offered in the sale. The plants have been in England one month, and the best of them were potted to be offered for sale. Some dried flowers, which the collector sent with the plants, show signs of great beauty and size.

Two pure white flowers were also received, and no doubt there are many such beautiful forms in the plant offered.

Also a few imported plants of Saccolabium Blumei majus, the Foxtail Orchid; Chysis aurea, Sarcanthus species, Cattleya Leopoldii, Aërides species, Saccolabium curvifolium, CYMBIDIUM EBURNEUM, CYPRIPEDIUM INSIGNE MONTANUM, a lovely new form; C. concolor, and a fine lot of mixed Dendrobes, containing D. lituiflorum, marmoratum, Freemanii, &c.

CATTLEYA SUPERBA SPLENDENS.

This must not be confounded with the common Cattleya superba, which, though a fine thing, is not equal to the variety splendens; the flowers of the latter are much larger, and of a more brilliant hue. It is one of the best of the whole genus—a striking and brilliant Cattleya. This importation is especially fine, and every plant offered will grow.

CATTLEYA VARS. MASSAIANA, HARDYANA, HEINE'S VAR., &c.

Received in splendid order. This is the last batch received from our Collector prior to his leaving the district whence came the above very charming varieties. It is a fact that out of twelve plants which were sold to a gentleman four proved to be C. Hardyana (a natural hybrid between C. aurea and C. gigas). Buyers should take this opportunity of securing such valued prizes.

On view morning of Sale, and Catalogues had.

Lee, Kent.—Important to the Trade.

Absolute CLEARANCE SALE of GREENHOUSE PLANTS, FERNS, ORCHIDS, UTENSILS, and effects. By order of the Executors of the late Mr. H. J. R. Wright.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Wright's Nursery, Turner Road, Lee, on THURSDAY, August 14, at 12 o'Clock precisely, in consequence of the number of lots, the whole of the immense stock of GREENHOUSE PLANTS and FERNS, being the contents of 40 Greenhouses and Pits, and comprising 25,000 Ferns, of sorts; 1500 Odontoglossum Alexandræ, established plants; 40 specimen Cœlogyne cristata, 5000 Fuchsias, 5000 Pelargoniums, including many fine specimens for cutting from; 1000 Selaginella Martensii, 100 fine Azalea indica alba and Fielder's White Camellias, 1000 Grevillea robusta, 2000 Chrysanthemums, good plants; 5000 Solanums, Ericas, and Epacris; also the UTENSILS in Trade, capital spring Market VAN, Dog CART, Office FURNITURE, contents of Painter's Shop, and other effects.

May be viewed two days' prior to the Sale. Catalogues may be obtained on the Premises, of Messrs. NEWTON AND NEWTON, Solicitors, 180, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Monday, August 18.

DUTCH BULBS.—SPECIAL TRADE SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY, August 18, THURSDAY, August 21, MONDAY, August 25, and THURSDAY, August 28, at half-past 11 o'Clock, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, received direct for Unreserved Sale.

These Early Auctions have been specially arranged in Lots to suit the Trade and other Large Buyers.

The Auctioneers are now preparing their permanent Lists for the coming season, and will be pleased to enter the Names of intending Purchasers who may desire a regular supply of Catalogues for these Sales.

Auction Rooms and Offices, 67 and 68, Cheapside, London, E.C.

Sunningdale.—Preliminary Notice.

Without the least reserve.

SIX DAYS' ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. C. Noble, who is under notice to quit all lands held by him under St. John's College, Cambridge, at Christmas next.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, on MONDAY, October 6, and five following days, without reserve, several acres of unusually well-grown NURSERY STOCK, carefully prepared for removal.

Fuller announcements will appear in due course.

FOR SALE, a Retail SEED and HORTICULTURAL SUNDRIES BUSINESS at Exeter, with Trial Ground, about 2 acres. Incoming very easy.
Apply, SOUTHCOTT AND HONEY, Exeter.

Mile End Nurseries, Stockport.

TO BE DISPOSED OF, owing to the decease of the Proprietor, this old-established BUSINESS. Extent of Land about 13 acres.—For further particulars, address, EXECUTORS, Mile End Nurseries, Stockport.

To Grape, Fruit, Tomato Growers, Market Gardeners, &c.

TO BE DISPOSED OF, an Old-established BUSINESS, in the Channel Islands, in full work. Suitable for a Partnership. Capital required about £1000.

Apply in first instance by letter, addressed to Mr. W. H. HELLYER, 41, Bridge Road West, Battersea, London, S.W.

OLD-ESTABLISHED NURSERY, FLORIST, and JOBBING BUSINESS. Shop in main road. Good Nursery. Best position in St. John's Wood. Incoming about £300; part can remain to an immediate purchaser.

Apply, 18, Finchley Road, St. John's Wood, N.W.; or, Messrs. GOWING AND CO., Solicitors, 41, Finsbury Pavement, E.C.

Mowden Nurseries, Darlington.

TO LET, or FOR SALE, by order of the MORTGAGEES, either as a whole, or in lots to suit Purchasers, the Valuable NURSERY, lately in the occupation of Mr. T. B. Morton, containing about 2 Acres, with Dwelling-House, Stable, Cart Shed, 7 Greenhouses, &c., all fitted up with the most modern appliances; well stocked with Fruit Trees, &c.—Offers will be received by

J. T. HALL, 44, High Row, Darlington.

TO BE LET, or valuable LEASE SOLD, of SMALL NURSERY at Acton, with good local trade; five Glass Houses, one Vinery, well fruited, some open Ground. Satisfactory reason for leaving.

For particulars apply to A. C., 1, Berrymead Road, Chiswick.

TO LET, a well-established NURSERY, about 12 acres in extent, well stocked and in fine condition, situated near a large city.—Full particulars on application to A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE LET, on the Duke of Manchester's Estate, Huntingdonshire, several clean convenient FARMS, of from 200 to 600 Acres, in excellent condition (for several years in the occupation of the late Duke). Capital Farm-houses and suitable buildings, all in thorough repair. For particulars, apply to

Mr. B. DAVIES-COOKE, Estate Office, Kimbolton Castle, St. Neots; or to Messrs. BOXALL AND BOXALL, Solicitors, 24, Chancery Lane, London.

To Gardeners, Fruit, and Flower Growers.

A splendid opportunity to an industrious capable man.

TO LET, within 6 miles of Manchester, Seven Large GREENHOUSES, mostly 60 feet long, heated with 4-inch Hot-water Pipes, on most approved principle. Boilers almost new. Plenty of Water with Land (cheap) if required. Rent £40 per year.

For further particulars, apply to T. LEASON, Acomb Street, Manchester.

TO BE LET, 1 to 10 acres of GRASS LAND, suitable for Nurserymen and others, on Lease for 7, 14, or 21 years. Rent from £8 to £12 per acre, with the option of purchasing the Freehold within the first seven years. No tithe. Near the main road, Enfield Highway, about nine miles from London.

Apply, H. MOORE, 59, Bishopsgate Street Within, E.C.

Dover.

TO BE LET, the ASHEN TREE NURSERY, with good Residence, near to the sea front. Five large Plant and Propagating Houses, all in good condition, and about half an acre of Ground. Good connection. Incoming about £100; rent moderate.—Apply to Messrs. WORSFOLD AND HAYWARD, Auctioneers and Agents, Market Square, Dover.

50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high, 15*s.* to £10 per 100, free on rail.
J. J. CLARK, Goldstone Farm, Brighton.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

DAILY PARCELS EXPRESS SERVICE to the CONTINENT, *vid* Queenborough, Flushing, Kaldenkirchen.

This Parcels Service, in direct connection with the German and Austro-Hungarian Posts, is specially adapted for the rapid and regular despatch of Plants, Bulbs, &c. No Certificate required for Germany. Tariffs free on application. Goods also accepted for Conveyance by *Petite and Grande Vitesse.*

BEST, RYLEY AND CO., 88, Bishopsgate Street, London, E.C.
Receiving Office at Holborn Viaduct Station.

Fritillaria Walujewi.

C. G. VAN TUBERGEN, Haarlem, Holland, is expecting an importation of this extremely rare Bulb, unquestionably the finest and most distinct of all Fritillarias. Its flowers are large, silvery-grey without, the inside of a peculiar deep red colour. Imported bulbs are offered at the following prices: 4*s.* each, 44*s.* per dozen. Apply either direct, or to—

Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

SUTTON'S VEGETABLE SEEDS for SUMMER and AUTUMN SOWING.—Sutton's Flower of Spring Cabbage, 1*s.* per oz., post-free. Sutton's Imperial Cabbage, 1*s.* per oz., post-free. Sutton's First Crop Cauliflower, 2*s.* 6*d.* per packet, post-free. Sutton's Winter White Cos Lettuce, 1*s.* per packet, post-free. Sutton's Improved Queen Onion, 1*s.* 6*d.* per packet, post-free. Sutton's Earliest Frame Radish, 6*d.* per oz., post-free. Sutton's Snowball Turnip, 6*d.* per oz., post-free, SUTTON'S SEEDS Genuine only Direct from SUTTON AND SONS, The Queen's Seedsmen, Reading. No agents.

SPECIAL OFFER.—25,000 FERNS.—Pteris tremula, Pteris cretica cristata, two best market Ferns. Good stuff, in large thumbs, ready for potting on, 12*s.* per 100, packed free for cash with order. A LIST of other sorts on application.—GOWERS AND EMBERSON, Comely Bank Nursery, Walthamstow.

FERNS! FERNS!! FERNS!!!—Trade offer. Great Annual Sale of Surplus Stock; 100,000, in 25 sorts, Greenhouse and Stove, Pteris, Adiantums, Polypodiums, Cyrtomiums, Polystichums, &c.; 30,000 Pteris cretica cristata, fine bushy stuff, soon make 48 if potted at once; 10,000 Adiantum cuneatum, bushy stuff, all at 12*s.* per 100; store Ferns, variety, 6*s.* per 100, 50*s.* per 1000. Packed free, cash with order.
J. SMITH, The London Fern Nurse y, Loughboro' Road, S.W.

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to—

Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.

N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

FLORAL ALBUM of CONFERENCE DAFFODILS.—This unique "Work of Art," illustrated by GERTRUDE HARTLAND, has now become a regular Drawing-room Book. First Edition limited to One Thousand Copies. Post-free, 2*s.* 6*d.* "Key" to same for 1890, descriptive and priced, *post-free to all applicants.* Bulbs very moderate in price, and of fine quality.
WM. BAYLOR HARTLAND, Seedsman, Cork.

IMMENSE STOCK of ORCHIDS.—Best Value in the Trade. Must be cleared to make room for Importations. Great opportunity. Established but unflowered plants. Very valuable varieties are certainly to be obtained, and great bargains. Summer Special Offer now ready, affording a paying investment to any one with glass at command, which should not be overlooked—such plants may never again be offered to the public and the trade.

IMMENSE IMPORTATION of that most lovely, free-flowering Orchid, CATTLEYA GASKELLIANA, just to hand. Plump bulbs, leaves green, and dormant eyes; really in splendid condition. Collector states many white ones are to be found in the consignment.

ORCHID PEAT, best in the Trade, 8*s.* per sack, carriage forward. SPHAGNUM MOSS, 7*s.* per sack; per bushel bag, 2*s.*
Apply to WM. GORDON, The Nurseries, Twickenham, Middlesex.

CUT MAIDENHAIR FERN all the year round. Present price, 100 fronds for 1*s.* 3*d.*, Post-free, for cash. Special quotations for large quantities.
TAYLOR AND CO., Timperley, Cheshire.

SHORT'S NEW DOUBLE WHITE FUCHSIA BEAUTY OF CLEVELAND.

Unquestionably the finest Double White Fuchsia yet sent out, remarkable for its strong constitution, dwarf and most robust habit. It will support the weight of its enormous flowers (which are frequently produced nine at a joint) without any stick or support whatever, it reflexes well, and the corolla is of the purest white, and as a decorative plant it is all that can be desired. Strong plants, 3*s.* 6*d.* each, from the raiser only.
W. SHORT, Florist, Stokesley, Yorkshire.

A CHARMING CONSERVATORY

May be obtained at a small cost by purchasing now PRIMULA SINENSIS and CINERARIAS, from stores, at 1*s.* 6*d* per dozen, 10*s.* per 100; Small Pots, 2*s.* 6*d.* per dozen. BOUVARDIAS, for growing on to bloom this winter, 4*s.* per dozen, 25*s.* per 100. GLOXINIAS, magnificent hues, 6*s.* per dozen.

CLIBRAN'S, Oldfield Nurseries, ALTRINCHAM; also Manchester.

DANIELS BROS.'
CHOICE
FLORISTS' FLOWERS.

We have much pleasure in offering fine Transplanted Seedlings from our superb strains of the following. Free by Post, at prices quoted:— Per doz.—*s. d.*

AURICULAS, very choice, strong young plants for blooming next spring ... per 100, 15*s.* 2 6
CALCEOLARIAS (herbaceous), a grand strain of beautiful varieties ... ... per 100, 12*s.* 6*d.* 2 0
CARNATIONS and PICOTEES, from choicest stage flowers ... ... per 100, 10*s.* 6*d.* 1 6
CINERARIA HYBRIDA, splendid strain per 100, 10*s.* 6*d.* 1 6
PRIMULA SINENSIS, alba magnifica 2 6
" " Crimson King... ... ... 2 6
" " choicest red, white, or mixed per 100, 10*s.* 6*d.* 1 6

The following in strong young stuff for Winter Flowering, established in pots:— Per doz.—*s. d.*

CYCLAMEN PERSICUM GIGANTEUM, per 100, 17*s.* 6*d.* 2 6
BOUVARDIAS, in beautiful variety ... 6*s.* and 9 0
PRIMULAS, double, white, fine ...per 100, 42*s.* 6 0

BULBS FOR EARLY FORCING.

HYACINTHS, Early White Roman, Per doz.—*s. d.*
extra fine roots, per 100, 17*s.* 6*d.* 2 6
" " ordinary size, " 14*s.* 0*d.* 2 0
NARCISSUS, Paper White, fine, " 10*s.* 6*d.* 1 6
" " grandiflora, " 15*s.* 0*d.* 2 6
" Double Roman, fine roots, " 10*s.* 6*d.* 1 6
LILIUM HARRISII, splendid, " 56*s.* 0*d.* 7 6
" " extra fine roots, " 80*s.* 0*d.* 10 6

CARRIAGE FREE.

DANIELS BROS.,
TOWN CLOSE NURSERIES,
NORWICH.

NARCISSUS "Sir Watkin."

Now ready, thoroughly ripened, strong flowering Bulbs of this grandest Daffodil, 1*s.* each. Extra large, 1*s.* 6*d.* each Special prices per dozen and 100. New CATALOGUE will be ready shortly.

DICKSONS, *(Limited)* The Nurseries, (400 *acres*) **CHESTER.**

FRENCH, ITALIAN, AND BERMUDIAN

FLOWERING BULBS.

LITTLE & BALLANTYNE,
THE QUEEN'S SEEDSMEN,

Announce the arrival of splendid consignments of LILIUMS CANDIDUM and HARRISII, FREESIAS, NARCISSUS, &c.; also an extra selected shipment of Early Single White Roman HYACINTHS, all of the largest sizes and superior quality.

Prices on application.

THE ROYAL SEED AND NURSERY ESTABLISHMENT, CARLISLE.

CHOICE FLOWER SEEDS
FOR PRESENT AND LATER SOWING.
Saved from choicest strains.

PRIMULA, CALCEOLARIA, CINERARIA, GLOXINIA, AURICULA, POLYANTHUS, PRIMROSE, CARNATION, HOLLYHOCK, PANSY, SWEET WILLIAM, WALLFLOWER, SILENE, &c.

Priced Catalogue, post-free. All Seeds delivered free.

DICKSONS Seed Warehouse, CHESTER.

CHEAP OFFER of ORNAMENTAL TREES and SHRUBS.

EXPIRATION of LEASE.—A Large Quantity of ORNAMENTAL TREES and SHRUBS to be SOLD CHEAP, owing to the above cause.

Full particulars on application to
The Liverpool Horticultural Co. (John Cowan), Ltd.,
The Vineyard and Nurseries, Garston, near Liverpool.

TO NURSERYMEN and OTHERS.—Four Large CAMELLIAS, 2 Red, 2 White, from 6 to 10 feet high, well-grown in pots and well set with buds. 20 Large AZALEAS, mostly White. About 30 yards of good LEAF-MOULD. Twelve 20-inch Iron HAND LIGHTS, nearly new, for Sale. Prices on application to
262A, Clapham Road, Stockwell.

The Best Present for a Gardener.
VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5*s.*, post-free 5*s.* 6*d.*
A. F. BARRON, Royal Horticultural Society, Chiswick.

JULIUS HANSEN,
PINNEBERG (GERMANY),
RECOMMENDS HIS
LILY OF THE VALLEY,
very strong pipes, 25*s.* per 1000 pipes; by taking 50,000, 24*s.*
Large Silver Medal, Berlin, 1890; Bronze Medal, Hamburg, 1889.

STRAWBERRIES.

Strong hardy runners, and plants in pots, of the newest and best varieties.
Descriptive CATALOGUE on application.

DICKSONS, *(Limited)* The Nurseries, (400 acres) **CHESTER.**

FOR AUTUMN, 1890.

I offer over 1,000,000
LILY OF THE VALLEY CROWNS
strong, and very capable to blow; of the best kind for forcing (true Berlin, being grown in sandy soil). Wholesale Price on application. Freight to London, 1*s.* 3*d.* per 1000. Term of payment, March 1, 1891, by reference of a banking house. The ground I have planted with Lilies measures more than 9 acres.

F. W. KRAUSE,
LILY GROWER IN NEUSALZ,
SILESIA, GERMANY.—*Established* 1870.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6*s.* per bushel (1*s.* extra per bushel for package), or 6*d.* per cake; free by parcel post, 1*s.*

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON, Nurserymen and Seed Merchants, Highgate Nurseries, N.

Tobacco Paper is often Useless and Ineffectual,
BUT
CAMPBELL'S FUMIGATING INSECTICIDE
is simple to use and free from unpleasant smell.

From Mr. G. WYTHES, *Syon Gardens, Brentford*—"I am pleased with the Fumigating Insecticide. For Orchids I think it will be a great boon."

From Mr. W. TUNNINGTON, *The Gardens, Calderstone.*—"We have again used your Fumigating Insecticide, and have not the least doubt about its efficacy."

From Mr. W. BENNETT, *The Gardens, Rangemore, Burton-on-Trent.*—"I am much obliged for your Fumigating Insecticide, and cannot do any other than report favourably. We tried it upon a lot of miscellaneous things, and they are now, a week after, quite clean and uninjured."

From Messrs. J. BACKHOUSE & SON, *Nurseries, York.*—"We have tried Campbell's Fumigating Insecticide, and found it very efficacious, and also pleasant in using."

From Mr. JOHN ROBERTS, *The Gardens, Tan-y-Bwlch*—"Thanks for Fumigating Insecticide. I have given it a fair trial. It seems to be a great boon, not requiring any attention after being lighted, and is perfectly harmless to delicate flowers and leaves."

In rolls, post-free, for houses having a capacity of—
100 cubic ft., 8*d.* 500 cubic ft., 1/-. 1000 cubic ft., 1/3. 2000 cubic ft., 2/3.

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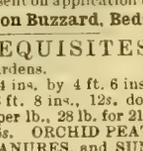
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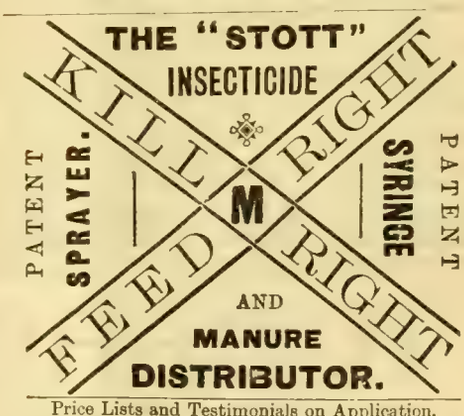
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Described in *Gardeners' Chronicle*, June 14, p. 735.

ZYGOPETALUM YORISIANUM
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Described in *Gardeners' Chronicle*, June 7, p. 704.

CORYANTHES BUNGEROTHI
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As a Supplement
TO THE
GARDENERS' CHRONICLE
FOR
Next Week, August 9,
WILL BE
Published an Illustration
OF A VIEW IN
MR. BULL'S
ORCHID-EXHIBITION.



THE
Gardeners' Chronicle.

SATURDAY, AUGUST 2, 1890.

PALMS.

AN order of plants, many of which have large trunks with noble heads of foliage, and, with the exception of Chamærops humilis, which is found so far north as Nice, chiefly tropical or sub-tropical. Their properties are numerous and varied, and whether it be as food, the production of oils, gum, resins, or their general uses in the arts and manufactures, Palms are economically considered an important family of plants.

Among the more important species, perhaps none is better known, or more esteemed, than the Cocoa-nut (Cocos nucifera), whose seeds, or nuts as they are called, are, when young and milky, used by the natives of the countries where they grow as an article of food, as they also are, to a certain extent, in other parts of the world. Their great commercial value, however, lies in the oil that is expressed from the kernel, and the fibre of which the outer bark of the Nut is formed. The kernel, partly dried and broken, is imported into this country under the name of "copra," and contains both a solid fat and a fluid oil, the latter used for burning in lamps, the former, or stearin, for candle-making. The fibrous husk is combed out, and forms coir, which is spun into yarn for rope, matting, mats, and brushes, the refuse being a well-known article of the horticultural sundriesman trade. The wood, of a light brown colour, is employed for inlaying, under the name of porcupine-wood.

The Oil Palm (Elais guineensis), a native of western tropical Africa, produces a large spadix containing a great number of fruits, consisting of a red fleshy pulp, which contains oil, an enormous quantity of which is exported in the raw state for use as a lubricant for machinery, and in the manufacture of soap and candles. It has a Violet-like smell, which may often be detected in the vicinity of railway waggons. Glycerine is also prepared from it; and, indeed, the glycerine and lime-cream of the hairdressers are often little else than this oil, with lime-water added to form a creamy emulsion.

The Date Palm (Phœnix dactylifera) produces great quantities of fleshy fruits, which are used in various ways as food. The long feathery leaves of

this Palm are also used for decorative purposes, being blanched and dried, in which state they are imported into this country. In Calamus the long flexible stems are used in India for constructing suspension bridges, and are also largely imported for bottoms of chairs and similar purposes.

C. Draco has the fruits covered with a reddish powder, which when collected is known in commerce as dragon's-blood, its chief use being in giving colour to varnishes. Sago is prepared from the soft pithy portion of the stems of Metroxylon Sago. Borassus flabelliformis, the Palmyra, or Toddy Palm, furnishes from its spadix a strong spirit. Arenga saccharifera gives both Sago and toddy. Areca catechu, whose seeds are the Betel-nuts, which when roasted and ground are used as a dentifrice, and for mastication by Eastern peoples. Mention might be made of the Cabbage Palm (Oreodoxa oleracea), and the Gingerbread Palm (Hyphæne thebaica), also noteworthy as the branching Palm. Many of the Fan Palms are used for thatching. In Chamærops excelsa, the fibrous matter at the base of the leaves is sometimes made into brooms, and even wearing apparel. The fibre from the leaves of Chamærops humilis is used as a substitute for horse-hair, and is imported under the name of "crin-vegetal." Perhaps of all the varied products yielded by the order, none is better known in gardens than the tying material called raffia, which, as is generally known, is the produce of the leaves of Raphia ruffia, which are dried and split up into shreds. But, however economically interesting Palms may be, their chief value from a gardening point of view are the decorative capacities of the plants, and their ability to withstand tear and wear as such.

In no other family of plants is the same degree of gracefulness and elegance of form to be found; add to which the enduring character of many of the species in favoured positions out-of-doors. Trachycarpus Fortunei will stand the year round uninjured, and flowers freely. Many of the Palms are suitable for greenhouse culture, notably, Rhopalostylis Baueri, and R. sapida (Arecas), Seaforthia elegans, Livistona chinensis, and L. australis, Rhapis, Washingtonia robusta (Brahea filifera), and many others more or less hardy, and will submit to indifferent treatment for some time with comparative impunity, such as low temperature, insufficient light, &c. Of these mention may be made of Areca lutescens, the two Howeias (better known as Kentia), Belmoreana and Forsteriana, Sabal, and some of the Phœnixes. Most of the small and slender-growing species are best adapted for indoor uses, such as table decoration, &c., and these require in most instances stove treatment. Some of these that are commonly met with are Cocos Weddeliana, Geonoma gracilis, Calamus species, Dæmonorops species, Dichyospermas, and some of the Arecas.

Cultivation.—The general treatment of Palms is much the same, and presents no difficulties. There are, however, some few points to be attended to, to secure the best results. No Palm should ever be allowed to get very dry at the root; and, indeed, provided the drainage is good, it is not easy to injure one by over-watering it. Copious syringing is beneficial; and although Palms make good-looking foliage when grown under tolerably heavy shading, yet the more light the firmer and more enduring it is. And if the plants are large, especially if planted out, all other conditions being right, the fullest exposure to sunlight will not injure them. While the plants are small they may be grown in much more equable conditions, and shading employed to some extent. Palms being moisture-loving plants, they prefer a soil that is fairly retentive, with sufficient sharp sand mixed with it to render it porous, and pulverised or prepared manure may be thoroughly incorporated with it, particularly if the plants are for use when young, and occasionally liquid-manure may be afforded such plants.

An important point to observe is, never to cut back the roots of a Palm if it can be avoided, particularly those of young plants, nor should a plant be over-potted, or planted with the base of the stem below the level of the soil, but it should just touch the surface. With careful watering it is astonishing to what age Palms can be kept in good condition, even when growing in small pots—a point of some importance when the plants have to be transported to long distances for decorative purposes.

Propagation.—Although some species tiller freely, and may be propagated from offsets, seed is mainly employed in raising the plants, and it is easily procurable in this country. It may either be sown thickly in pans, or singly in small pots, the method followed depending on the size of the seeds. They should be covered with soil, but not deeply buried, nor should the seeds be much watered, this being apt to cause the decay of the seeds. They should be placed in a warm house, and kept in a uniformly moist state. Some species having seeds of no great size, like Cocos Weddeliana, or Kentia, succeed admirably if planted singly, and stood underneath the plant-stage—of course, where the pots are free from drip, taking care to put them near the glass as soon as germination is well advanced; and where space permits of it being done, this method answers well, and gives but little trouble. *F. R.*

New or Noteworthy Plants.

GLADIOLUS PRIMULINUS, *n. sp.**

This is a beautiful new species of robust broad-leaved Gladiolus, which has just flowered at Kew for the first time, and which was exhibited at the recent Fern Conference. The corms were sent by Mr. J. T. Last, in July, 1887, from the Usagara Mountains in South-east tropical Africa. In leaf, habit, and in the size and shape of the flower it resembles psittacinus, dracocephalus, and Quartinianus; but the flower is a uniform pale primrose-yellow, without any spots or streaks. *J. G. Baker, Herbarium, Kew.*

THE SEED CROPS.

The weather is so dull, so cold, and there is such a lack of invigorating sunshine, that to seed growers the outlook is a desponding one. An immediate change to clear skies, bright sunshine, and a high temperature, would do much to accelerate the ripening process; but if the present dull, cold, and sunless weather continues through July, the effects will be disastrous. Peas are making a rank growth, and one effect of this is to make it to some extent hereditary. Carrots and Onions have reached that point when sunshine is absolutely necessary to mature the seeds, and secure good samples. Turnips and Brassicas generally are in pod, and require bright summer weather to bring them to perfection. Already we hear ominous reports as to the appearance of the Potato seeds. Holland has become a great seed-growing country, and reports are coming to hand as to probable results. Cauliflower, judging from its present condition, promises a fair crop. Cabbage and Savoy are succeeding well, but were planted out in considerably less proportions than last year. Brussels Sprouts and Coles are so far satisfactory. Swedes promise a good crop, and, so far, Turnips are a satisfactory one.

Sugar Beet and Mangel Wurzel promise well, but of the garden Beets, while the main of them look pretty well, the early Egyptian Turnip-rooted looks very poor, and not even a medium crop is expected. Spinach is good, and Peas very good, up to the present time. Radish is expected to yield a medium crop; the Spanish Radish, which is brought into some of the northern markets in great quantities, looks very well. Onions were sparingly planted for seed, but so far there is a good prospect. Cucumbers—the ridge varieties—and Beans are slow to mature, but there is otherwise a good promise. Carrots promise very well, and Parsley a fair crop. But there is on the part of growers a general concurrence of opinion that sunshine and warmth are needed to bring good crops; and that under any circumstances they will not be so early as last year, as the seed pods up to the present time mature so slowly.

Nursery Notes.

MESSRS. WOOD AND SON.

Those who know the charming weald country between Uckfield and Tunbridge Wells, will not need to be told of the beauties of its scenery, its undulating surface dotted with huge Oaks, and now and then a Beech. The narrow lanes, often nothing more than the bridle-paths of Roman in later times widened out a little, are full of all kinds of wild flowers, and bounded by hedges of Holly and Thorn, or Beech, through which the Honeysuckle and Travellers' Joy twine themselves, forming the strongest and best of fences. Just where Ashdown Forest ends, and the land falls in gentle undulations to the south, is situated the nursery of Messrs. Wood & Son, the nursery itself an epitome of the country around, and containing within its boundaries several aspects and varieties of soil, the latter ranging from poor peat overlying, and surrounding masses of rock, in which Rhododendrons, Kalmias, Aucubas, and hardy Heaths are grown, to rich deep unctuous but not heavy loam.

The variety of aspects is of great advantage to the nurseryman who deals principally with plants intended for employment in the garden, as it enables him to select aspects to suit certain plants. The shelter is also sufficient to produce favourable effects on the vegetation, but not to coddle it or render it tender, and this is true especially of Roses, fruit trees, and forest stuff, which are mainly grown on the higher land, and where it is fully exposed. The usually more favoured inmates of gardens and pleasure grounds—the Retinosporas, Cedars, Piceas, Umbrella Pine, flowering shrubs, Rhododendrons, and evergreen shrubs of not the greatest hardihood, occupy the more or less sheltered part of the grounds.

Rhododendrons, it may be said, were found in great variety, and of all sizes, and not growing, as is often the case, in peat, but in the ordinary loam enriched with manure or leaf-mould, the foliage bespeaking perfect health, and the scars of seed-pods removed, the great bounteousness of the bloom of this year. Near Mr. Wood's dwelling and offices are congregated in beds and borders specimens of most of the Conifers which he grows in quantity. These show plants are not big, the space at disposal just thereabouts, putting a limit on size; but each is perfect in its way, as such examples should be. The Retinosporas were well represented under the various specific names that yet, and for some long time, will hold good in gardens, and with the trade. In Cedars, C. atlantica glauca should be specified, if only for the quite distinct hue of its foliage, which is that identically of Abies nobilis glauca. The other Cedars were represented by symmetrical examples. Picea pungens glauca is a Silver Fir, with a distinct glaucous hue on its needles. The habit is stately, and strictly pyramidal, and the tree will grow to an altitude of 100 feet. The ordinary form has dark green needles, to which the glaucous

* *Gladiolus primulinus*, n. sp.—Cormo magnitudine mediocri; foliis ensiformibus subcoriaceis; caule sesquipedali; floribus pauc's in spicam laxam secundam dispositis; spathæ valvis lanceolatis; perianthio primulino immaculato tubo curvato pollicari, segmentis superioribus valde imbricatis oblongis vel obovatis, inferioribus brevioribus deflexis; staminibus limbo duplo brevioribus.

Corm globose, above 1 inch in diameter. Leaves ensiform, not more than three fully produced, the largest 1 foot long, 1 inch broad at the middle, subcoriaceous, slightly glaucous, strongly ribbed. Stem 1½ foot long, the upper leaves short and adpressed to it. Flowers four or five in a lax secund spike. Spathe-valves lanceolate, the outer 1 to 1½ inch long. Perianth a uniform primrose-yellow; tube much curved, 1 inch long, ½ inch diameter at the throat, upper segments cucullate, much imbricated, 1½ inch long, the upper of the inner row obovate, 1 inch broad, the two upper of the outer row oblong, almost touching edge to edge; three lower segments shorter, deflexed. Stamens reaching about half-way up the limb; style deeply trifid. *J. G. Baker.*

variety affords a pleasing contrast in its greyish-blue ones. P. Engelmanni is a hardy tree everywhere in Britain, and was introduced in 1864 from the water shed of the Missouri river, Colorado, where it is found growing at 8,000 feet elevation. Abies lasiocarpa afforded several fine symmetrical examples; also A. concolor, usually classed as identical, but which Mr. Wood distinguishes by the glaucous or blue-green hue of the latter, whilst the former is merely green. Cryptomeria elegans grows here without a blemish, and obtains a charming colour, together with perfect symmetry. This is a plant that should always be placed in some roomy nook where hardier trees would afford it the needful shelter. Athrotaxus laxifolia, a distinct Conifer from Tasmania, was doing well; it is a low-growing tree, with thick coriaceous leaves of a dark green colour. We should like to see this hardy Conifer more extensively planted, the general port of the tree being very distinct from others; it grows in its native country to 25 feet in height. Podocarpus nubigena (macrophylla?) has long flat needles a quarter of an inch broad, tapering at the base, and acutely pointed at the apex; it is Japanese, and a fairly hardy tree. These last two form a contrast in greens, one being light and the other dark.

Of Conifers, now become common, mention may be made of Abies Douglasii and its charming variety, glauca, which everyone with a good-sized lawn should get; Abies nobilis and A. n. glauca, and Abies Nordmanniana.

Conifers with variegated foliage were numerous, and distinct enough generally to count as good picture trees. The best of those noticed were Cupressus nutkaensis (Thuiopsis borealis) variegata, white and green, one of the hardiest Cypresses; C. Vervaeneana, already well known in our gardens. Taxus fastigiata aurea variegata (Irish Yew); T. baccata elegantissima, good yellow tints; Retinospora tetragona aurea, a plant with an erect habit, and otherwise very distinct. Amongst evergreens with some amount of variegation, mention may be made of a form of Osmanthus ilicifolius, white and green; Golden Box, and Diplopappus chrysophyllus, quite golden here, and forming dense and large clumps.

A very distinct, broadly pyramidal Fir—Picea pyramidalis—very like to P. orientalis, was noticed. It is a close grower, and does not readily get away. It should be said that Sequoia gigantea grows finely at Maresfield, and not alone in the nursery, good examples being found at Maresfield Park, a neighbouring place belonging to Lady Shelley. Abies cephalonica does as well here on the rag-stone as on the chalk formation in other parts, and rarely gets its growth nipped by late frosts.

The nursery has a reputation for rare deciduous trees, and many were found. Ulmus Wreedi variegata is a golden-leaved Elm, with some vigour of growth, which is what cannot be said of many of these Continental novelties; Acer platanoides laciniatum has fine cut foliage, the young growth being of a rosy colour, and the habit erect; A. Schwedleri had a good colour, and the white and green leaves of A. Leopoldii marked the variety as one worthy of being planted as a foil to dark green foliage. The young leaves of Acer Worli are yellowish-green, and this colour endures the summer throughout. There were noted some excellent examples of A. colchicum rubrum, Golden Elder, and a golden-variegated form of Populus tremula Aspen.

Fine planting stuff was found in the Wig tree, Rhus cotinus; Sophora pendula, a few only of this singular tree; Liquidambar, Cerasus azoricus, Myrtle-leaved Portugal Laurel, Buxus thymæfolia, Golden-barked Ash, the colour of the bark on the young wood having a telling effect in the winter. Juglans regia laciniata; and a new Weeping Cherry in Cerasus rosea pendula. The Willow-leaved Laurel, a very distinct plant, and said to be the hardiest of these plants; and Cistus ladaniferus, beautiful, if fugacious, were found in quantity. To enumerate all we saw of good things is not within the scope of our notice, and we would say to lovers of trees and shrubs, "Go to the nursery, and see for yourselves."

Some of the ground was seen only from a distance, but large squares of various trees could be distinguished, notably the gray-green Weeping Willow (American), Limes, Birch, Sycamores, a hedge of Copper-Beech—the copper variety worked on an old hedgerow of Fagus sylvatica, producing the most singular effect imaginable. The "motive" is that grafts are available in almost any quantity, and that without cutting about saleable trees. Wall fruit receives much attention, and every bit of wall that is at all suitable by height, position, or aspect, is made to carry its crop of trees, and fine plants most of them were.

It was observed that the knifeman's common fault—that of not cutting low enough in forming fan-shaped trees out of maidens—is carefully guarded against, so that all the leading branches spring from points very close together when young, which will be undistinguishable when old. As all practical men know, blank spaces are readily and neatly filled up when trees are so manipulated in the early stages.

The stock of trained and untrained fruit trees is of great extent, and healthy. The area under fruits and Roses would be about 20 acres, and other parts of the land under cultivation are put under farm crops in proper rotation, which has a good effect on tree growth, tends to keep the ground clean, and prevents its exhaustion.

The horse-hoe, or rather, "Planet cultivator," is used between the rows of young stuff, and, indeed, wherever a pony can drag it without doing harm. Plums seemed to be a fruit of which great numbers were grown; also Damsons, the Farleigh, Frogmore Early Prolific being the favourites; and all are worked on the Myrobalan Plum (Prunus cerasifera) a stock on which these fruits do very well.

Roses for trade purposes are much grown, for Messrs. Wood do not show now, although the day was when their name was to be found in the front rank of competitors, and they used to show at Chiswick, cutting the blooms overnight, and sending them up by road. The Manetti Rose is largely favoured as a stock, and it must be admitted that a more robust lot of yearlings could with difficulty be found elsewhere. Every good Rose in the rosarian's catalogue is to be found there, and almost every old-fashioned Rose of whatever class, single or double-flowered, full grown specimens of many of these being kept as show examples. We name a few fine varieties that are grown in large numbers:—La France, Baroness, Ferdinand de Chaffot, Duke of Edinburgh, Madame G. Luizette, Ulrich Brunner, General Jacqueminot, A. K. Williams, Alfred Colomb, Pierre Notting, Abel Carrière, Madame Lacharme, Baron Bonstettin, Captain Christy, Ferdinand de Lesseps, Marie Baumann, Star of Waltham, and Pride of Waltham. Teas are equally as much grown as H.P.s; and in pots great numbers are grown of Maréchal Niel and Gloire de Dijon, many of those we saw in some houses having canes 7 and 8 feet long. The pretty, floriferous Banksia Roses are apparently in good demand, for great numbers of long shoots of last year's growth were noticed, securely layered in sandy compost, at points from 6 inches to 1 foot apart, for the purpose of raising stock; whilst the shoots of the current year were trained-in close on the wall at the back of the border, to thoroughly mature. It may be stated that the nursery is not strictly confined to out-of-door plants, but a few glass-houses are utilised for other plants, the propagation of Ivies, Ampelopsis, Vines, &c.

Messrs. J. Laing & Sons.

A visit to this home of Begonias, at Forest Hill, will well repay for the time occupied in the journey. There are as many as 135,000 singles planted out, and as they are all doing well there is a perfect sheet of colour, ranging from white to rich crimson; the plot of ground is composed of twenty-three beds, of seven or eight rows each, and each of the best colours is represented by two beds, making sixteen in all, while the remainder are more mixed.

In another portion of the nursery some 35,000 doubles may be seen flourishing in the open, but even now the quantity to be seen is not enumerated, for there are the houses in which the most distinct and striking varieties may be seen to the best advantage. On glancing round the whole collection, one notices that there is an improvement in the direction of obtaining a more dwarf and compact habit and sturdy flower-stalks, which, in a greater or less degree, bear the large flowers erect, this being most conspicuous among the double varieties; and this is a point which should now receive more attention than the production of larger flowers.

In the house devoted to double varieties are several very delicately coloured, the soft pinks being specially attractive, and among the best of those now in flower are Leonora, pale cream with pink flush, which possesses the additional merit of being a free flowerer. Juno is a large-sized flower of a bright scarlet hue, and has very sturdy flower-stalks, which carry the flowers quite erect. In Mrs. French we have a charming cream-coloured variety which has been well received, and Scarlet Gem, rich scarlet, is well named. Duchess of Portland is a large rich pink, Henshaw Russell rich red, Duchess of Teck creamy-yellow, and Vesta pure white. A break which appears to be showing freely is a double flower with white centre, the outer rim having the various red and rose shades seen in the best varieties, and Picotee-edged flowers, of which Messrs. Laing have a good selection, are very pretty. The singles make a gorgeous display, and Monarch remains one of the best reds. The flowers showing a shaded edge with white eye are good, such as Neatness, and Princess Victoria. One or two unnamed novelties were very good, one rich salmon and another salmony apricot, which showed up remarkably well, with full sunlight being most conspicuous. Crimson flowers were also well represented.

Orchid Notes and Gleanings.

A DOUBLE ORCHID: EPIDENDRUM VITELLINUM FLORE PLENO.

Instances of doubling in Orchids have several times been recorded, but I do not remember to have met with one of such interest from a purely horticultural point of view as the present. It is an instance of doubling in a plant of Epidendrum vitellinum majus, in the collection of G. C. Raphael, Esq., of Castle Hill, Englefield Green, Surrey, whose gardener, Mr. W. Swan, has sent to Kew an eight-flowered raceme, with the following note:—"The spike has been taken from a plant now flowering with us that had five spikes, the whole of the flowers being similar to those sent." They possess the following peculiarity. The lip is replaced by a petal, like the two ordinary ones, but these, instead of being a little broader than the sepals, are each a little narrower. The column is quite absent, being replaced by six small petals, somewhat variable in size, but constant from flower to flower, and always free from each other. The three outer ones are larger than the three inner, the largest of them being nearly half as long as the petals, and of the same colour, with the exception of the mid-line, which is yellow, like the column and lip of the normal flower. The three inner supernumerary petals are smaller, but otherwise similar. Thus we have a perfectly regular double flower of twelve segments, just as handsome as the type, while those who prefer a double flower will consider it more so. If it proves constant, it will be a valuable horticultural acquisition, though as it can only be increased by division of the plant, it will probably remain long a rarity. Botanically it is interesting, as showing the separation of the column into its six potential stamens, which have become changed into petals, while the stigmas are absent (at least they appear to be so). So altered is it that one might be excused for not recognising a single flower as an Orchid at all. *R. A. Rolfe.* (See *ante*, p. 103.)

Grammatophyllum Ellisii.

Our Belgian correspondent informs us that this plant is now in flower in the garden of Baron Alphonse de Rothschild, at Ferrières, under the care of Mr. Ernest Bergman. The inflorescence is 80 centimetres (2¾ feet) in length, and bears thirty-seven flowers. It resembles an immense Dendrobium thyrsiflorum, each flower being about 6 centimetres (2 inches) across, of fine brown coloured, spotted, and margined with yellow; the petals are white with brown tips, and the lip rose-coloured, striped with white. It is growing in a pot in the Phalænopsis house along with the famous plant of Renanthera Lowii.

Cultural Memoranda.

THE SOWING AND RAISING OF BIENNIALS

Among hardy plants, few are more useful and showy than some of the biennials, which, during the early summer months, do much to make borders gay; but to have strong and good plants, no time should be lost in sowing the seed. The best way of doing this is to prepare a piece of ground, either by raking it perfectly level and smooth, or putting on it an inch or so of finely-sifted soil, which should then be pressed firm, and gently watered, when, after a few hours, the seed may be sown, and just covered with fine mould or sand. To assist germination, handlights are a very great help, as by keeping them close and shaded, the seedlings come up quickly; but as soon as they appear, the lights must be tilted, or removed altogether. As soon as the plants are large enough, it is important that they be pricked out, which should be done in rows at about 6 inches apart, in beds, which will afford room for them to grow till they are large enough for planting out where they are to bloom. The biennials that most commend themselves are those I will mention below, first treating of the Œnotheras, the finest of which is that known as Œ. Lamarckiana, a variety that grows to a height of from 3 feet to 6 feet, according to soil and situation, and flowers with remarkable freedom. The blooms are very large, cup-shaped, and are produced at the ends of the main stems and shoots, all of which go on elongating and throwing out a succession of blossoms. Not only is this Œnothera very fine for the backs of borders that are large and wide, but it is well adapted for naturalising by the sides of pleasure-ground walks, or semi-wild places, where it will seed freely and take care of itself.

Foxgloves have been greatly improved of late years, and the best strains produce flowers almost as large as Gloxinias, many being beautifully spotted or marked on the throat, and others rich purple and white in their colours.

Pentstemons, though not strictly biennials, should be treated as such, as though they may live on for years, the old plants are rarely equal to the new, as they get injured during severe winters or cold springs, and if not annually raised from seed, cuttings should always be put in every autumn, and stock renewed or kept in that way, a cold frame or house being the best places to save them in; or if cuttings are put in under hand lights, or a sheltered border, the protection so afforded is quite sufficient to have them live safely through any winter that we may have. Antirrhinums do under the methods of sowing and pricking off the before-mentioned plants, and are about as hardy as those when growing in rich soil, but when Antirrhinums are in poor soil, and make hard short jointed shoots, they will endure severe frost without being hurt.

Campanulas. The variety known as C. medium calycanthema are quite indispensable for borders, making a magnificent show, and send up tall spikes that branch from their base and produce great numbers of large bell-shaped flowers with coloured calyces. When wanted for pots or beds they should be lifted in early spring with good balls and planted.

Poppies, of the Iceland and Shirley kinds, have deservedly become great favourites, the plants being remarkably showy, and well adapted for making a display in borders as well as for cutting, for though evanescent in their nature, the flowers are produced in such large numbers. To have these kinds of Poppies to flower early it is necessary to sow now and winter them; and to keep up a succession, another batch should be raised in the spring, but to have either lot really good the plants must be allowed plenty of space to develop, and one square foot of ground is not too much for a plant.

Brompton Stocks, when well grown, are of great value for masses, clumps, pots, and cutting in spring and summer. They need a warm, sheltered situation, or they are apt to get injured in the winter, and if they cannot be so favoured at first planting, the better way is to have them where the bed can be protected, and then transplant them in April, during showery weather, taking care to lift the plants with good balls, that the check be not great.

Sweet Scabious are also very useful, and among them there is much variety as regards colour, some of them having remarkably rich, dark, velvety flowers, and others of various shades, and white. They bloom best in poor soil, and when their growth is restricted they will pass unscathed through the winter.

Wallflowers of the German kind are very desirable, as they, like the Brompton Stocks, are early bloomers, and though not equal to the good old sorts, many of them come double, and they are very sweet-scented. The treatment requisite for German Wallflowers is about the same as that that suits Stocks, and as cold winters try them, if the growth is soft, they should not be grown in rich land. *J. S.*

THALICTRUM DELAVAYI.

The graceful habit and elegant foliage of the Thalictrums render them desirable plants for the back rows of the herbaceous borders. Their leaves are so elegantly cut and subdivided, that they may be used for table decoration or bouquet work in place of Adiantums, to some of which they present superficially a great resemblance. The flowers are usually yellowish or creamy-white, very elegant, but having the disadvantage of shedding the pollen too freely to please the orderly housewife. The present species is a new introduction from China, where it was discovered by the Abbé Delavay. It found its way to this country by way of the Jardin des Plantes at Paris. It has been in bloom for some time on the rockery at Kew, where its lilac-coloured flowers and elegant foliage have been very attractive. It is one of the best of recent introductions among herbaceous plants. Our illustration (fig. 19) was taken by Mr. Allen from a plant at Kew.

THE UTILITY OF FORESTS.

(*Concluded from p. 72.*)

Having enumerated all these things, I have, after all, only arrived at the threshold of forest science. In fact, the branches of learning mentioned above are, from this point of view, generally called the "auxiliary sciences." Forest science proper is generally divided into two main branches; the first of these teaches how to produce forests, and the second how to manage them.

"Forest Production" may be divided into the following four sections:—

1. Locality in relation to forest vegetation.

2. Sylviculture, or the creation, regeneration, and rearing of woods, until they become ripe for the axe.

3. Forest protection, which teaches how forests may be protected against man, animals (especially insects), plants (especially fungi), climatic influences, natural phenomena, &c. Such protection is afforded partially by laws passed by the legislature of the country, but chiefly by appropriate measures taken by the owner of the forest.

4. Forest utilisation, which deals with the technical qualities of timber; consumption of wood; the felling and shaping of trees; the disposal and transport of wood; the harvesting of other forest produce, such as litter, grass, fruits, bark, turpentine, caoutchouc, dyes, fibres, &c.; the impregnation of timber, forest saw-mills; manufacture of charcoal, &c.

The second branch, "Forest Management," deals with all the parts of forest science which influence the management, and of which I may mention:—

1. Forest policy, or consideration of the objects of management. This branch is based upon statistics, and it necessitates the elaboration of a method by which the interest derivable from the invested capital and the yield capacity of estates can be readily ascertained.

2. Forest organisation, or the principles according to which the general management of forest estates should be arranged.

3. Forest mensuration deals with the determination of the volume (or cubic contents) of trees and woods, their age, past and probable future increments.

4. The working of forests. Here the yield is ascertained and plans drawn up, which regulate the due execution of all forest operations, such as final cuttings, thinning, pruning, planting, and all other works, and all this in strict accordance with the objects of management.

The mere enumeration of these branches of study shows that forest science is a superstructure erected on the basis of many other branches of learning. Forestry is, however, also based upon empirical knowledge; hence the study of forest science, if it is to be fruitful, must go hand in hand with practical instruction in the forest; in other words, forest science and practical forestry must go together; neither the one nor the other by itself makes a forest expert.

The importance of employing really competent men in the management of forest estates, whether belonging to the State or to private owners, has led to the establishment of forest schools in most European countries. There are nine such schools in Germany alone. To show the position which they take, I may mention that last year the principal Professor of Forestry at Giessen, Dr. Hess, filled the post of honour of Rector of the University, and this year Dr. Gayer, Professor of Forestry, holds the same position in respect of the University of Munich.

Turning now to this country, we find at present two places where scientific forestry can be studied. As already mentioned, Dr. Somerville has commenced instruction in connection with the University of Edinburgh. The undertaking is quite in its infancy, and I am not in a position to say much about it. Dr. Somerville is now giving his first course of 100 lectures, in which he proposes to deal with certain chapters of botany and forestry. His principal difficulty is due to the absence of systematically managed forests in Scotland, where the theories taught in the class-room could be sufficiently demonstrated. As far as I am aware, the Scotch forests now in existence belong all to private owners, whose forest policy depends chiefly on the following considerations:—

1. The æsthetic effects of their forests.

2. The state of their exchequer.

3. The returns which their lands are capable of yielding if used as shooting-grounds.

4. Family considerations—whether the forests go, at the death of the present owner, to his own children, or some other branch of the family.

It is against human nature to expect systematic management extending over long periods, as long as the estates are subject to such considerations. At the same time, it will be a difficult task to bring about a change in these matters.

The Forest School at Coopers' Hill was established in 1885, and it forms part of the well-known Royal Indian Engineering College at that place. The whole institution belongs to the Government of India, and is consequently under the orders of her Majesty's Secretary of State for India in Council. The successful students enter the college in Septem-



Fig. 19.—Thalictrum delavayi: hardy perennial: flowers lilac. (see p. 124.)

ber, and of the time set apart for instruction, two years, or six terms, are spent at the college, and the last or seventh term on the Continent. Under the revised arrangement, which is expected to come into force this year, the students will spend eight terms at the college, and be instructed in the following subjects:—

By the Staff of the Engineering Branch of the College.—1, Inorganic Chemistry; 2, Physics; 3, Geology and Mineralogy; 4, Accounts; 5, Surveying; 6, Road Construction; 7, Drill and Gymnastics; 8, Geometrical Drawing; 9, Freehand Drawing; 10, German.

By the Special Professors of the Forest Branch of the College.—11, Chemistry of Soils and Vegetation; 12, Entomology; 13, Botany; 14, Forestry; 15, Elements of Law and Political Economy.

In subjects 1 to 7 the instruction is the same as that prescribed for engineering students. The instruction in geometrical drawing ceases at the end of the second term. In freehand drawing and German extra instruction is provided.

The instruction in chemistry of soils and vegetation is at present given by Professor A. H. Church, M.A., F.R.S.; the instructor in entomology is W. F. H. Blanford, Esq., M.A.; for botany we secured from the beginning Professor H. Marshall Ward, M.A., F.R.S., F.L.S., whose eminence in this branch is well known. The instruction in botany extends over elementary biology, organography, anatomy, systematic botany, physiology, and pathology; it comprises about 170 lectures, with work in the botanical laboratory, excursions to the country surrounding the college, and regular visits to the Kew gardens and museums.

For the instruction in the elements of law and political economy, we hope to secure the services of a retired member of the Indian Civil Service, who has written an excellent work, entitled, *A Manual of Jurisprudence for Forest Offices.*

The instruction in forestry has, up to date, been given by me; it is now contemplated to engage a second professor of forestry, and to double the amount of instruction hitherto given. The instruction extends over the several branches indicated above, and will comprise, under the revised arrangement, about 280 lectures, supplemented by practical instruction in our forest nursery in the adjoining Windsor forests, visits to more distant forests, such as the Esher Oak forests, the Beech forests around High Wycombe (in the centre of the chair manufacture), the New Forest, Forest of Dean, and High Meadow Woods, and the forests of several noblemen in Scotland.

As already indicated, the practical instruction cannot at present be completed in this country; hence at the completion of the course at the college, the students, who have qualified in the various subjects of study, proceed to the Continent, where they are taken charge of by Sir Dietrich Brandis, who, during a period of not less than three months, takes them to a number of the most interesting forest districts in Germany, Switzerland, and Austria, where they study the management of forests, which have been under systematic treatment for a long period.

This brings the instruction to a close, and the young men proceed then to India to take their place in the Forest Department of that country.

We have established at Coopers' Hill a forest museum, a botanical and entomological laboratory, and a forest nursery, besides the already-existing chemical and physical laboratories. By the kindness of the Commissioners of Woods and Forests, we are placed into direct communication with the Deputy Surveyors of the Crown forests, who do all in their power to assist us. The Windsor Crown Forests are within easy reach of the college, and they afford most excellent means for the study of forest botany and arboriculture. As to the study of sylviculture, they are, however, not adequate to our requirements, for reasons which are due to the objects for which these forests were maintained, a subject upon which I need not enter here. Suffice it

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to say, that there is a sufficient area of forest land outside Great Windsor Park for the purposes of instruction, and we are now in treaty with the Commissioners of Woods and Forests, with the view of an area of 1000 acres being made over to our management, and of their gradual conversion into a proper training ground for forest students. I have every reason to believe that an agreement will be come to at an early date.

And here I may add a few general remarks on this subject. As long as we have not a sufficient area of forests in this country which has been subject to systematic management on economic principles for a considerable period, our forest students must go to the Continent to see and study the management of such forests. But it seems to me that, considering the importance of the matter to India, our vast Colonies, and the mother country itself, we should not lose another moment to put certain forests in this country under systematic management, and to make sure that they continue to be so managed. It would be hopeless to expect private proprietors to do this, and we naturally turn to the areas at the disposal of the State. Now, there are certain areas under State management, the so-called Crown forests. They do not, however, belong to the State, but to the Crown, and consequently they are not altogether at the disposal of the former. In the general interest of forestry, however, an effort should be made to secure suitable parts of the Crown forests for our purpose, and I do not see why this could not be arranged. The management of these woodlands proceeds now on special lines, and the Commissioners of Woods and Forests, though ready to meet our requirements, will only do so by being paid for it, because they plead that they are expected to make the most of the estates. They put a high price on their land, because they count on its being taken up for building purposes.

While admitting that nothing can be said against the views of the Commissioners from their own point of view, I think the State, as such, should take a wider view of the matter, and arrange for the management of a suitable selection of areas, with the view of their becoming patterns of systematic forest management. Such a step would doubtlessly be of great benefit, not only to the mother country but also to India and the Colonies. And what is more, it could be done without in any way reducing the income now derived from such lands; on the contrary, these forests would gradually become more valuable, and yield an increasing return. The areas so treated would be available for any forest school which may be started in this country; but as Coopers' Hill is most favourably situated in respect of suitable Crown lands, it would be as well to develop the already existing school and to adapt it for the requirements of students who propose going to the Colonies, and for forest experts who desire to work in this country. Such students, if sufficiently grounded in the auxiliary sciences, need not necessarily go through the three years' course prescribed for Indian students; shorter courses suited to their requirements could easily be arranged with a comparatively small additional outlay.

Pending a further development of the college in the direction indicated above, I may mention that, under present arrangements, students not nominated for the Indian forest service are received at the college, as far as the available accommodation permits. Such students may pass through the course of instruction prescribed for the nominees of the Indian forest service, or they may be permitted to participate in the instruction given in certain subjects only. On attaining a prescribed standard, the students will receive, according to circumstances, either the college diploma in forestry, or special certificates showing in what subjects they have followed the instruction, and with what result. Students of the latter class will be required to abide by the general rules of the college, but they are not obliged to reside in it. If they elect to live outside, they will only pay for instruction according to the subjects which they take up.

Thus it will be seen that we have the nucleus of an institution, which only awaits the full support of the Colonies and of the mother country, to develop into an institution worthy of the best forest schools on the Continent. There is no reason why such an institution should not be self-supporting. *Dr. Schlich in the "Journal of the Society of Arts."*

PLANT PORTRAITS.

Ada aurantiaca, *Lindenia*, t. 135.

Angræcum eburneum, *Lindenia*, t. 136.

Arisæma speciosum, *Garden*, June 21.—A fine figure of an extrordinary plant.

Azalea indica var. J. T. D. Llewelyn, double Pink, edged with white. *Illustration Horticole*, t. 106.

Cypripedium Spicerianum, *Orchidophiie*, May, 1890.

Houlletia odoratissima var. antioquiensis, *Revue de l'Horticulture Belge*, June 1.

Nidularium princeps var. magnifica, *Gartenflora*, t. 1323.—The broadly strap-shaped leaves are green at the base, rosy-pink, deepening to crimson near the top.

Odontoglossum odoratum var. striatum, *Lindenia*, t. 133.

Oncidium sarcodes, *Lindenia*, t. 134.

Pear Morel's Favourite.—A seedling from Williams' Bon Chrétien. *Bulletin d' Arboriculture*, May.

Pescatorea Klabochorum, *Gartenflora*, June 15.

Vanda suavis, *Revue de l'Horticulture Belge*, July.

Vriesea Kittleliana, *Gartenflora*, June 15.—A hybrid between V. Barellesi × V. Saundersi

FLORISTS' FLOWERS.

"RUN" CARNATIONS.

Among the stands of self and fancy Carnations shown at Chiswick on the occasion of the annual exhibition of the National Carnation and Picotee Society, on July 22, were some fine and striking blooms of "run" Carnations. By a run Carnation, a florist means such an one as a scarlet bizarre, for instance, in which the white ground-colour is suffused with scarlet and flaked with maroon. I will not assert that a run scarlet bizarre presents a uniform character, but it generally does so. A run scarlet bizarre, therefore, by reason of the white ground becoming suffused with scarlet, ceases to be a bizarre, because the white ground is an essential feature. It is simply a flaked fancy, and may be shown in that class. The cause of running has been variously explained, and some ingenious theories have been advanced, but not one can be accepted as being quite satisfactory. The difficulty of assigning an actual cause is increased from the fact that a plant may throw a run flower on a stem producing three or four blossoms, all of which shall be correct excepting the run one. Stimulating composts have been named as a cause, but run blooms have appeared on plants grown in the poorest of soils. If poverty at the roots does not prevent running, it cannot be said that a rich soil causes it. Sometimes a particular district will exhibit run flowers of a certain variety, but it may be grown by several persons in that district under different conditions, and in varying soils. Mr. Dodwell thinks that "Carnations run more frequently when crude materials are employed; for instance, the loam has not been sufficiently ameliorated by the action of the atmosphere, or the manure not sufficiently decomposed, or the mechanical arrangement of the soil has prevented a proper drainage, and the removal of the fibre is likely to lead to this."

One of the most brilliant scarlet-flake Carnations grown in the present day is Sportsman, a sport from the scarlet bizarre Admiral Curzon. This occurred thirty-five years ago, and the sport has remained true to this day. Other cases could be mentioned; crimson bizarres and pink and purple bizarres have sported to purple-flakes; and P.P.B.'s to crimson bizarres and *vice versâ*.

At the Carnation Conference Mr. Harry Turner said no, but the testimony of other cultivators was the other way. Only recently, when staying with Mr. Samuel Barlow at Stakehill House, I put the question to him as to run flowers going back to their original form, and he told me that some plants of his new scarlet bizarre Robert Houlgrave, which ran in 1888, nearly all bloomed true scarlet bizarre in 1890; and this is not a solitary testimony. But a grower of Carnations for sale, though he may propagate from run plants, never sends them out as being flowers which are true to character, because he would suppose that the run form, even if only a temporary floral aberration, might continue through two or three generations at least. At the present time I have in bloom a run form of S.B. Robert Houlgrave; and what a striking flower it is!—rich scarlet-crimson flaked with maroon, brilliant in the extreme, and commanding the admiration of all who see it. *R. D.* [It is simply a case of sporting, and there may easily be a reversion to a previous condition. Ed]

PLANTS AND THEIR CULTURE.

Bulbs for Early Flowering.—The season is now close at hand when the gardener should take thought of his requirements for the winter supply of flowers from Dutch and other bulbs, and the sooner the order for these bulbs—and indeed all bulbs—is given, the better, the largest and best bulbs being those that are first sold. The Roman Hyacinths are the first to bloom, and should be the first to get potted, the earliest coming into flower in October. The bulbs of this variety of Hyacinth should be potted in two or three batches, according to the demand, and at intervals of three weeks or one month. There are a blue and a rose-coloured variety; but these are not so useful as the white. The paper-white Narcissus is useful for early flowering, and should be amongst the earliest potted. The double Roman Narcissus, another kind that can be had early in bloom, may be potted up with these.

I have noticed that the best flowers are from those bulbs that were potted in the second lot, that is when the bulbs are just about to start into growth. The bulbs should not be hurried into flower, but the roots should be allowed to be well in advance of the top-growth before being forced, and any neglect of this rule ends in failure. The Roman Hyacinths may be placed closer together in the pots than larger bulbs, but if very much crowded there will be a decrease of size in the flower-spikes. It is a good plan to place the pots of early potted bulbs on a bed of coal-ashes, and cover them with Cocoa-nut fibre to the depth of 6 inches, and failing Cocoa-fibre screened coal-ashes may be employed.

After the bulb-pots are placed on the bed a thorough watering should be given them, the covering material being placed over them when the surface has dried. A frame may be put over them as a protection from rain. Should Hyacinths be required at a very early date they may be placed, when potted, in a cool frame and the lights closed at night, and when the roots get to the sides of the pots the frame may be closed early in the afternoon. Early varieties of Tulips may also be potted as soon as they are obtainable, the early-flowering Duc Van Thol and the newer, Duc de Berlin, being the best. A few Allium Neapolitanum should also be included. The Snowdrop is a very acceptable flower at Christmas-time, in fact it may be bloomed at almost any time.

Freesias are easily grown when a few simple details are followed. They like a sandy soil, and some leaf-mould or decayed manure should be added to it, little or no water being afforded the bulbs till growth commences. Eight bulbs may be put in a 48-pot, or five or six in a smaller one and the pots plunged in fibre in a cold frame, taking care to uncover them before growth gets far advanced, and to keep the plants near the light when growing. F. refracta alba and F. Leichtlini major are the most serviceable for cut blooms. The bulbs may be potted at various times, so as to have flowers in succession. We pot early in August, September, and again in October. Freesias do well when grown for two seasons, allowing them to remain in their pots till August, and then shaking them out and re-potting them.

A few of the best kinds of Crocus may be potted for an early display in the cool conservatory, also bulbs of Scilla bifolia taurica, to give variety. *G. Wythes, Syon House, Brentford, W.*

REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS, JULY, 1890.]

The words "average," "over," or "under," as the case may be, indicate the amount of the crop; and "good," "very good," or "bad," indicate the quality.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND.										
ABERDEEN	Over; very good	Under	Average; good	Under; good	.....	.....	Average; good	Average; good	.....	John Forrest, The Gardens, Haddo House, Aberdeen
	Average	Average	Under	Under	.....	Over	Average; good	Over; very good	Under	R. Farquhar, Fyvie Castle Gardens, Fyvie
	Average; good	Under; bad	Average; good	Over; very good	.....	.....	Over; good	Over; good	.....	Francis Duncan, Dunecht House, Aberdeen
	Average; good	Under; bad	Average; good	Average; good	.....	.....	Over; very good	Over; very good	.....	——, Whitehouse
ARGYLL	Average	Under	Under	Average; good	.....	Much under; bad	Average; good	Average	.....	G. Taylor, Castle Gardens, Inverary, Argyll
AYR	Average	Average	Under	Over	.....	.....	Average	Over	.....	D. Murray, Culzean Castle, Maybole
	Average	Bad	Bad	Good	Average	.....	Good	Good	.....	Niel Mackinnon, Dumfries House, Cumnock
	Under	Under	Average; good	Average; good	.....	.....	Over; Black Currants under	Under; bad	.....	William Priest, Eglinton Gardens, Irvine
CLACKMANNAN	Under	Under	Under	Average	Under	Under	Plentiful	Average	.....	Thomas Ormiston, Alloa House Gardens, Alloa
DUMBARTON	Under; bad	Under; bad	Under	Average; good	.....	Under; bad	Over; good	Average; good	.....	James Mitchell, Camis Estean, Helensburgh
EAST LOTHIAN	Average; good	Under; good	Average; good	Over; very good	Under; good	Over; very good	Average; very good	Over; very good	.....	James Morrison, Archerfield Gardens, Drem
	Under	Under	Under	Under	Average; good	Over; good	Average; good	Over; good	Average	L. Dow, The Gardens, Newbyth, Prestonkirk
	Average; good	Under; good	Under; good	Under	Over; good	Over; very good	Under; good	Over; very good	.....	R. P. Brotherston, Tyninghame, Prestonkirk
FIFE	Under	Under	Under	Average	Over	Average	Under	Over	.....	W. Lumley, Broomhall, Dunfermline
	Under; bad	Under	Under	Bad	Under; bad	Under	Average	Average	.....	Robert Gossip, Crawford Priory, Cupar
	Average	Average	Under	Average; very good	.....	Average	Over; very good	Over; good	.....	George Ramsay, Fordell Gardens, Inverkeithing
FORFAR	Under; good	Failure	Average; good	Over; good; Morellos under	Failure	Under; good	Average; good	Over; good	.....	J. W. Whitton, Glamis Castle Gardens, Glamis
	Average	Average	Average	Average	.....	.....	Over	Average	.....	James Mitchell, Panmure Gardens, Carnoustie
	Under	Under	Average	Average	.....	Under	Over	Average	.....	William McDowall, Brechin Castle Gardens, Brechin
KINCARDINE	Over	Average	Average	Over; good	Average	.....	Average	Average; good	.....	J. M. Gairns, Arbuthnott House Gardens, Fordoun, N.B.
	Average; good	Average; good	Under; bad	Over; good	Under; good	Under; good	Over; very good	Over; very good	.....	Thomas Tocher, Brotherton Gardens, Johnshaven
KINROSS	Under; good	Under; bad	Under	Average; good	.....	.....	Under; good	Over; very good	.....	John Fortune, Blair Adam Castle, Blair Adam
MIDLOTHIAN	Average; very good	Average; very good	Average; good	Average; very good	Average; good	Heavy crop; very good	Abundant; good	Over average; very good	Average; good	Malcolm Dunn, Dalkeith Gardens, Dalkeith
MORAY	Under; good	Under; good	Under; very good	Average; good	Over; very good	Over; very good	Average	Over; bad	.....	Charles Webster, Gordon Castle, Fochabers
	Under	Under	Under	Average	Over; very good	Under	Over	Over; very good	.....	D. Cunningham, Darnaway Castle, Forres
NAIRN	Average	Under	Under	Under	Under	Average	Average	Average	.....	James Maitland, Cawdor Castle, Nairn
	Under	Average	Average	Average	Under	Under	Over; good	Over; good	.....	James Manson, Kilravoch Castle, Fort George Station
ORKNEY	Over; very good	Under	.....	Average; good	.....	.....	Over average; good	Average	.....	Thos. McDonald, Balfour Castle Gardens, Kirkwall
PEEBLES	Over; bad	.....	Under; good	Average; good	.....	.....	Abundant	Average; very bad	.....	Malcolm McIntyre, The Glen, Inverleithen
PERTH	Under; good	Under; good	Under; bad	Over; very good	Over; bad	Over; very good	Over; very good	Under; bad	.....	George Goodfellow, Kinfauns Castle Gardens, Perth
	Under	Over	Average	Over	.....	Over	Average	Under; bad	.....	J. King, The Gardens, Blair Drummond
	Good	Good	.....	Good	.....	.....	Good	Good	.....	John Robb, Drummond Castle Gardens, Crieff
	Under; bad	Under; bad	Walls under; bushes average	Average; very good	Over; very good	Under	Average; Black Currants under	Average; very good	.....	P. W. Fairgrieve, Dunkeld House, Dunkeld
	Average	Average	Under	Over	.....	.....	Average	Average	.....	George Croucher, The Gardens, Ochtertyre, Crieff
RENFREW	Under	Under	Failure	Average	.....	.....	Average; Gooseberries over	Over	.....	Henry Maxwell, Ralston Gardens, Paisley.
	Average; good	Average; good	Average; good	Average; good	Average; good	.....	Over; very good	Over; good	.....	Andrew Rae, Eastwood Park Gardens, Giffnock.
	Average; bad	Under	Average; good	Over	.....	.....	Under	Over; good	.....	Thomas Lunt, Ardgowan Gardens, Greenock, N.B.
ROXBURGH	Under	Under	Under	Average; good	Average	Under; good	Average	Under	.....	R. G. Milne, The Gardens, Minto, Hawick.
	Over; very good	Under	Victorias average	Very good	.....	Under	Very good	Very good	.....	David Melville, Elliston Gardens, St. Boswells, N.B.
STIRLING	Average; good	Under; bad	Under; good	Average; good	.....	Under; bad	Over; very good	Over; very good	.....	M. Temple, Carron House Gardens, Falkirk
	Under; good	Average; good	Under	Average; good	.....	.....	Average; good	Over; good	.....	Maurice Fitzgerald, Dunmore Park, Larbert
SUTHERLAND	Over; good	Under	Under	Over; good	.....	.....	Over; good	Average; good	Average	D. Melville, Dunrobin Castle Gardens, Golspie
WIGTON	Under; good	Under; bad	Average; good	Average; good	.....	.....	Over; very good	Over; good	.....	W. Cruden, Castle Kennedy, Stranraer
	Under; good	Average; good	Under	Average; good	Average; good	Average	Average; good	Average; good	Average	James Day, Galloway House, Garlieston
ENGLAND—NORTHERN COUNTIES.										
NORTHUMBERLAND	Under	Under	Under	Average	Under	Under	Average	Average	.....	A. B. C., Nunnykirk, Morpeth
	Over	Under	Under	Average; good	Average	Under	Average	Average	.....	George Harris, The Castle Gardens, Alnwick
	Average; very good	Under	Under	Over; very good	Average; good	Average; very good	Average; good	Over; very good	Under; bad	David Inglis, Howick Gardens, Lesbury

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
NORTHERN COUNTIES.										
WESTMORELAND	Under	Under	Under	Under	.....	.....	Plentiful	Over; good	Over	W. A. Miller, Underley, Kirkby Lonsdale
DURHAM.....	Under	Under	.....	Under	.....	.....	Average	Average	Under	R. Draper, Seaham Hall, Sunderland
	Under	Under	Under	Average	Over	Over	Over	Over	.....	Jas. Larkin, Castle Gardens, Bishop Auckland
	Under; bad	Under; good	Under; bad	Average; very good	.....	Over; good	Average; very good	Over; good	Over	John Short, Hummersknott, Darlington
	Over	Under	.....	Average	.....	Good	Good	Good	.....	R. Westcott, Raby Castle, Darlington
YORKS	Under; bad	Under; bad	Under; bad	Average; good	Average; good	Over; good	Under; good	Under; good	.....	Thomas Jones, Ribston Gardens, Wetherby
	Average; good	Under	Under	Under	Average	Average	Average	Average; good	Average	Robert C. Kingston, Brantingham Thorpe, Brough
	Under	Bad	Bad	Average	Average	Average	Good	Good	Good	Joseph Shaw, Nunappleton, Bolton Percy
	Under	Under	Under	Average	Average	Over	Average	Over	Average	Robert Cock, Edenthorpe, Doncaster
	Under	Under	Under	Average	Over	Over	Average	Over	Average	Wm. Chuck, Brodsworth Hall, Doncaster
	Average	Average	Bad	Bad	Good	Good	Abundant	Good	Average	William Culverwell, Thorpe Perrow Gardens, Bedale
	Under	Under	Under	Over; good	Average; good	Average; good	Under	Over; very good	Over; good	Thos. Lambert, Burton Constable, Hull
LANCASHIRE	Under; good	Under average	Under	Average	.....	.....	Under; good	Over; bad	.....	W. B. Upjohn, Worsley Hall Gardens, Manchester
	Under; good	Under; good	.....	Average; good	Average; good	Over; good	Average; very good	Average; very good	Walnuts average	Wm. P. Roberts, Cuerdon Hall, Preston
	Under; good	Average; good	Under; bad	Over; very good	Average	None	Over; very good	Average; good	Under	James Hathaway, Lathom House, Ormskirk
EASTERN COUNTIES.										
LINCOLN.....	Under; good	Under	Very much under	Under; good	Over; good	Over; good	Over; Gooseberries under; very good	Over; good	Over	Alex. S. Elder, Highfield, Gainsborough
	Under; bad	Under; bad	Under	Average	Average	Average; good	Over	Average; good	Under	James Seth, Florist, Thurlby, Bourne
	Under; bad	Under; bad	Under; bad	Average	Over; good	Over; very good	Average	Over; very good	Walnuts under; Filberts average	David Lumsden, The Gardens, Bloxholm Hall, Sleaford
	Under	Under	Under	Under	.....	Under; good	Under	Average; good	Average	J. Rowlands, Bardney Manor Gardens, Lincoln
	Average	Under	Under	Average	Over	Average	Average	Over	Average	J. Spilsbury, Blankney Hall, Sleaford
	Much under	Much under	Much under	Average	Over	Under	Average	Average	Average	Thomas Vinden, Harlaxton Manor, Grantham
CAMBRIDGE	Under; bad	Under; bad	Under; bad	Average	.....	.....	Gooseberries average; Black Currants and Raspberries under	Over	.....	Andrew Grant, The Vineries, Willingham
NORFOLK	Under	Under	Under	Under	Under	Under	Over	Average	Over	H. Batchelor, The Gardens, Catton Park, Norwich
	Under	Under	Much under	Average	Average	Under	Average	Over	Average	O. Real, Shotesham Park, Norwich
	Under	Under	Under	Average	.....	Under	Average; Gooseberries under	Average	Average	F. Lee, Lynford Hall, Mundford
SUFFOLK	Under; good	Under	Under	Average; good	Average; good	Average; good	Average; good	Over; good	Under	John Wallis, Orwell Park, Ipswich
	Under; bad	Under; bad	Under; bad	Morellos average	Under	Under; good	Over; good	Over; good	Under	Robert Squibbs, Ickworth, Bury St. Edmunds
	Under	Under; bad	Under; bad	Under	Average; good	Under; none	Average; good	Over; very good	Average	D. T. Fish, Hardwicke, Bury St. Edmunds
	Average	Average	Average	Under	Under	Under	Under; bad	Under	Under	J. Sheppard, Woolverstone Gardens, Ipswich
	Average; very good	Under; good	Average; good	Average; bad	Average; good	Over; good	Over; very good	Over; very good	Over; very good	H. Rogers, Rendlesham Gardens, Woodbridge
	Under	Average	Under	Average; good	Average; very good	Average; very good	Over; very good	Over; good	Average	Geo. Eden, Henham Gardens, Wangford
ESSEX	Under; good	Under; very good	Much under	Over; very good	Average; good	Under; good	Over; very good	Over; good	.....	Arthur Ocock, Havering Park, Romford
	Under	Under	Under	Average	Under	Under	Average	Over	.....	D. Donald, Knot's Green, Leyton
	Under	Bad	Bad	Average	Average	Bad	Average	Over	.....	W. Bowman, Hylands, Chelmsford.
	Under; good	Under; bad	Under; bad	Over; good	Average; good	Average; good	Average; good	Average; bad	Under; good	Jas. Douglas, Great Gearies, Ilford
	Under; bad	Under; bad	Failure	Over; good	Average; good	.....	Over; good	Over; good	Average	Chas. Butler, Parndon Hall, Gardens, Harlow
	Much under; very good	Under	Scarcely any	Over; good	Average; good	Under	Over; good	Over; good	Average	William Earley, Double House, Ilford
	Under; good	Under; good	Under; bad	Average; very good; Morellos over	Over; good	Average; bad	Under; good	Average; very good	Over; good	Jas. Vert, Audley End Gardens, Saffron Walden
MIDLAND COUNTIES.										
DERBY	Average	Under	Under	Average; good	.....	Average	Average; very good	Average; very good	Average	Thos. Keetley, Darley Abbey, Derby
NOTTS	Under; bad	Under; bad	Under; bad	Average; good	.....	.....	Over; very good	Over; very good	Average; very good	John Horton, Welbeck Gardens, Worksop
	Under	Under	Under	Average; good	Average	Average	Average; good	Average	Under	Samuel A. Woods, Osberton Gardens, Worksop
	Under	Under	Under	Good	.....	Under	Over	Over	Average	A. Henderson, Thoresby, Ollerton
LEICESTER	Under	Under	.....	Average; good	Average; good	Average; good	Over; good	Over; good	Under	Alfred Hamshere, Beaumanor Park Gardens, Loughborough
	Under	Much under	Much under	Early sorts under; Morellos average	Average; good	Over; very good	Average	Over; good	Under	William Ingram, Belvoir Castle Gardens, Grantham
	Under; bad	Under; bad	Under; bad	Average; good	Average; good	Average; good	Average; good	Average; good	Average; bad	G. O. Maynard, Cole Orton Gardens, Ashby-de-la-Zouch
RUTLAND	Under; bad	Under; bad	.....	Average	Under; bad	Average; good	Average; good	Average; good	Under	John Grey, Normanton Park, Stamford
	Under	Under	Under	Average	Average	Under	Average; good	Over; good	Average	Henry Mason, The Gardens, Bisbrook Hall, Uppingham
WARWICK.....	Under	Under	Under; bad	Over	Under	Under	Over	Over	Filberts over	Wm. Miller, Combe Abbey Gardens, Coventry

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
MIDLAND COUNTIES.										
WARWICK	Average	Under	Under	Average	Average	Average; good	Average	Average; very good	Average	James Rodger, The Gardens, Charlecote Park, Warwick
	Under	Under	.....	Average	.....	Under	Average	Good	Average	John Bowler, Caldecote Gardens, Nuneaton
	Under	Under	Under	Good	Under	Under	Good	Good	.....	T. Beddard, Stoneleigh Abbey, Kenilworth
	Under	Average	Under	Over	Under	Under	Over	Over; very good	Walnuts over, Filberts under	Robert Greenfield, Priory Gardens, Warwick
STAFFORD	Under	Average	Average	Average; good	Under	Under	Over	Average	.....	James Campbell, Biddulph Grange Gardens, Congleton
	Under	Under	Under; bad	Average	Average	Average; very good	Over	Over and good	Average	Henry G. Wilks, Sandon Hall Gardens, Stone
	Under	Under	Under	Under	.....	Average	Over; very good	Over; very good	Under	W. Ward, Little Aston Gardens, Sutton Coldfield
	Under; good	Much under; medium	Very much under; bad	Over; very good	.....	Under; good	Over; good	Average; good	.....	John Wallis, Keele Gardens, Newcastle
NORTHAMPTON	Under	Under	Under	Under	Average	Under	Average	Average; good	Under	Jas. Trigger, Milton Park Gardens, Peterboro'
	Under	Under	Under	Average	Average	Over	Average	Over	Average	Henry Birch, Castle Ashby Gardens, Northampton
	Average	Under	Under	Under	.....	.....	Under	Over	Over	W. S. Miller, Whittlebury, Towcester
	Under; bad	Under; bad	.....	Average; good	Under; bad	Under; bad	Under; good	Over; very good	Over; good	Henry Turner, Fineshade Abbey Gardens, Stamford
BEDFORDSHIRE	Much under; bad	Under; good	Much under; bad	Under; good	Average; good	Under; good	Under; good	Average; good	Much over; Walnuts average	Geo. Ford, Wrest Park, Amptill
	Over; good	Under; good	Much under; bad	Under; good	Over; good	Under; medium	Average; very good	Over; very good	Under; good	Wm. M. Baillie, Luton Hoo Park, Luton
	Under	Under	Under	Morellos average	Under	Under	Under	Average; good	Average	Alex. McKay, Woburn
	Under	Under	Under; bad	Under	Average	Under	Under	Average; good	Under; Walnuts plentiful	Charles Turner, Cranfield Court, Newport Pagnell
BUCKS	Under; good	Under; good	Almost a failure	Average; good	Over; good	Under; good	Average; good	Over; good	Over; good	Geo. Thos. Miles, Wycombe Abbey, High Wycombe
	Under	Under	Under	Under	Average	Under	Over; good	Over; good	Over; good	J. Smith, Mentmore, Leighton Buzzard
	Under	.....	Under	.....	.....	.....	Average	Average	Over	J. W. Shrimpton, The Gardens, Aston Clinton, Tring
	Under; very good	Under; very good	Under; bad	.....	.....	.....	Under; very good	Average; very good	Average	Giles Bloxham, Brickhill Manor, Bletchley
	Over; good	Over; good	Average	Average	Over; good	Over; good	Under; bad	Under; bad	Under	James Thomas, The Gardens, Shardeloes, Amersham
	Average; good	Under	Under	Under	Over; good	.....	Over; good	Average	Over; good	Charles Herrin, Dropmore, Maidenhead
	Average	Under	Bad	Average	Peaches average; Nectarines under	Under	Over	Over; very good	Over	W. Waters, Bulstrode Park, Gerard's Cross, Slough
	Under	Under	Under	Average; good	.....	.....	Over; very good	Over; very good	Over	Jas. Bone, Latimer Gardens, Chesham
HERTS	Under	Under	Much under	Under	Average	Under	Average	Over; good	Filberts average; Walnuts over	R. Ruffett, Panshanger, Hertford
	Under; good	Under	Under	Average	.....	.....	Over; good	Over; very good	Over	Thos. Hedley, The Gardens, Putteridge Park, Luton
	Under; bad	Under	Under; bad	Under; Morellos average	Average; good	Under; good	Much over; good	Over; good	Under	J. C. Mundell, Moor Park Gardens, Rickmansworth
	Average; good	Average; good	Under; good	Average; good	.....	Under; good	Average; good	Over; very good	Under; good	Joseph Thompson, Gorhambury Gardens, St. Albans
	Under	Under	Under	Under; Morellos average	Over	Under	Over; excellent	Over	.....	J. Kipling, Knebworth, Stevenage
WESTERN COUNTIES.										
GLOUCESTERSHIRE	Average	Under	Under	Average	Average	Under	Average; good	Over	Average	William Nash, Badminton Gardens, Chippenham
	Over; good	Average; good	.....	Average; bad	Average; good	Under; good	Average; good	Over; good	Over	Alexander Scott, The Gardens, Sherborne House, Northleach
	Under	Under	Under	Average	Over	Average	Over	Over	Over	W. Greenaway, The Gardens, Dodington, Chipping-Sodbury
	Under; very good	Under	Under	Average; good	Average	Average	Average; good	Average	Over; very good	John Sowray, Highnam Court Gardens, Gloucester
	Average	Average	.....	Average	Average; good	Under	Average; good	Average	Under	Arthur Chapman, Weston Birt Gardens, Tetbury
MONMOUTH	Under	Under	Under; good	Average; good	.....	Under; good	Average; good	Average; fair	Over	Thomas Coomber, Hendre Gardens, Monmouth
HEREFORD	Under; clean	Under; bad	Under; bad	Sweet under; bad; Morellos good	Over; good	Over; good	Average	Average	Under	Kenneth McKenzie, Allensmore Court, Fram Green
	Under; good	Under average	Under average	Over; good	Average; good	Over; good	Over; good	Over; good	Average; good	A. Ward, Stoke Edith Gardens, Hereford
WORCESTER	Under; good	Under; good	Under; bad	Average; good	Over; very good	Over; very good	Average; good	Over; very good	Average; bad	William Crump, Madresfield Court, Malvern
	Under; good	Under; good	Under; good	Under; good	Over; good	Over; good	Average; good	Over; good	Average	John Austen, Witley Court Gardens, Stourport
	Under	Under	Under	Under	Average	Under	Average; good	Average; good	Average	James Aston, Cotheridge Court, Worcester
	Under; good	Under; very good	Under; bad	Over; very good	Under; bad	Over; very good	Over; very good	Over; good	Over; good	Walter Child, Croome Court, Severn Stoke
SHROPSHIRE	Under; good	Under; good	Under	Average; good	Over; very good	Under; good	Over; good	Over; very good	Under	A. S. Kemp, Broadway, Shifnal
	Under; very good	Under; very good	Much under; poor	Average; good	Over; very good	Over; very good	Under; poor	Over; very good	Average; good	James Louden, The Quinta, Chirk
CHESHIRE	Average	Under	Under	Average	.....	.....	Average	Average	.....	Robt. Mackellar, The Gardens, Abney Hall, Cheadle
	Under; good	Under; good	Under; bad	Average; bad	Under; bad	Under; bad	Over; very good	Average; good	.....	Jno. V. Smith, Arley Hall Gardens, Northwich
SOUTHERN COUNTIES.										
MIDDLESEX	Much under	Much under; bad	Under; bad	Average; Morellos good	Average; good	Under; bad	Average; good	Average; very good	.....	Geo. Wythes, Syon House, Brentford
	Under	Under	.....	Average	Average	Under	Average; good	Average	Average	W. Bates, The Gardens, Poulett Lodge, Twickenam
	Under	Under	Under	Average	Average	Under	Average; good	Over; very good	Average	Alex. Dean, Bedfont

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SOUTHERN COUNTIES.										
MIDDLESEX	Under	Average	Under	Average; good	Average; good	Under	Over; good	Over; very good	.....	John W. Odell, The Grove, Stanmore
SURREY	Under; failure	Under; bad	Under; bad	Average	Average	Average	Over; very good	Over; very good	Average	A. Evans, Lythe Hill, Haslemere
	Under; good	Average; good	Under	Under	Average; good	Under	Over; good	Over; good	Average; good	John Tanner, Tandridge Court Gardens, Godstone
	Under; good	Under; bad	Under	Average; bad	Average; good	Average; good	Average; good	Over; good	Average; good	James Gold, High Ashurst Gardens, Dorking
KENT	Under; bad	Under; bad	Under; bad	Average; good	Average; good	Under; bad	Over; very good	Over; good	Over	J. Moore, The Gardens, Blendon Hall, Bexley
	Under; good	Under	Under	Under	Under	Under	Average; good	Over; good	Average	Wm. Craik, Hothfield Place, Ashford
	Under; good	Under; good	Under; good	Average; good	Under; good	Average; good	Average; good	Over; good	Average	G. A. Don, Bedgebury Park, Hawkhurst
	Under	Under	.....	Under	Average	.....	Average; good	Over; very good	.....	C. Sutton, Chevening Park, Sevenoaks
SUSSEX	Under; good	Under; good	Under; very poor	Average; good	Average; good	Under; poor	Over; good	Over; good	Average	Joseph Rust, Eridge Castle, Tunbridge Wells
	Average	Slightly under	.....	Average	Under	.....	Average	Average	Over	Alex. Reid, jun., Possingworth Gardens, Cross-in-Hand
	Under	Under	Under	Average	Average	Under	Average	Under	Average; Walnuts over	Fredk. Geeson, Cowdray Park, Midhurst
	Under	Under	Much under	Morellos average	Average	.....	Average; Red Currants light	Average; good	Average	F. Rutland, Goodwood, Chichester
HANTS	Much under	Under	Failure	Under	.....	.....	Average	Over	.....	T. D. Myles, Appley Towers, Ryde, Isle of Wight
	Under; good	Under; good	.....	Over; very good	Average; good	Average; very good	Over; very good	Average; good	Average	A. Maxim, Heckfield Place, Winchfield
	Average; good	Under; good	Under	Over; very good	Peaches over; good	.....	Over; very good	Over; very good	Average	E. Molyneux, Swanmore Park Gardens, Bishop's Waltham
	Under	Under	Under; bad	Under	Average	Under; bad	Average; good	Over; good	Average	William Smythe, The Gardens, Basing Park, Alton, Hants
BERKS	Under	Under; very bad	Much under	Average	Average	Under; very bad	Average	Average	Under	James Tegg, Bearwood, Wokingham
	Under; good	Under; fair	.....	Average; good	Average; good	Average; good	Under	Over; very good	Average	J. Rose, Lockinge Gardens, Wantage
	Under	Under; walls average	Under; bad	Under	Good	Average; good	Average; very good	Over	Over	Robt. Fenn, Sulhamstead, Reading
	Average; good	Average; good	Under; bad	Over; good	Average; good	None	Over; very good	Over; good	Over; good	George Stanton, Park Place, Henley-on-Thames
WILTS	Under; bad	Under; bad	Under; bad	Under; bad	.....	Under	Under	Average	Under	Thomas King, The Castle Gardens, Devizes
	Under	Under	Scarcely any	Average	Under	Under	Over; good	Average	Under	H. W. Ward, Longford Castle, Salisbury
	Average; good	Under	Under	Average	Under	.....	Over	Over	Over	Charles Warden, The Gardens, Clarendon Park, Salisbury
SOUTH-WESTERN COUNTIES.										
SOMERSET	Under	Under	Under	Average	Under	Under	Average	Over; good	Average	William Hallett, Ossington House Farm, Bridgwater
DORSET	Average	Average; good	Under	Average	Average	Under	Over; very good	Over; good	Average	T. H. Crasp, Canford Manor Gardens, Wimborne
	Under	Average	Under	Average	Under	Under	Average	Average; very good	Over	William P. Leach, Bryanston Gardens, Blandford
DEVON	Average	Under	Under	Under	Under	Under	Good	Over; very good	Average	James Enstone, Wear, near Exeter
	Under; good	Under; good	Under; good	Over; good	Average; good	.....	Over; good	Over; good	Average	R. J. Barnes, The Gardens, Stoodleigh Court, Tiverton
	Average	Under	Under	Average; good	Under	.....	Over; good	Good	Average	Geo. Baker, Membland, Plymouth
CORNWALL	Under	Under	Under	Under	Average	Under	Average; good	Average; bad	Over	James Murton, Pencalenick, Truro
	Under	Under	.....	.....	Under	.....	Average	Average; bad	.....	A. Mitchell, Tehidy Park, Camborne
	Under	Under	Under	Under	Under	.....	Average	Average	Average	George Knox, The Gardens, Port Eliot, St. Germans
	Average; bad	Average; bad	Under	Average; bad	Under; late	.....	Abundant; bad	Abundant; bad	Average; late	C. Lee, Boconnoc Gardens, Lostwithiel
WALES.										
CARMARTHEN	Average	Under	Under; bad	Average; good	Average	.....	Average; good	Under; bad	Average	Lewis Bowen, Edwinsford, Llandilo
CARNARVON	Under	Under	Under	Under	Under	Under	Average	Average	.....	Allan Calder, Vaynol Park Gardens, Bangor
DENBIGH	Average; good	Under	.....	Over; good	Over; good	Over; good	Over; very good	Over; very good	Under	P. Middleton, Wynnstay Gardens, Ruabon
GLAMORGANSHIRE	Under; good	Under	Under; good	Under	Average; good	.....	Over; very good	Over; good	Average; good	Richard Milner, Penries Castle Gardens, Swansea
	Average	Under	Under	Over; good	Average; good	Under	Over; very good	Over; very good	.....	T. Muir, Margam Park, Port Talbot
MERIONETH	Average; good	Under	Average	Average; good	.....	Under	Under	Over; good	Average	Jas. Bennett, Rhug Gardens, Corwen
PEMBROKE	Average	Over	Under	Average	Bad	.....	Good	Under	Average	George Griffin, Slebeck Park, Haverfordwest
IRELAND.										
ANTRIM	Under; bad	Under	Under; bad	Average; good	.....	.....	Over; very good	Average; good	.....	George Porteous, Garron Tower, Belfast [Armagh
ARMAGH	Under	Under	Under	Average; good	Under	Under	Average; good	Average; good	Average	Thomas Sheasby, Castle Dillon,
DOWN	Average	Average	Average	Average	.....	Under	Average; good	Average; good	.....	Jas. Taylor, Mountstewart, Newtonards
WESTMEATH	Average	Under	Under	Average	.....	.....	Over; good	Over; good	Under	John Igoe, Gardenvale, Athlone
KILKENNY	Under	Under	Under	Average	.....	.....	Average	Over; good	Average	William Gray, Woodstock, Inistioge
DUBLIN	Under	Under	Under	Average	Average	Average	Under; good	Over; good	.....	J. Smith, Viceregal Gardens, Dublin
CHANNEL ISLANDS.										
JERSEY	Average; good	Under; good	Under	Under; good	Under; good	Under	Average; good	Average; very good	.....	Chas. B. Saunders, St. Saviour's
GUERNSEY	Over; very good	Average; good	Under	Under	Under	Under	Average; good	Average; bad	.....	C. Smith & Son, Caledonia Nursery
ISLES OF SCILLY	Under	Average	.....	.....	.....	.....	Under	Average	.....	J. Jenkin, Tresco Abbey

The Orchid Houses.

The East India-house.—The grandest species in flower at this season are Cattleya Howiana and others of the C. aurea section, which it may be said are generally grown in houses that are too cold for them. The most lovely of all the Cattleyas flowering at this season are Dowiana and its varieties; C. Sanderiana, and C. Hardyana. These Cattleyas do well when grown under similar conditions, and either in baskets or pans hung up close to the roof; and they are not the unmanageable plants which so many growers believe them to be. Another beautiful Orchid for the months of July and August is Saccolabium cœleste, plants of which may sometimes be seen with a dozen flower-spikes. This plant grows well if hung up in a basket of sphagnum moss and crocks. The unsettled weather should remind the Orchid cultivator that the heat and atmospheric moisture of his houses will require careful attention, the latter especially, or rotting will be brought on in many kinds of plants; and it will be advisable to maintain the temperature at not less than 72° by night.

The Intermediate House.—The pretty Dendrochilum filiforme is now in flower in this house, and although it may not be considered of much account by those who have seen but a few spikes on a plant, when it is found with from 50 to 100 spikes it is a plant to admire. Pleiones are now finishing their growths, and P. concolor and P. lagenaria are ready for removal to the resting house, where they will be kept watered as regularly as during growth, no drying off of the plants being practised.

An Orchid which requires much care is Epidendrum Wallisii, it being one that is apt to be infested with thrips, which take up their quarter in the middle of the young growths. Miltonia vexillaria should also be examined almost daily, or the young growths will be disfigured for the rest of the year. The minimum night temperature may be 62°, and unless the weather improve, the moisture in the air of the house should be reduced. *A. G. Catt, Parkfield, Worcester.*

Fruits Under Glass.

Peaches and Nectarines.—In the earliest houses ripening leaves and shoots will now present themselves, and it is of importance that this ripening process should not be hurried, otherwise bud-dropping and the imperfect setting of fruit will certainly occur next season. The premature loss of leaves from attacks of red-spider or otherwise will also bring about these evils; therefore the importance of giving the fullest ventilation, removing the entire lights if possible, and keeping the foliage clean and healthy as long as possible, will be obvious; and, moreover, abundance of water should be afforded the roots, alternating the ordinary watering with liquid manure. The final thinning out of exhausted shoots, and the arranging of the shoots of the current year at about 4 inches apart, but not shortening them, and in doing this endeavouring to secure a number of young shoots from the base of the old branches.

Just before the leaves fall is the best time of year to extend or to renovate the tree borders. It is best done piecemeal annually. All stone fruits delight in strong calcareous loam, which should rest on good drainage; but if the loam is of a retentive character, or liable to become so when the roots and fibres have decayed, one load of mortar rubble, one load of wood-ashes or charcoal, and 2 cwt. of crushed bones, may be added to six of the loam. If a border is 2 feet in depth, it is ample. When commencing, open a trench at the extremity of the roots, and carefully dig out the old soil with a digging-fork, preserving all rootlets, until the limit is reached at which further disturbance must cease. After doing this, the drainage should be cleared out and replaced, and a layer of turves placed over it, and the compost filled in at once, placing the roots in radial fashion, and pointing slightly upwards. As a finish, build up a boundary wall of turves, making allowance for shrinkage, care being, however, taken to make the border firm as the work proceeds. In two days afterwards a thorough watering and a mulching of spent manure should be afforded the border, and the trees should be lightly syringed, and shaded during hot sunshine for a few days. It should be understood that only one quarter section of a tree is done annually on trees that are forced. It is not well to place plants in pots on the fruit borders during autumn and winter; but if it be inevitable, the pots should be raised 1 foot above the border on stages, &c. If an early house is to be planted, my selection would be the following:—Alexander, Hale's Early, and Royal George Peaches, with Lord Napier and Elruge Nectarines, all trees being grown on the extension system.

Mid-season houses may have similar treatment, but at a slightly later stage, and previous to the fall of the leaves, as it is the leaves which give impetus to rapid root action after disturbance. My selection of varieties for the midseason houses would be—Abec, Grosse Mignonne, Stirling Castle, and Bellegarde Peaches.

In late houses containing fruit, use every endeavour to swell up the fruit, urging or retarding as may be necessary, and using the syringe with judgment, for if water remains on the nose of the fruit for any length of time, it is apt to "spot" the skin and set up decay. Ventilate the houses freely by day, and less so by night. Keep the leaves clear of the fruits, tie down shoots as they advance and cut away superfluous shoots, and generally follow out previous instructions.

Cucumbers.—Sow Telegraph for winter growing, and keep the plants stocky by careful ventilation; and when large enough, plant out in large pots, which are preferable to beds in the winter. Old plants should be kept thin in bine, and not overcropped. Thin out shoots and fruits at short intervals, syringing less and less as the nights lengthen. *N. Crump, Madresfield Court, Malvern.*

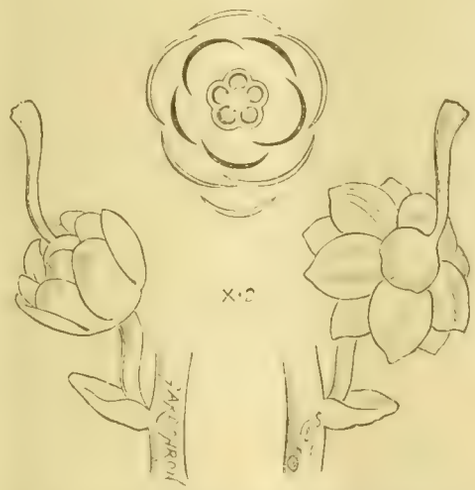


Fig. 20.—Green-flowered Antirrhinum, seen from the side and the front, with diagram showing the relative position of the parts. (See text.)

Green-flowered Antirrhinums.

A correspondent recently sent us a flower-spike of an Antirrhinum which, instead of producing the usual irregular "Snap-dragon" flowers, bore regular green flowers, as shown in the accompanying diagrams (fig. 20). The calyx was normal, or nearly so, but the corolla was represented by five free, equal, green segments, like the sepals, and alternate with them. No stamens were formed, and the ovary consisted of five carpels instead of the usual two. The flower thus presented an illustration of regular peloria, together with virescence of the petals, a deficiency of stamens, and an increase in the number of carpels. Arrest of development, and possibly reversion to a more primitive condition of affairs, may partly explain the phenomena; but what circumstances led to the arrest are quite unknown. The flower has much interest for the naturalist, but little for the florist.

The Hardy Fruit Garden.

Hints on Work.—The trees on walls should have the leading shoots fastened securely, and superfluous ones removed. Fruits of Apricots, now ripening, require protection from slugs, snails, wasps, flies, and, worst of all, the earwig. In some localities the ant is troublesome, and its nests must be sought for and destroyed. If that be not done, the ants may be caught in jars with a little honey and water put in them, and placed at the foot of the trees. Earwigs may be trapped in short pieces of Bean-stalk stuck among the branches, these traps being examined daily, and the insects killed.

Fruit Protection.—When the nets are no longer wanted for the Strawberry beds, they should be placed over Currant, Gooseberry, and Raspberry quarters. Before putting up any netting over bush fruits, clear away all weeds by hand, hoeing amongst ripening fruit being unadvisable, and if done in showery weather it is almost useless.

Figs, if old, and the roots confined within walled pits or borders, should be watered with diluted liquid manure once a week, if the weather be dry. The fruits will also require attention, so that they do not become deformed from want of space to grow; and they will require to be thinned out somewhat where too many have formed. All fruits showing after this date should be rubbed off, as they will not ripen, but fall off in early winter, after having taken up some of the energy of the tree. Cut out all weak shoots and pinch the points of those that are left, leaving on each six leaves if shoots are not required for filling up the wall.

Currant and Gooseberry Bushes as soon as the fruit is gathered should have some of the young shoots removed from the middle of each, and also from the sides so as to keep them in bounds, having regard to their size and position. By some of the pruning being done now, the bushes will benefit by a freer admission of light, and the winter pruning be lessened in amount.

The Fruit Room should be scrubbed out and whitewashed, and any painting done if it be required, afterwards throwing open the windows and doors to sweeten it before placing any kinds of fruit in it. *A. Evans, Lythe Hill, Haslemere.*

The Kitchen Garden.

Tomatos in the Open.—If strong plants were put out at an early date, and the management of them since that time in the way of timely stopping and thinning of the shoots has been good, the forwardest fruit will now be verging on ripeness, and should be gathered when sufficiently ripe. When the quantity is greater than can be consumed daily, the fruit may be placed in an unused pit or house. By the early removal of ripening fruits the plants get relief, and continue in good bearing for a long time. Root waterings may be afforded them, and occasionally clear manure-water when a good quantity of fruit is set, and it should always be given in a tepid state. Keep side shoots removed, and thin the large clusters somewhat, by taking off small and deformed fruits.

Turnips.—Sow a large breadth for winter use, selecting hardy varieties, and thin out those that are large enough before injury results from crowding, taking advantage of dull or showery weather for this kind of work.

Winter Spinach should now be got in, sowing the seed rather thinly in drills on ground which is in good heart. A border that has full sun should be always selected for this crop, growth there being more rapid than elsewhere. If the ground be heavy, burnt garden refuse, with a sprinkling of soot, should be put into the drills before sowing the seeds.

Cabbage.—If the seed for the main early spring crop is not yet sown, there should be no further delay, or the plants will not be as strong as they should to withstand frost. To obtain the best hearts I prefer to plant on rich, firm soil. Do not sow the seed thickly, but make the bed large enough to hold the required number of plants, and some to fill up gaps. The smaller plants will form a succession to the larger ones.

Dwarf Beans.—Make another sowing on a warm border in southern districts. *H. Markham, Mereworth Castle, Maidstone.*

EDITORIAL NOTICES.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

NEWSPAPERS. — *Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

MONDAY,	AUG. 4	Epworth. Northampton (two days). Mansfield.
TUESDAY,	AUG. 5	Leicester.
WEDNESDAY,	AUG. 6	York Florists.
SATURDAY,	AUG. 9	Erewash Valley.

SALE.

FRIDAY,	AUG. 8	Imported Orchids, by order of Mr. F. Sander, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—63°.1.

The Fruit Crops.

THE reports with which we have been favoured by our correspondents as to the condition and prospects of the fruit crops throughout the length and breadth of the land are by no means satisfactory. They add one more to the long list of annual reports of a similar character which should be studied by those who hold exaggerated ideas as to the advantages to be gained by the farmer by the extensive cultivation of fruit in this country. We do not disparage the extension of fruit culture under certain circumstances, and to a limited extent, by competent persons—far from it; we only wish to point out to novices the necessity for caution before embarking in rash enterprises. The staple fruit crops—Apples and Plums—are almost everywhere deficient; Damsons and the Victoria Plum, which may generally be counted on, are this year almost an utter failure. Cherries have been fairly plentiful in Kent; Walnuts and other Nuts show a better record than some other fruits. Turning to "bush fruit" and "soft fruit," the returns are more favourable. Strawberries have been abundant, but the wet season has rendered them soft, tasteless, and bad travellers. Red Currants have borne well, but Black Currants are poor. The preservers will be, and have been busy. But those whose thought is for Apples, will experience much disappointment. Our advices from America and Nova Scotia are, strange to say, almost equally unfavourable as to the production of Apples. Those then, who are favoured with a crop, will rejoice in the prospect of a fair price for their products.

In our next issue we shall print the numerous detailed observations by which we have been favoured by our correspondents, and later on a similar account of the Potato Crop.

The Potato Disease.

THE conditions have been favourable this season for the development of the disease; so far, however, the amount of disease registered, though considerable, has not been in proportion. Possibly the tubers and haulm are showing increased powers of resistance, which will further increase by hereditary accretion, as is the case in similar instances. The daily papers announce a very serious amount of disease in the south and south-west of Ireland, which, if true, is a very distressing circumstance, and one which leads us again most urgently to advocate the propriety of doing something to mitigate the effects of the disease. Because we cannot stamp it out wholly, that is no reason why we should not palliate it as far as we can. That we have the power of doing so to a very large extent is shown by the carefully conducted experiments made at Chiswick and elsewhere. We specially desire to call renewed attention to the very remarkable results obtained in 1888, when it was conclusively shown, as recorded in our columns, November 17, 1888, p. 572, that sixteen per cent. of the tubers might be saved, as it were, at the very last moment, when the case appeared hopeless. This practice could easily be carried out in Ireland. It needs only a spade, and arms to wield it. The application of copper sulphate in solution has also been practised with success in France, but we are not disposed to recommend its adoption in Ireland till it has been further tested here. The proportions recommended by M. PRILLIEUX are 6 kilos of sulphate of copper (say 13¼ lb.), an equal quantity of lime, and 1 hectolitre of water = 22 gallons. This should be sprayed on the foliage immediately the disease is seen on the leaves. The tub in which the mixture is made should be of wood, or earthenware, and the syringe used should be of brass, not of zinc or iron. The use of such a poisonous substance is not lightly to be entrusted to the hands of ignorant peasants. The earthing up process, however, is free from all danger, easy to carry out, and, without question, advantageous. The Minister of Agriculture, and specially those responsible for the government of Ireland, would do well to circulate information in Ireland as to the method, and especially as to the results obtained at Chiswick.

NOMENCLATURE OF FERNS.—We have received the following letter from Mr. LOWE, to whom an appeal was made to use his influence to reform the nomenclature of Ferns:—"With regard to the multiple names of varieties, I am not myself responsible for this mistake. The attractive variety mentioned on p. 102 was developed from a twin-bulbil with the one exhibited by Mr. BALDWIN, of Tintern (for plants from bulbils vary), from the stem of a variety named by the late Colonel JONES Polystichum angulare var. divisilobum plumosum densum (!). In my new handbook it is described under section plumoso-divisolobum as imbricatum, from its extremely dense imbricated character. Baldwinii is another equally attractive variety in the same section. I thoroughly agree that the nomenclature is cumbersome; descriptive names are desirable as far as pointing to a well-marked character, but they should not be extended to a number of characters. The difficulty in any change is the confusion that might arise, yet this can be avoided by dividing the several species that have an overwhelming number of varieties into sections. For instance, plumosum cristatum could be cristatum in section plumosum, &c. It is only in Scolopendrium vulgare, Aspidium angulare, and Asplenium Filix-fœmina that such subdivision is at the present moment absolutely necessary, although some other species are rapidly becoming numerous in varietal forms. In answer to Professor BOWER'S remarks, I may explain that in dividing the prothalli into several parts, that when split into two, fronds were formed on both divisions, whilst when cut into four parts, although they all grew, and although divided in 1888, are still growing; but they have not shown any signs of a frond. May not this be accounted for by supposing the male organs to be on one division, and the females on another? Great care was taken in all the details of the experiment, even to isolation, and if these experiments should be repeated in a laboratory the same results may be predicted. *E. J. Lowe.*" The cumbrousness of the nomenclature of Ferns arises from the unnecessary and undesirable admixture of three things—nomenclature, description, and classification, all of which are essential, but which should be kept separate. When we have occasion to speak of JOHN SMITH, we do not, except under special circumstances, think it necessary to mention his grandfather's or father's name, or his residence, or whether he is tall or short, stout or lean, with a Roman or a Grecian nose—we simply say JOHN SMITH, and leave other details to be obtained from the register or the directory, and this is what should be done in the case of Ferns or other plants.

CLETHRA ARBOREA. — This beautiful, old-fashioned greenhouse shrub is far less often seen than its beauty warrants. It may be that it takes up too much room in the house. In any case, no one who sees the beautiful specimens cultivated by Mr. WYTHES in the gardens at Syon, could fail to admire it. The leaves are rather thick, lanceolate, very deep green; the inflorescence a spreading panicle, borne at the end of the shoots, each branch of the panicle 6 to 8 inches long, downy, with very numerous, white, bell-shaped flowers, each about half an inch long, the segments rounded, spreading, and rather reflexed. It is a native of Madeira, where it forms a tree, the timber of which is used for poles and other purposes. The other species of the genus are American, Malayan, and Japanese, a circumstance which sets the botanist speculating how or why this particular species grows in Madeira, and nowhere else. It was figured in our columns in 1889, vol. vi., but the figure, though correct, by no means gives an adequate idea of the beauty of the shrub.

COLOURS OF PLANTS.—The texture and translucency of flowers and leaves greatly modify, says Professor CHURCH in the *Journal of the Society of Arts*, the hues of the colouring matter they contain, and of the light which they reflect. The peculiar glistening of the cell walls in the coloured tissues of flowers is a case in point; it is sometimes erroneously spoken of as crystalline. The distribution of the various colouring matters of flowers in the cells, when the coloured tissues are examined under the microscope, is seen to be much less regular than might be imagined, and is doubtless one of the causes of the peculiar chromatic beauty of many flowers. In speaking of the colours of plants, some reference must be made to the green of foliage. If the fully-developed leaves of a forest tree in summer sometimes tend towards a certain heaviness and monotony of hue, still there is, even in this case, a degree of variety present. Some leaves are in shadow, some transmit the incident light, some reflect the blue of the sky or the grey of clouds, some display in perfection their local colour, and some show in different parts the various hues just indicated. And then, too, it must not be forgotten that the green colour of foliage varies with its age, and that it always possesses a singular characteristic which distinguishes

it from other greens; for if we place a spray of green leaves upon a piece of green cloth, or of green paper resembling it in general hue, we shall yet find that the natural pigment differs materially from the artificial in its chromatic constituents. To prove his you need not have recourse to prismatic analysis; you have only to illuminate both surfaces with red light, or to inspect both through a piece of red glass, to see a very striking difference, especially noticeable with the yellowish-green foliage of young branches.

Chrysanthemum carinatum.—In the variety shown at Chiswick recently by Messrs. Hurst some curious facts may be noted, as to the form, colour, and movements of the florets. The outermost series are arranged in two or three rows of strap-shaped yellow female florets. Within these come two or three rows of purple florets, half the length of the yellow ones, and intermediate in form as in position between the true ray-florets and those of the disc, less regularly tubular than the one, less irregularly ligular than the other and female. The disc is made up as usual of very numerous purple regularly tubular hermaphrodite flowers. The fruits are deeply winged in all cases, whence the name, but whilst those of the two outer series have the two wings unequal in size, the wings of the innermost series or disc-florets are regular, or nearly so. But these structural peculiarities are not so conspicuous or so interesting as the movements of the yellow ray-florets. In full sunshine these spread horizontally, so that the purple disc is shown surrounded by a golden aureole. As the sun goes down, down go the yellow florets too; the consequence is, that the purple disc alone is visible, and the yellow florets are hardly to be seen unless specially looked for. This happens when the flowers are cut and placed in water. We have had some on our study table, and have been interested to see in the morning one flower, in the evening apparently another!

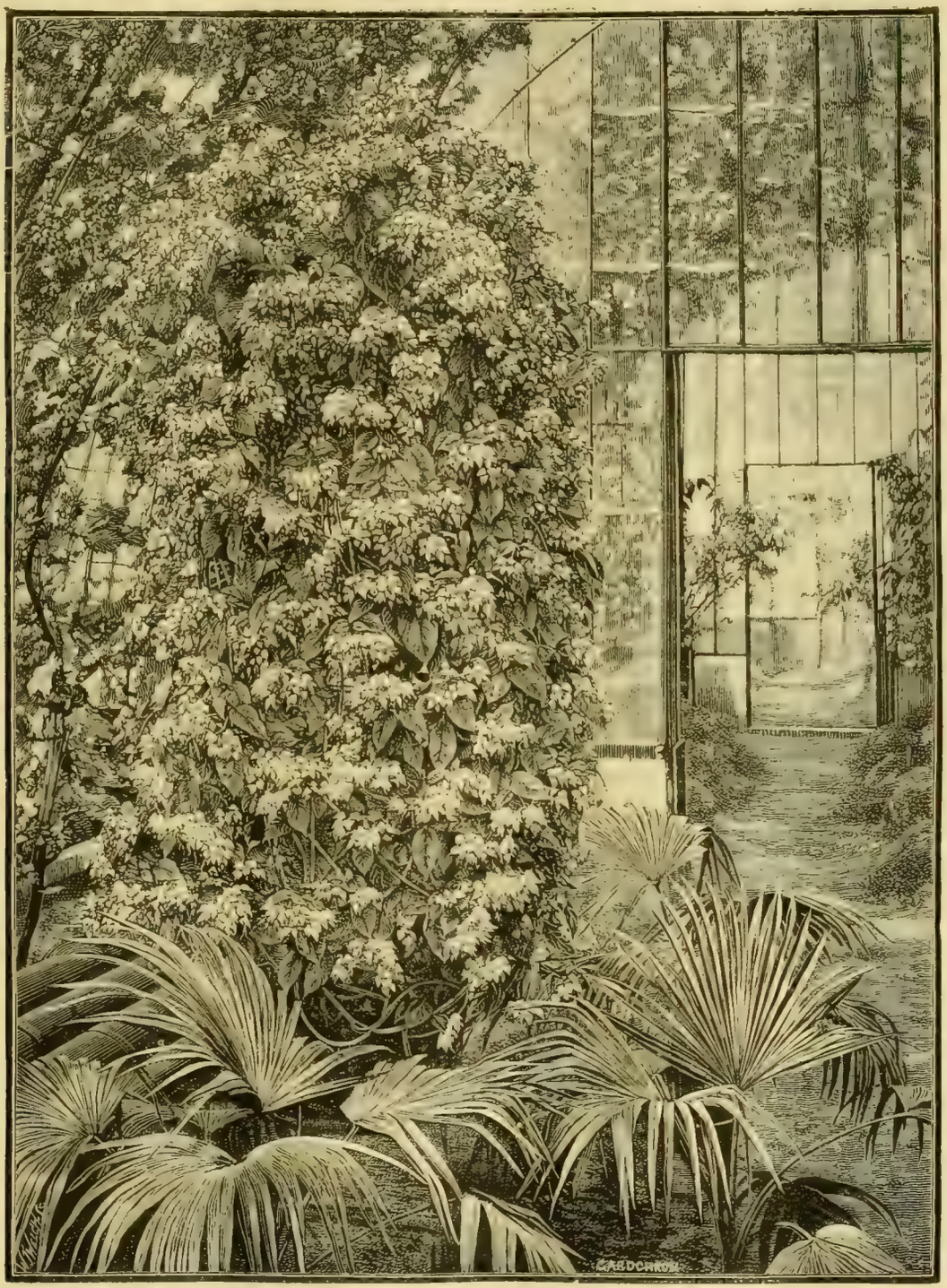


Fig. 21.—A specimen clerodendron balfourianum. (see p. 135.)

Three Plants from one Acorn.—A correspondent sends us a single acorn, from which three seedling plants have sprung. As the ovary of the

Oak is made up, in the first instance, of three compartments, each containing two ovules, the occurrence of three plants is easily explained by the circumstance that one ovule in each compartment has in this case developed into a seedling, whereas under ordinary conditions five out of the six remain undeveloped, and only one comes to perfection.

Ealing Gardeners' Association.—On the invitation of Messrs. Sutton & Sons, Reading, a party, numbering about 90, spent a thoroughly enjoyable day inspecting the extensive trial grounds, seed departments, and nurseries, on Monday last, July 28, and were hospitably entertained by the firm.

Climate of the Isle of Wight. — In this relatively wet, sunless summer, it is interesting to learn from a correspondent at Ryde, that Cordyline australis and Phormium tenax are in exceptionally fine bloom.

A Universal Language.—The establishment of such a language has often been an enthusiast's dream. It has been realised more nearly by the naturalists than by other people, as their original descriptions are usually in Latin—Latin of the culinary or canine sort, it is true. So recently as the time of Linnæus, not only the descriptions of species, but the comments and treatises thereupon, were in Latin, to the great advantage of the nations. Academical lectures on medicine, &c., were delivered in the same language. Feeling strongly the immense advantage of Latin for descriptive purposes in natural history, we sympathise to that extent with the establishment of an international association for the establishment of a neutral language for the purposes of commerce and science, and we agree that that language should be Latin—not the language of Cicero or Horace, however, but the language of Linnæus, grammatically correct, but free from inversions, idioms, and elegancies of style, such as the scholar rightly delights in. The object is not literary, but severely practical. A programme before us advocates the use of Latin for commercial purposes, and gives illustrations showing how it may be adapted to dialogue as a spoken language. This offers greater difficulties, unless the pronunciation can be regularised. Those interested in the attempt would do well to read the excellent remarks of M. Alphonse de Candolle in his *Phytographie*. Those who are desirous of taking part in the establishment of a neutral international language should communicate with the Secretary of the International Association, Sell's Advertising Agency, London.

Lilium Grayi. — We learn that this Lily, referred to by Capt. Elwes in his lecture on the subject of Lilies, at the Royal Horticultural Society, is in cultivation with Mr. Davidson, of Wernoleu. The late Dr. Asa Gray found the Lily on Roan Mountain, North Carolina, and it has since been found on the mountains of other Southern States. The flowers, one to nine on a stem, are dark coloured, of a deep reddish-orange, uniformly dotted within with rather small, purple spots.

Apples in Canada and Nova Scotia.—We learn that the crop of Apples is likely to be very light. This will not afford much consolation to our home-growers, for our own crops are, as shown in our tabular report, likely to be very scanty also.

Benedict Roezl.—A recent number of the Bohemian Horticultural Journal, called *Časopis*, contains six illustrations, representing the designs for the statue to be erected at Prague in honour of the renowned plant-collector. All six represent the botanist at work in appropriate costume, and carefully scrutinising some of the treasures discovered by him, or brought to him by the natives.

"Bulletin of the Royal Botanic Society of Belgium."—M. T. Durand, to whom we are indebted for the index to Bentham and Hooker's *Genera Plantarum*, has completed the index to the first twenty-five volumes of the *Bulletin* of the above Society, comprising the years 1862–1887. A special blessing should be reserved for index makers.

Carpenteria Californica with Double Flowers.—In Mr. Bateman's choice rock garden at Worthing, we saw a few days since a double flower of this plant. The flower was of large size, and more than semi-double. As a rule single flowers are to be preferred, but a double Gardenia is not to be despised, nor a double Carpenteria either, if we may judge from the specimen we saw.

Things to be Tried.—A French contemporary (*Le Moniteur d'Horticulture*) mentions methods of hastening or retarding the opening of flowers, which may interest our readers. To cause buds (of Rose or of Lilac, for instance,) to open prematurely, they should be cut, and the stems placed in vases of water, at the bottom of which a little slaked lime is placed. If a bell-glass be placed over them, and the buds be kept in the full sun, or in a greenhouse, at the end of three days it is said that the blossoms will be as far advanced as after eight days in the open air. If, on the other hand, it is wished to retard certain blossoms, those which can resist frost must be chosen, as the plants should be kept in an ice-house from about January 1 until March 15; they should then be planted out in the shade, when the flowers will open a month or two after their proper season. To revive cut flowers which have been gathered some days and are faded, it is only necessary to hold them in steam for a few minutes, and then to dip the tips of the stems in boiling water. These ends should be cut off before the flowers are replaced in a vase of cold water. To produce the same result another plan is recommended:—Sprinkle the blooms lightly with water, and stick them into sand or moss saturated with boiling water, in which has been put a little sulphate of ammonia or acetic acid; the blooms should be kept covered with a bell-glass for a little while before they are again used. The same informant from which we culled these details tells us, that when flowers have been but slightly touched by frost, they may be revived by steeping them, first in cold, and then in tepid water.

East of Scotland Union of Naturalists' Societies.—The seventh annual Conference was held at Aberdeen on Wednesday, July 23, the three following days being devoted to excursions. The attendance of delegates was very good, and at the meeting in the Museum Hall, Dr. Howden, of Montrose, presided, and in his address discussed the geology of Montrose. Prof. Trail reported that he had been able to add to the list of fungi for the Forth district about Largo. The Willows of East Scotland were dealt with by Dr. F. Buchanan White. Full reports of the above and other papers submitted, will appear in the Annual Report of the Union. It was decided that next year's Conference should take place at Arbroath.

"Work." — The proprietors of *Work* have arranged to hold an exhibition of articles made by the readers of that journal, for which medals and prizes are offered. The exhibition will be divided into sixteen groups, and will include upwards of 200 subdivisions. There will be three classes of exhibitors, viz., workmen, apprentices, and amateurs. The Committee of the Polytechnic Institute, Regent Street, W., have placed that institution at disposal for the exhibition, which will be held at the end of the present year. The following is a summary of the groups of exhibits: I.—Work in Wood. II.—Work in Metals. III.—Tools for Work. IV.—Work in Design only. V.—Work in Printing. VI.—Work in Domestic Appliances. VII.—Work in Wearing Apparel. VIII.—Work in Painting and Decorating. IX.—Work in Textile Fabrics and Leather. X.—Work in Musical Instruments and Music. XI.—Work in Watches, Clocks, Alarms, Bells, &c. XII.—Work in Building Appliances and Material for Building. XIII.—Work in Chemical Processes and Products. XIV.—Work in the Utilisation of Waste. Full particulars of the exhibition, with rules and regulations, and a list of prizes, medals, &c., offered to competitors, are given in No. 70 of *Work*, published on the 19th ult.

Protection for Raisers.— Our American cousins, recognising that one of the first objects of the government is to protect the citizens in their enjoyment of the rights of labour, are endeavouring to secure to the originators and introducers of new and valuable varieties of plants, a proper share of the benefits resulting from their labours and expenses in connection with such new varieties, and to protect the public from fraud in the purchase and sale of plants. For this purpose it is proposed to have certain trial stations or gardens where the plants may be grown and tested by a board of experts, whose business it shall be to examine and compare the varieties, to give a simple and characteristic name to each variety, under which name it shall be registered. On a favourable report of the experts to the secretary of agriculture, this official shall (after receipt of a fee!) issue a certificate which shall secure to the originator or discoverer, or his assignees, "the sole right of propagation and sale of such certificated variety for a period of ten years." In the case of a new plant introduced by an importer, protection of a like character for five years shall be granted. Such a plan would be impracticable at least here, but our readers will remember that the Royal Horticultural Society, by means of its trial ground at Chiswick and its committees, does perform some of the work above sketched out. Every means should be taken to strengthen its hand, and add to the value of its certificates. There are two ways of diminishing their importance, first, that of making them "too cheap," which is the fault of the committees who do not rise to the level of their duties; and secondly, the issue of similar certificates by numerous other institutions and societies with less claim to command public respect.

The Dittons Horticultural Society held its third show on Wednesday, 23rd ult. Messrs. J. Laing & Sons and Messrs. J. Peed & Sons had meritorious groups, and Messrs. Puttock & Shepherd, Kingston, contributed a well-grown collection. Mr. J. Kent, gr. to C. F. Howell, Esq., had the best group in the competition, and Mr. Whitehead, Weston Grange, sent a fine lot of herbaceous plants. Messrs. Simmonds, Farr, Davis, and Kent, were successful exhibitors of fruit; and Mr. W. Palmer, Thames Ditton House Gardens, contributed largely to the display of both fruits and vegetables; not entering the competition, however. Roses came from Mr. W. Tayler, Hampton.

Tasmanian Fruit.—Tasmanian papers which have reached us tell of a Tasmanian Fruit Growers' Association, and of sundry prize essays in connection therewith. The first prize essay is written by Dr. Benjafield, who says, in language as applicable, with the necessary modifications, here as in Tasmania:—"To find out what fruit trees are best to plant, we must first know what markets we have to supply with the fruit when grown. And we may speak of them as four markets—(1) the home markets, in Hobart and Launceston; (2) New Zealand, with its seasons even later; (3) the Melbourne, Sydney, and other colonial markets, which require late keeping fruits chiefly; and (4) the London market, requiring good keeping and carrying fruits, but fruits that will gather early. The character and appearance of the fruit, too, must be taken into account. Salesmen all the world over tell us they must have large fruit, and well coloured; if with this we can obtain quality as well, we have then reached what the markets require. But the grower must consider the character of the tree he is planting—is it a strong grower? will it bear well? is it a good bearer every year, or only alternate years?—and so on." The second prize essay is written by Mr. George Innes.

A Children's Flower Show.—In a charmingly placed park, situate on the top of Egham Hill, and within a short distance of Holloway's palatial College, there was held, on the 24th ult., a very interesting display of plants and flowers, because the product of some 300 of the elementary school children of the large parish of Egham, which includes a considerable portion of western Surrey. Every spring the members of the Egham Juvenile Floral Society have served out to them, on payment of a small fee, certain packets of seeds of annuals, and certain rooted cuttings of plants. The seeds, which include such hardy annuals as Collinsia bicolor, Candytufts, Mimulus, Rhodanthe Manglesii, Nemophila, Calliopsis, Linum grandiflorum, Mignonette, Godetia, Nasturtium, &c., are distributed at the end of April, whilst the rooted cuttings are issued on May 20. These latter are of Fuchsias, zonal and variegated Pelargoniums, Calceolarias, Musk, Lobelias, Petunia, Gazania, Isolepis, &c. From these seeds and cuttings come the plants which enter into the competitions at the end of July, so that all exhibitors start alike and even. The show the other day included some 400 plants from cuttings shown in several classes, and about 350 pots, pans, and boxes of annuals. In both cases some were excellent. Of annuals Collinsia, Linum, Nasturtium, Calliopsis, Rhodanthes, and Candytufts made the best show of bloom, whilst of cutting-raised plants Fuchsias, Pelargoniums, Petunias, Lobelias, Gazania, and Musks were the best. The large number of plants thus produced yearly through the Society must make in many homes good window plants plentiful, as none can be exhibited for the prizes a second year. There is also a digging and drilling competition for big lads, not largely entered for, but some capital work was done.

The Royal Agricultural and Botanical Society of Ghent.—The Committee of the Ghent Royal Agricultural and Botanical Society offered, on July 17, a grand banquet in honour of their President, le Comte de Kerchove de Denterghem, who has been promoted to the grade of an Officer of the Order of Leopold. By the kindness of many horticultural friends, who lent some of their choicest plants, the whole room looked like a well-arranged garden. The father of the present Count — le Comte Ch. de Kerchove, of Denterghem, was, like his son, a Member of the Chamber of Representatives, and President of the Casino. By way of paying a delicate compliment to both father and son, the bust of the former was placed in a conspicuous position in the banqueting-hall. To the present Count a eulogistic address was presented, and the whole *fête* passed off amid much enthusiasm. Many English friends would have been glad to have expressed their sympathy had they known of the occurrence.

The British Fruit Growers' Association.—A meeting of the above body was held last Thursday in the Horticultural Club Room, T. F. Rivers, Esq., in the chair. The principal business was concluding arrangements for the Conferences at Leicester, the Crystal Palace, and Brighton, on August 5, September 5, and September 11, respectively. It was stated that the exhibition at Leicester is expected to be a large one, and with fine weather the attendance there is always good, Abbey Park being a popular place of resort. At Brighton the Conference will be held in the King's Room at the Royal Pavilion. A most encouraging letter was read from Sir Edwin Saunders, and that gentleman was unanimously elected a Vice-President, together with W. B. Waterlow, Esq., Dr. S. Makovski, and W. H. (Bullock) Hall, Esq. Mr. L. Castle stated, with regard to the proposed holiday trip by himself and Mr. Gordon in Ireland, that a large number of letters had been received, offering suggestions as to the route to be taken, much of the information indicating that fruit is successfully grown in many districts, and that the crop this year is satisfactory.

Interesting Ceremony in the Flower Market at Ghent.—The Royal Agricultural and Botanical Society of Ghent, with financial support from the Communal Administration, allot prizes every year to those gardeners and florists who have distinguished themselves during the year by good cultivation of plants and flowers. The distribution of the medals took place recently. The President of the Society, M. le Comte de Kerchove de Denterghem, accompanied by several members of the Executive Committee, met the Burgomaster of the city, M. K. Lippens, at the Place d'Armes, that an official character should be given to the ceremony. One of the competitors was made a member of the Order of Agriculture. Such an event as this should have a good effect in stimulating to still higher efforts the gardeners and florists of the neighbourhood.

Cattleya Eldorado.—By the courtesy of Sir Trevor Lawrence, we have received a curiously deformed flower of this Cattleya with four sepals, three of which are normal, the other stunted in its growth. There are four petals, two of the ordinary character, the other two convolute, and with a yellow blotch as on the lip. The column is made of three stamens—that is to say, the outer row is fully represented, and in front is one style partially detached from the column. The ovary has three cavities divided by as many partitions, but there are no ovules.

CLERODENDRON BALFOURIANUM.

In our issue for May 3, reference was made to the fine specimens of Clerodendrons exhibited at the Berlin Horticultural Exhibition by Mr. J. Fox, of Neudeck, Upper Silesia, who has kindly forwarded us a photograph of one of the plants (from which our illustration, fig. 21, is taken). He says:—"Their treatment was as follows: In spring, 1888, they were planted in boxes made of laths, with room enough left between to allow of the roots growing in every direction. The boxes were merely used so that when the plants should be potted they might hold soil enough to save them from injury. In the spring of 1889 they were transplanted and treated as stove creepers, the soil used being a mixture of peat and leaf-mould with a little loam. They were fully exposed to the sun and had plenty of water. Under this treatment they grew and flowered freely. During the winter of 1889 they had only enough water to keep them from flagging, with a bottom-heat from 75° to 80°. Through keeping them dry they lost a good deal of their foliage, but ripened their wood well.

"On February 1 we had eight plants taken up and planted in small wooden tubs, about 2 feet high and 15 inches across, and trained on the large trellises mentioned in your article of May 3.

"As soon as the plants are transplanted, they must be pushed into action at once; if left three or four days without syringing and heat the greater part of the young shoots will die. The plants were put into an empty section of a Pine-stove with a bottom-heat of 90°, and an atmospheric temperature from 65° to 78° Fahr.

"When transplanted, they were well watered and received no more till their foliage was expanded, copious syringing being enough.

"The forcing began on February 1, and ended on April 17, at which date seven of the plants were in full flower, which shows that it took exactly 73 days to bring them to perfection. On the 14th we began to give air to harden them for their journey to Berlin, first at the top of the house, afterwards increasing the ingress of fresh air on all sides, till at last we left the door open at night without injury. As soon as the foliage and flowers were fully developed, they absorbed a great quantity of water, as much as two gallons a day, liquid manure being alternately used with clear water.

"For gardeners who have to decorate with plants indoors, I know no plant better adapted for such work than the one in question, which by right treatment may be had in flower every month in the year."

Plant Notes.

CALCEOLARIA SINCLAIRI.

Under this name we grow a charming plant for greenhouse decoration, which only needs to be seen, well grown, to be admired. In foliage and habit it is like an ordinary Calceolaria, but the flowers are minus the slipper-like pouch. It is a plant which should become generally grown, especially by those gardeners who have to keep up a display of flowers throughout the year. It flowers in June; the individual flowers are some quarter of an inch in breadth; the outer side of petals white, and lower portion of inside is spotted with purple. The lower lip extends slightly beyond the upper one, and the growth is semi-procumbent. Propagation is effected either by sowing seeds as soon as they are ripe, or by cuttings. *W. Harrow, Botanic Gardens, Cambridge.*

Arthropodium paniculatum.

In this genus we have some four or five different species in cultivation, all bearing white flowers resembling those of an Anthericum; the above is one of the best, it being most proliferous, and remaining in beauty for a great length of time. It is useful for cutting purposes, and is a good ornamental plant for a cool house or a winter garden. The plant thrives well in almost any position, even in a border beneath a plant stage, where few other plants would grow at all. The flowers appear during the months of April and May, and are borne on a much-branched, half-drooping panicle, the inner perianth leaves being crenulated, and slightly broader than the outer ones, and the stamens peculiarly bearded. The leaves are from 2 feet to 3 feet in length, narrow, lanceolate, and recurved. The plant was introduced from New South Wales in 1800. A. p. var. minus is a smaller form of the above. *W. Harrow.*

Begonia Bavaria.

This pretty plant is employed in Sir Trevor Lawrence's garden at Burford Lodge to fill a panel bed on the lawn. It is of dwarf habit, scarcely rising more than 4 inches, and densely covered with flowers of a carmine-crimson colour. The flowers are so numerous that the neatly arranged leaves at the base of the plants are scarcely visible anywhere. The plant appears to belong to a new section of the Begonia, and fairly eclipses all others, as well as Pelargoniums, as a bedding plant.

Fruit Register.

STRAWBERRY BICTON PINE.

Many years ago I got from the late Mr. Barnes this valuable mid-season Strawberry, and I can still recommend it as a good hardy, fruitful kind, and the flavour is quite passable. Being a white fruit, it is not nearly so attractive to birds as the red ones, and it is always a novelty when mixed with the other varieties in the dessert. I would not recommend it in preference to others, but where one grows a dozen varieties, this ought to be one of them. Notwithstanding all the new sorts found in nursery lists, I still grow Cuthill's Black Prince (Black's Seedling of my young days); it is very hardy, very productive, and excellent for preserving. *J. Rust, Eridge Castle, Sussex.*

Early Strawberries.

At Barham Court Gardens, La Grosse Sucrée was yielding fine crops of fruit, some ripe, in the last week of May, and Mr. Woodward the gardener gathered several punnets of fine fruits in the beginning of June. The plants were layered in the previous year, and grew on a warm border. The plan of raising young plants to fruit one year, and then destroying them, should certainly be practised wherever very early out-of-doors fruit is required, seeing how much earlier they ripen than older plants. I have this season layered 200 of Noble and 200 Vicomtesse Héricart de

Thury, for the purpose of planting up a well-sheltered border that was last year cropped with Lettuces. The border will be well manured, and as the soil is rather light, it will be well trodden to make it firm before planting. I intend to allow a space of 12 inches between the plants, and by so doing hope to get a good crop of fine fruit fully ten days sooner than those on ordinary beds. I noticed those at Barham Court; La Grosse Sucrée was not carrying much leaf, which may have had something to do with the earliness of the fruit, its brightness of colour, and good flavour; the berries, too, were large, some weighing three-quarters of an ounce. *H. Markham.*

Alexander Peach.

In corroboration of the remarks made on this excellent early Peach, p. 105, I may say that I began to gather ripe fruit on July 10 from a tree trained against a south-west wall. The fruits were of a large size and a high colour; and the tree a vigorous grower, and free bearer. During the past week we have been picking ripe fruits of the Amsden Peach from a young tree on a south wall; but the fruit is scarcely so large or so highly coloured, or tree such a good grower as Alexander. *H. W. Ward.*

THE COLOURS OF FLOWERS.

We daily experience the necessity for some authoritative standard by reference to which the colours of flowers may be uniformly denoted. The appended diagram (fig. 22), which we copy from the report of a lecture by Professor Church, at the Society of Arts, shows one device by which an approximation to what is desired may be obtained. Professor Church thus refers to the chromatic circle:—

"The disc of which our chromatic circle is the boundary may be regarded as the base of a colour cone, differing from that of von Bezold in the approximately correct angular positions accorded to the several colours which find place in the circle. I have followed in the main the construction given by Rood to the chromatic circle, but I have not adopted his nomenclature, except in a few cases, while I ought to have used capital letters to indicate the hues corresponding to the three primary colour sensations, and have emphasised these and their complementary secondaries by joining them by diameter lines of extra thickness.

"The three primaries, red, blue, green, I adopt are approached very closely in hue by the following pigments:—

"Crimson vermilion, for the red.

"Emerald green with a trace of chrome, for the green.

"Pure natural ultramarine, for the blue.

'Putting aside the questions of purity and of brightness, each one of these three primaries is neutralised, so far as hue is concerned, by one of the three secondaries, thus—red, by green + blue or seagreen; green, by blue + red or purple; blue, by red + green or yellow. Thus the pairs, red and seagreen, green and purple, and blue and yellow, are what we call complementary colours, and united produce in each instance white. But of course there are an infinite number of complementaries, the pair of colours at each extremity of every diameter of the circle having the right to be so designated. I wish now to confine our attention to two other matters—the angular intervals which separate the selected colours to which I have assigned names, and the doctrine of chromatic equivalents.

"In the earlier attempts at arranging colours in a circle, an inaccurate and quite arbitrary plan was adopted of placing the three primaries at three points equidistant from one another. Supposing, however, that we obtain a normal diffraction spectrum, and merely glance at the position which our three selected fundamental hues occupy, it will be immediately obvious that the green is separated from the blue by a smaller interval than that which divides it from the red. And if we take the numerical differences obtained by comparing the wave-lengths of the three fundamental hues, we shall arrive at the same conclusion. It is by fixing the spectral position of the pigments which most nearly approach these fundamental hues, and consequently learning their corresponding wave-lengths, that we are enabled to assign approximately correct angular positions on our chromatic circle to the pigments in question. For the practical purposes we now have in view, the allocation of proper positions to our most characteristic pigments is the problem which our chromatic circle is intended to aid in solving."

TREES AND SHRUBS.

ABIES EICHLERI.

According to Mr. Hennings, of the Berlin Botanic Garden, the Silver Fir described by Lauche, in the *Garten Flora*, 1882, p. 63, under the above name, is no other than A. Veitchii, a Japanese tree whose synonymy is already sufficiently embroiled, but which was cleared up in these columns in 1880, p. 273.

Abies Douglasii var. Stairii.

From Munches, of arboricultural renown, we have received a fine spray of the variegated form of Abies Douglasii, described in our columns for 1871, p. 148. At Castle Kennedy, where it originated, it is reported to resemble in spring a Hawthorn in bloom, so white is it. As autumn comes on, the white is replaced by a green tint, which is all the better for the plant, if less so for the owner. In 1871 the original plant was noted as being about 8 feet in height. It would be interesting to know to what height it has now attained.

Hydrangea roseo-alba.

This very beautiful shrub forms just now one of the chief ornaments of Mr. Bateman's choice "hortulus" at Worthing. Whether attributable to the sea air, or, as is more probable, to the bright light, the deep rose colour of the flowers is specially brilliant.

THE VINES IN ALDERMAN CHAFFIN'S GARDEN, BATH.

Owing to the high prizes which the Grapes from the above gardens invariably carry off at exhibitions, "Bath Grapes" have become as familiar to the readers of gardening literature as to residents at Bath and neighbourhood.

At the commencement of last month I visited these vineries, which Mr. Taylor erected, and which are slightly modified examples of the Longleat houses put up by him sixteen years ago. The modification is the absence of a ventilating lantern. The range stands in a north-easterly direction, and it is 30 feet wide, of good length and height, with a pathway down the centre. The air is admitted by front and top sashes on both sides, the ventilators being worked by machinery conveniently placed. Each of the divisions of the range is well heated by means of 4-inch hot-water pipes, five rows being placed on each side, one being close to the front wall, and two pairs side by side, and clear of the ground, at intervals of 4 or 5 feet from that point and the pathway.

The Muscat division is one to which I wish to call attention; it is 60 feet long, and the Vines—six years planted this month—stand 5 feet apart, and they are trained to a curvilinear trellis, at a distance from the apex of 3 feet, and 18 inches from the glass at the bottom, thereby allowing for the circulation of a large body of air between the foliage and the glass. The Vines were found in fine condition; the stems being nearly 9 inches in circumference at a point a few inches above the ground, and they are about 20 feet long. The crop was a superb one, each of the nearly 200 bunches gave promise of perfection when ripe. The bunches would average 3½ lb. each; and a few of the largest bunches measured 11½ inches across the shoulders by 15 inches in depth, the berries large for the time of year. These bunches will, when ripe, turn the scale at 6 or 7 lb., so that those who contemplate exhibiting Muscat Grapes at the forthcoming autumn shows will be able to form a tolerably correct estimate of the fruit that will be staged against them. Mr. Taylor gives copious waterings to his Vine borders, generally twice a week, in bright weather, and he employs a fertiliser of his own for sustaining the vigour of the Vines. The varieties of Black Grapes—Alicante, Gros Colmar, Gros Maroc, Alnwick Seedling, &c.—which were planted in the opposite side of same house when the Muscats were planted, have been shortened back the last two years to make room for the extension of the Muscat canes, the object being to cover the trellis from one side to the other with these, and which they will accomplish in the next two years.

In conclusion, it may be said that the Bath Vineries contain very promising examples of the varieties of Black Grapes indicated above, especially the Gros Colmar. *H. W. Ward.*

HARROW WEALD.

The Cedars.—The residence of T. F. Blackwell, Esq., the head of the well-known firm of Crosse & Blackwell, is situate in a garden worthy of the extensive estate of which it is a part, and in which all kinds of plants are grown in perfection. As on other English estates which the owners really make their home, improvements are continually being made in the garden, and the last of these will appeal to the sympathies of those who admire pretty flowers artistically displayed. The approach to the dwelling house is by winding walks, having borders and beds of varying widths on either side, the background consisting of fine shrubs and Conifers.

The front parts of the beds and borders are filled with flowering perennials and annuals, without much apparent attempt at regular arrangement, but the result is satisfactory and pleasing. The Golden Elders and variegated Acers in the background contrast well with the Yews and other shrubs; whilst here and there stand a tall Cypress or Juniper, and in the middle distance Hollyhocks, Delphiniums, and Foxgloves, mingle with Deutzias, Syringas, and other flowering shrubs. The front of the borders has a continuous and ever-varying display of Campanulas, Pentstemons, Phloxes, Cistus, Diplacus, Antirrhinums, Sweet Williams, Myosotis, and such like showy flowers, the odour of the Sweet Briar, Honeysuckles, and Roses floating over all. To have obtained such charming results from simple things, Mr. Dinsmore, the gardener at The Cedars for many years, must have bestowed a great amount of thought and skill. For keeping up the display to a late date large quantities of Dahlias and Chrysanthemums are planted; and here and there Ferns are arranged.

Passing round by means of this walk to the garden nearer the house, a tennis-lawn is disclosed, backed by clumps of Rhododendrons, through which Bracken and Foxgloves appear, and further on are an ancient summer-house and massive arch covered with Ivy, and still further a rosery is observed.

On the other side of the garden is a border of considerable breadth, which is filled with Roses, Delphiniums, and other flowers, sometimes called old-fashioned, their beauty indicating why they are still admired.

From this point a fine view of the mansion is obtained with the conservatory. The latter harmonises well with the former, and its walls, &c., are admirably clothed with Ampelopsis Veitchii, as is also the opposite end of the house, where the purple flowers of the Clematis peep through the Ampelopsis in a very pretty manner. Fronting the conservatory is a parterre of festoons and arches of Roses now beautiful with flowers, and beside this lies the summer flower garden, which in spite of dull weather and much rain is a scene of great beauty. A large round bed in the middle of this garden has a tall Cordyline australis in the centre, around

which Cannas are planted, which in turn are banded with Iresine, Blue Lobelia, Golden Pyrethrum, and Echeveria. The following are a few of the effective arrangements in the principal beds: the old variegated Pelargonium Flower of Spring is mingled with Viola Admiration, the violet flowers of which contrast well with the Pelargonium. Some corner beds consist of dwarf scarlet Tropæolum and Mesembryanthemum cordifolium variegatum, edged with Echeveria. Some of the inner beds of the design consist of Pelargonium Mrs. Pollock, with an edging of blue-flowered Lobelia; and showing with good effect were beds of Coleus Verschaffelti and variegated Mesembryanthemum, edged with Echeveria secunda glauca. Noble specimen Conifers are plentiful about the garden, two Sequoia (Wellingtonia) gigantea, each about 40 feet in height, being very remarkable. When Mr. Dinsmore planted them they were exactly alike, and although the stations were similar, in being open ones, the one tree has gone up like a pillar, without widening much laterally; the other has retained the usual form—that is, broad at the base, and going gradually to a point.

Near the mansion are a very fine Tulip tree, some Copper Beeches, and stately Oaks; while the "old Elm walk" affords grateful shade and shelter.

The glass-house accommodation in the garden has recently been extended by the erection of a range of plant-houses, another of vineries, and a range of Peach-houses, together with pits, sheds, &c., the work having been admirably carried out by Mr. James Gray, Horticultural Builder, Danvers Street, Chelsea. Nothing seems to have been forgotten by the builders, and the heating and ventilation have proved very satisfactory. In the conservatory, arranged with Palms and Tree Ferns, was a pretty display of Achimenes in large pans, zonal Pelargoniums, some specimen Ericas in flower, Boronia elatior, some well-bloomed Tuberoses, Hydrangea paniculata, and Cliveias. Near by was a house full of Lapagerias and New Holland plants, and behind it a shady, lofty house, in which some large Camellias thrive well. Here, too, were fine Filmy Ferns, one specimen of the Killarney Fern being over 4 feet across, and all look the more beautiful, seeing that they grow in the open house, and not in glass cases.

In the stove houses are some superb specimens of Crotons, Palms, Alocasias, and other foliage plants, together with profusely-bloomed Gardenias, Eucharis amazonica, scarlet Anthuriums, &c., all things in the garden being neat and clean, clearly indicating that they are well cultivated. On the roof the Allamandas, Stephanotis, and Dipladenias are heavily laden with flowers, and among the Orchids, of which only the showy kinds are grown, Dendrobium Dalhousianum and other Dendrobes, Miltonia vexillaria, and M. Roezlii, Epidendrum vitellinum, and some Odontoglossums and Cattleyas do their part to the show of flowers.

The new range of plant-houses has in the first division some well-cropped Cucumber plants with Calanthes, which were growing vigorously. In the next division the young stock of Crotons, Dracænas, Poinsettias, &c., for table decoration is grown. Then Gloxinias, Ardisias, Begonias, &c.; and in another Coleus, Pelargoniums, &c.; a new sport of a regal Pelargoninm, which originated at The Cedars, being highly novel and attractive.

In the vineries the newly-planted Vines were making stout, short-jointed canes, although they are already allowed to carry a few bunches. The most remarkable thing in this range is the fine crop Mr. Dinsmore has succeeded in getting off his pot Vines, each of which bears nine bunches equal to the best produced on old Vines, and very finely finished.

In the production of these superb examples, Mr. Dinsmore has adopted an expedient which is noteworthy, as it has greatly aided in the success of these pot Vines. The plan adopted when placing the vines in for forcing was to knock out the bottoms of their pots and place them on inverted pots of similar size, from which the greater portions of the bottom had been removed, their interiors being filled in with good turfy loam. Into this the vines rooted, and the extra support derived no doubt caused the berries and bunches to grow much larger than they otherwise would have done. The trees in the Peach-houses were well cropped, Tomatos being worked in between them, and in other places wherever there was convenience. The Mushroom-house, recently noted by us, is still giving a good supply; the pits contain a good show of fruiting Pines, Tree Carnations, Cyclamens, and other plants wanted for winter flowering. There are three separate kitchen gardens of moderate size, which give an ample supply of vegetables, &c., cleverly cropped as they are.

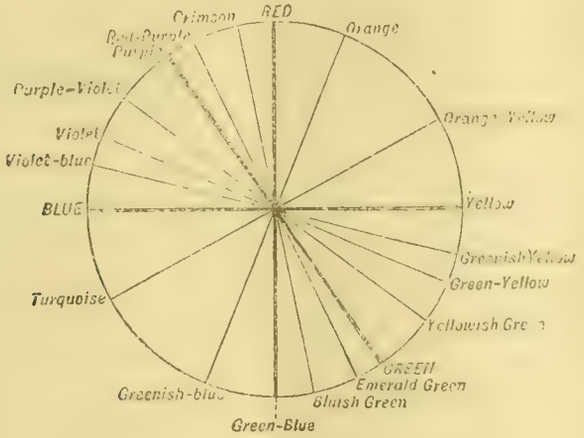


Fig. 22.—THE CHROMATIC CIRCLE. (see p. 136.)

Home Correspondence.

GARDENERS' ORPHAN FUND.—That man must be fastidious indeed who, after reading last week's leader in the *Gardeners' Chronicle*, is not thankful for the admirable manner in which this young Society is managed, and for the noble way in which the whole seventeen candidates were placed upon the funds of the Society. Surely every gardener worth the name will send his annual subscription of 5*s.* to such a valuable Institution. Speaking from experience, I cannot well say too much in its favour, for it was my lot to have to bring forward, for the consideration of the committee, a poor orphan boy from an obscure place in the North of Ireland; and when it is known that he headed the poll with plenty of votes to spare, no gardener in the Sister Isle or in the North Country should have any doubts as to the honourable and impartial way in which candidates are elected. Allow me here to thank those who kindly accorded their votes in favour of my *protégé*, and to say that I shall be excessively lax in my efforts if I do not add considerably to the number of subscribers during the coming year. *J. Rust, Eridge Castle Gardens.*

HARDY FERNS AT KEW.—A few words on the origin of the British Fernery at the Royal Gardens, Kew, may be of interest, as it appears from Mr. Druery's remarks not to be generally known. After a conversation with the Director (Mr. Thiselton Dyer), a petition was presented by myself to the Board of Works, stating that it was desirable to form a British Fernery at Kew, and this was signed by the principal Fern growers, who also consented to supply varieties, and I believe that some of my own Ferns were the first to arrive there. The late Colonel Jones and Mr. E. F. Fox promised to send duplicates at once and did so, but the late Mr. Carbonell said that he could not part with "his children," adding, however, "they shall all go to Kew at my death," a promise that has been faithfully fulfilled. It must be borne in mind that the Royal Gardens, Kew, is a national institution, therefore all lovers of Ferns should send duplicates there, in order to keep up the character of the Fernery, as well as to give their special varieties an honorable habitation. The fact of a vast number of varieties being in private collections, is another reason why it would be desirable to have them collected in the Kew Fernery. *E. J. Lowe.*

KITLEY'S GOLIATH AND OTHER STRAWBERRIES.—I am quite at one with your correspondent, Mr. Kitley, and can confirm his statement. My first acquaintance with Goliath was in 1855, when I grew it by the acre at Abbey Wood, in company with Alice Maud. It is, as Mr. Kitley says, an excellent cropper, and of good flavour. John Powell I procured from Powell, of Frogmore Gardens. It is a different Strawberry altogether, being of a dark red colour, while Kitley's is lighter in colour, smaller, and not of so good quality. I am surprised that a pomologist of Mr. Bunyard's standing should alter the names of Strawberries, unless he has some higher authority than he appears to possess. I notice Mr. Bunyard looks upon Myatt's Eleanor and Oxonian to be one and the same variety. Both these I have in stock. The former I procured from Mr. Myatt himself. I may here remark that at one time I was gardener to Mr. Myatt, and did not forget to note a good many things which I have since found to be particularly useful. Eleanor is now nearly over, but not a fruit of Oxonian has yet been picked. I will send you a few fruits of each by an early post. *R. Gilbert, Burghley Gardens, Stamford.*

ACCLIMATISATION.—I should like to add my testimony on this point, as the subject has always interested me. I entirely agree with Mr. Wolley Dod, though it is a bold thing to disagree with "F. W. B." But I am now quite certain that it is impossible so to change the nature of any grown species as to make a tender plant hardy. When I was younger I thought I could do so, and have made experiments with many plants, and I have been fairly successful with some; but I am now quite sure that I have not changed the nature of any. All I have done is to prove that some plants that we found wild in a warm climate will grow in a colder as well. I do not read Darwin's experiment with Beans in the same way that Dr. Wallace and "F. W. B." seem to read it. In a batch of seedlings some would certainly be healthier and stronger than others, and better able to resist frost; but if their nature was changed, seedlings from these should show the same resistance to frost the following year, and of that there is no evidence. But the thing that has convinced me that it is hopeless to attempt or look for a change from tenderness to hardiness is that we have many favourite plants that have been grown for more than 200 years which are no hardier now than when first introduced. I allude to such plants as zonal and Ivy-leaved Pelargoniums, Oranges, and Potatos. Pelargoniums and Oranges will live out-of-doors in Devonshire all the year, but cuttings or plants raised from Devonshire plants are no hardier than those raised in Gloucestershire. The fact is, we know too little of what makes a plant

hardy or tender. When we know more, we may (or may not) do something to change their nature. Till then we must be content with things as they are. *Hugh Ellacombe, Bitton Vicarage.*

CHRYSANTHEMUM MAXIMUM.—This plant forms one of the many attractive features at the present time in the nurseries at York, where it is deservedly and largely grown; in fact, in this plant we possess one of the most useful and showy of summer border flowers. The plant is quite hardy, and of such easy culture, that hardly any position would be unsuitable for it, although a deep, rich loam and a sunny position suit it best. The individual blossoms are very large, being 3½ to 4 inches across, and of the purest white, and the rays, though rigid, are slightly deflexed, which gives grace to the flower; the yellow disk or centre is smaller than in that of Chrysanthemum leucanthemum; the flower-stalks, 1 to 2 feet high, are slender, but wiry, and support the solitary blossoms well. When the plants are grown in beds, as at York, the flowers are produced in such profusion that they form sheets of almost snowy whiteness. The cut flowers retain their freshness for a long time when placed in water. *R. P.* [The specimens sent were those of C. maximum, not, as called, atratum, nor lacustre maximum. Ed.]

A HOUSE OF TOMATOS.—I planted my house with plants raised from seed sown early in the spring in warmth, the plants being about 1½ foot high when planted. The house is a three-quarter-span greenhouse, and the beds are 3 feet wide by 7 feet long, two rows of plants being put in each bed, at about 18 inches apart. The plants were allowed to grow up to the glass, a distance of about 8 feet. The houses are ventilated from the top of the house, except in very warm weather, when the front lights are opened, and during the night air is afforded at the top. The leaves were not mutilated, but allowed to grow to their full length, and on fine afternoons the plants were syringed. *T. Burn, Tabley Park Gardens, Knutsford.* [The plants, as seen in the photograph which accompanied this note, are vigorous and fruitful. Ed.]

GAELIC PROVERBS ABOUT FLIES AND CORN FERTILISATION.—On this occasion I write to tell of a Gaelic saying, or rather sayings, which the fly season recalls, and, being translated, they mean, "Without flies, without corn;" "Where no fly is, the corn is little worth;" "Plenty flies, plenty corn." I was at pains to find out whether this is an old or a new saying, and from what I learned, I judge it to be of very ancient date, and is always referred, as all these sayings are, to "the old man," a mysterious potentate, who seems everywhere, in the Highlands and islands, to rule the minds of the present day, from a period of misty antiquity. Are you aware of similar proverbs in any other country or language? Some of your readers may perhaps know. A sudden blast of heat, notwithstanding St. Swithin, has come to us. The world is radiant. *Isabel Smith, Helensburgh.*

EUCALYPTUS GLOBULUS.—I herewith send you some blooms of the Eucalyptus globulus. The tree is about eight years old, and about 25 feet high. We have another which is about twelve years old, but it has bloomed twice, and then it only bore about three or four blooms. The one from which the present bloom was taken is at present blooming profusely for the first time. It is planted by the side of a stream of water, and is doing far better than the other, which is planted in a higher and drier position. Will they perfect their seed in this country? [Wait and see.] *Alfred King, Trevano Gardens, Cornwall.*

THE POTATO DISEASE.—After recent weather experience, which has not only left the soil saturated as though it was mud, but in this district put the Potato breadths literally under water in some places, it is beyond the bounds of prudence to expect that the Potato crop can be other than badly diseased this season. So fierce and voluminous has been the rain, that no amount of earthing protection or ordinary, has been able in any way to prevent the moisture from having free access to the young tubers, and if the air has been laden with Peronospora spores, then must the atmosphere have been freed from all such denizens, and the soil be filled with them. If the excess of rain has carried the spores deep down out of harm's way, and so far they may be destroyed, then some good will have been done; but that is of course very problematical. It would seem, having regard to the past, that, prior to the recent storm, there were few evidences of the existence of diseased spores in the foliage of the Potato plants, that the spore shower season had not begun; that it must be in full force, therefore, speedily, seems inevitable, for rarely have we had weather conditions more favourable for the spore and weakening for the plant than has been the case this year. Whenever the spore does attack the leafage, I fear it will make short work of it. The leafage is thin in texture because of so much rain, and so little of sunshine and light, and may be expected to fall an easy prey to the fungus. There has been ample evidence, however, amongst early Potatos of the same disease in a diverse form, the leafage showing a burnt and blackened aspect without the ordinary spot and white mould. This diverse form is evidently the product of resting-spores in the seed tubers liberated by the moisture of the soil. The young tubers show that these spores must have passed from the seed-tubers through the plants into the young tubers, because the disease evidences are considerably under the skin, and there is no evidence of external attack. This form of disease is the more deceiving, because tubers look sound enough on the outside. The general conduct of Potatos and fungus will be watched with exceeding interest for the next few weeks. *A. D.*

CHELSEA GEM *v.* WILLIAM HURST PEA.—Last year I was asked if I could perceive any difference between the above-named Peas, but I did not venture an opinion then, as they were not in the same garden. This year I planted the same varieties side by side, and my experience so far is, that Chelsea Gem is of a more vigorous habit, and the pods are better filled; for whereas William Hurst in the first picking had a good many of the pods with no more than three or four Peas in them, Chelsea Gem had none with less than six Peas. They are undoubtedly two splendid varieties, but my preference is for Chelsea Gem. *G. Claydon, Holbecks Park.*

VIOLA BLUE BELL.—Travellers by the Great Western Railway, when passing Langley, near to Slough, can scarcely fail to notice in Messrs. Veitch & Sons' Nurseries, on the north side of the railway, a broad band of this Viola on either side of one of the pathways. These two beds form masses of lovely blue, and no doubt many passengers by train wonder what plant it is that furnishes such striking masses of colour. If any one were called upon to name the three most popular Violas of the day, they would not be far wrong if they selected Countess of Hopetoun, white; Countess of Kintore, blue, with segments of white on the petals; and Blue Bell. The last-named originated in my garden at Ealing, where, as far as I know, never a Viola had been grown before. I noticed one day a little tufted plant that had come from a stray seed, and taking care of it, it bloomed, and I named it Blue Bell, and sent it out; but its actual parentage will never be known. It is a floral foundling, but it has made its way over almost every part of the country. I do not think I ever sold a plant of it at Ealing; but it is to be seen in hundreds of flower-gardens there. I have seen it under different names about the country, for floral piracy is as common as literary piracy. I visited Chatsworth, on one occasion, in the lifetime of the late Mr. Thomas Speed; and in walking around the grounds, I noticed a large patch of this Viola, and Mr. Speed said it occasioned the Duke of Devonshire more pleasure than anything else in the gardens, which I thought high praise for my pretty floral waif and stray. *R.D.*

PENTSTEMONS.—Like all free-seeding plants, Pentstemons have been much improved of late, and new varieties have been introduced, and these have again been made use of for the purpose of hybridising, with the result that we have now some splendid varieties which are capable of producing a grand show in the garden. The finest of these have strong tall spikes of large tubular blooms a brilliant scarlet, with conspicuous white throats, and many other bright tints are common, as well as rich plum, the contrast between the shades being striking and novel. Although classed as hardy plants, Pentstemons are not quite hardy, as a hard winter cuts them up badly, often killing them outright. A better way than exposing them outside in winter is to propagate every year, and keep the young plants in frames, planting out early, so as to get them well established in beds or borders before summer sets in. To enable the plants to keep on flowering till late in the autumn, they must have good deep soil, which should be deeply dug, and if they are planted in borders, large holes should be made, and manure worked into the soil. In propagating Pentstemons, the better way is to strike them under hand-lights placed on a shady border or other similar situation, employing a quantity of fresh sandy soil, mixed with some sharp sand, and after making it level and smooth, put in the cuttings. These should be made from the young side shoots that are not showing bloom, and if they are taken off, and trimmed in the usual way, and put in before they have time to flag, they are almost certain to root. To assist them in doing this, it is necessary to sprinkle them occasionally, so as to keep the leaves fresh. If these are at a fair distance apart, there is no need to disturb them, and they may safely be left to winter under the hand-lights, but they must have air, and be guarded from damp, as the latter is almost as fatal as frost. To prevent damping, a little dusty soil or dry sand worked in over the surface of the old is a great help, as is also a scratch over just to move it, to prevent the growth of moss. It need hardly be said that the named varieties of Pentstemons are the best to start with, but some seedlings almost equal them. Sow at once, and plants may be raised that will be strong and fine for flowering next year. The best place for them at this season is under a hand-light, prepared as for cuttings, where they may be left to stand for the winter. *J. S.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

July 22.—Present: Mr. Morris (in the Chair), Professor Church, Professor H. Marshall Ward, Mr. Pascoe, Mr. Blandford, Dr. Müller, Dr. Masters, Rev. G. Henslow (Hon. Sec.), and Mr. F. R. Williams.

Oak-staves, Perforated.—Mr. Blandford has made an exhaustive report on the wood perforated by Trypodendron Quercus, Eichhoff, brought to the last meeting, and which will be published in the *Kew Bulletin*. It appears that the cylindrical holes run transversely through the wood, having ramifying galleries at right angles; several of the tubes were empty, others filled with *débris*, which might be easily ejected by the beer. He discovered one hole which had been artificially plugged, as well as others hidden by the iron bands, conclusively proving that the beetles (several specimens of which were found) must have been in the wood before it was made into casks. Mr. Morris added that he had received an independent corroboration from the officers of the Indian Store Department that the wood was unsound previous to being used for casks. A vote of thanks for his investigations was given to Mr. Blandford.

Carnations Attacked by Tipula.—Mr. Blandford confirmed his suspicion that it was a species of Tipula which has ruined so many Carnations during the present season.

Nest of Weaver Bird from Paraguay.—Professor H. Marshall Ward exhibited a nest made of the mycelium of some fungus. It was in the sclerotioid condition formerly known as Rhizomorpha. Mr. Morris observed that the Banana birds of Jamaica made a similar use of Rhizomorpha. It is peculiar in being arboreal, and is found under the bark. It is common in the territories of the Argentine Republic.

Rhizomorpha of Agaricus melleus.—Mr. Morris exhibited a specimen of this mycelium, received from Mr. F. C. Fennell, of Westgate, Wakefield. It was found at a depth of 70 yards in a coal mine. It appears to be particularly destructive to props and timber made of the Spruce Fir, but not to the Larch, this proving to be the best for subterranean supports, though more expensive.

Cherry Laurel Fruits Poisonous to Peafowl.—Mr. Morris recorded the fact that some peafowls at Kew had lately died, their crops being found to be full of the fruit of the common Laurel. As the pulp is harmless, it was suggested that perhaps their death was due to prussic acid being developed from the kernels, though the presence of the stone appeared to negative that being the cause, otherwise it was difficult to account for it. This suggested to Mr. Morris the desirability of remarking upon the exceedingly objectionable habit of visitors throwing fragments of cigarettes to the swans and other fowl at Kew; nicotine, it need hardly be observed, being a deadly poison.

Laburnum as a Poison.—Dr. Müller observed that

although the Laburnum appears to be exceedingly poisonous in all parts of the tree, the roots, flowers, and seeds having all been known to have poisoned human beings, yet rabbits will eat the bark with impunity.

Phylloxera at Chiswick.—Mr. Morris called the attention of the Scientific Committee to the appearance of this disease, and invited the members to pronounce as to the treatment of it, as it is undoubtedly present in one (isolated) vinery in the Chiswick gardens, containing young plants from Hungary. It was first observed on a single plant at one corner, but both root and leaf-galls have been found on another plant at the other end. Although the presence of the Phylloxera would suggest the opportunity for a careful series of investigations and experiments, yet it was the opinion of the committee that it was far too serious a matter, and they were unanimous in counselling instant destruction of everything growing in the house. The following process was suggested, and will be carried out at once:—1. Syringing the whole of the interior of the fabric, as well as the ground and Vines, with water, then to burn sulphur, the presence of the water being desirable in order to absorb the sulphurous acid gas; this process is to be repeated. 2. To burn every part of every plant, as well as to calcine the soil thoroughly. 3. To remove and burn all rotten or defective wood that may be in the house; and lastly, 4, to have the whole of the woodwork well scraped and repainted. It is hoped that these suggestions will be useful, and followed out elsewhere, should the Phylloxera appear in other gardens.

Vines, Atrophied Foliage of.—Mr. Morris showed specimens of a very common condition of Vines, several occurring in the house above mentioned, in which the lateral shoots were dwarfed, the leaves being only about an inch across. It has been a source of great trouble to Vine growers for many years. Pro. M. Ward undertook to examine into the cause.

Tomatos Diseased.—Mr. Morris showed specimens from the gardens at Chiswick attacked by Phytopthora. As this appears to infect the Tomatos when growing in the open, it is suggested that whenever possible they should be at once transferred indoors to a warmer and drier atmosphere, Tomatos requiring a warmer climate than the average English summer to ripen properly. This treatment appears to invigorate them, and renders them not only less susceptible to the disease, but has been known to check the further growth of the fungus at once.

Heteræcismal Fungi.—The following communication was received from Mr. Plowright, accompanied by specimens:—

Puccinia Festucæ, n. sp.—This species occurs on Festuca ovina and F. duriuscula. The æcidiospores occur on the common Honeysuckle. After a long series of unsuccessful cultures upon various grasses and other plants, extending over a period of eight years, I was this year induced to try the effect of placing the spores of Æcidium periclymeni on Festuca duriuscula and ovina. In both cultures the Uredo was produced. I also succeeded in producing the Æcidium on Lonicera periclymenum from the germinating teleutospores. The last-named are in shape somewhat similar to those of P. coronata, with which species they have previously been confounded. The material from which the Æcidium was produced is on the table, as well as the artificially produced uredospores and the æcidiospores from which they were produced.

Puccinia Agrostidis, n. sp.—The æcidiospores of this species have long been known under the name of Æ. Aquilegiæ. Mr. J. H. A. Jenner was kind enough last August to conduct me to a secluded spot in Abbot's Wood, near Lewes, where he had for several years previously found the Æcidium on the wild Columbine. We carefully examined the grasses in the vicinity, and came to the conclusion that the teleutospores probably occurred on Agrostis alba. Material was brought home to Lynn, and from it this year the Æcidium was produced on Aquilegia vulgaris. In May of this year Mr. H. T. Soppitt conducted me to a spot on the east shore of Lake Windermere where the Æcidium Aquilegiæ occurs. Specimens were obtained from which both Mr. Soppitt and myself produced the uredospores on Agrostis alba and vulgaris. The material used for these cultures is on the table.

Puccinia Digraphidis, Soppitt.—Mr. Soppitt's discovery that the Æcidium on Lily of the Valley is connected with a Puccinia on Phalaris arundinacea is very interesting—the more so when we remember that this grass is known to be the host plant of several other Pucciniæ—viz., P. sessilis, which has its æcidiospores on Allium ursinum; P. Phalaridis, which has its æcidiospores on Arum, P. maculatum, and a form of P. coronata—the life-history of which is at present uncertain. The Lily of the Valley, on which I produced the Æcidium from P. Digraphidis, has been growing in my garden at King's Lynn since the year 1879, and has hitherto been free from an Æcidium; but eight days after the germinating æcidiospores of P. Digraphidis were applied to it the Lily leaves began to show signs of the presence of the parasite, which in due course developed into the perfect Æcidium. This culture was done at the request of Mr. Soppitt, in order that his discovery of host plant bearing the teleutospores of the Lily of the Valley Æcidium might be confirmed by an independent observer. The Æcidium produced and the material used for producing it are on the table.

Uromyces maritima, Row.—The life-history of the Æcidium on Glaux maritima was unknown until the present year. In August last Mr. Peake, jun., of Hull, was kind enough to conduct me to the only known British locality for this Æcidium—on the banks of the Humber. From an examination of the surrounding plants I came to the conclusion that the Æcidium on Glaux was due to the Uromyces on Scirpus maritimus. A supply of the Uromyces was collected, and this spring applied to Glaux maritima in my garden at King's Lynn. In due course the æcidiospores were produced; these in turn were applied to healthy plants of Scirpus maritimus and the Uredo produced. The specimens used in their culture are exhibited.

Æcidium on Black Currant Leaves.—This fungus was found by my friend, the Rev. Canon Du Port, on the Norfolk Broads, in June, 1890. Its life history is at present unknown, although I have visited the spot, and hope to be able to work it out from material collected. Whether it be the same species as occurs on Gooseberry pretty commonly in various parts of the country experimental research alone can determine.

Melampsora vernalis on Saxifraga granulata.—This fungus, which is doubtless the teleutospore form of the so-called Cæoma Saxifragæ, was found by Mr. James Taylor, of Clarkfarquhar, is also exhibited.

Melampsora on Salix repens.—The uredospores of this were this year produced on a plant of S. repens, that has been growing for three or four years in my garden, by applying to it the spores of Cæoma Orchidis. It is probably a distinct and undescribed species, as no effect was produced on S. caprea and viminalis by the Cæoma spores. C. Orchidis has been the subject of many cultures made by me during the past nine years. The infecting material and the uredo produced are exhibited.

Potato Disease.—It would be highly desirable if some simple experiments could be conducted this year. The long-continued rains will doubtless induce the disease, and as such experiments could very easily be made, it seems a pity the opportunity should be let slip. The effect of high moulding of alternate rows of some variety fairly susceptible is all that is required to show the protective influence of an efficient earth covering on the tubers; but the recent experiments in France and in America, showing how powerful are the restraining influence of copper dressings applied to the foliage of the plants upon the development of the Phytopthora, certainly ought to be tried. Now that we know the mycelium of the Phytopthora is localised, and that it does not extend "down the stems and along the roots," it is obvious that the spread of the disease takes place only by the enormously prodigious production of the conidia, hence it follows that any agent which can arrest this development, and also sterilise such conidia as may alight upon the healthy foliage, must have a powerful influence for good in checking the spread of the disease. The power that copper dressings have, limiting the spread of the Peronospora on the Vine, has been known in France for many years. A vote of thanks was given to Mr. Plowright for his valuable communication.

In accordance with Mr. Plowright's suggestion, a sub-committee was appointed, consisting of Dr. M. T. Masters, Mr. C. B. Plowright, and Rev. G. Henslow (with power to add to their number) to carry out investigations at Chiswick upon the value of high-moulding, as well as of the use of sulphate of copper and sulphate of iron, in preventing or arresting the Potato disease. Dr. Masters reminded the committee that most valuable results were almost accidentally obtained in 1888, when of two rows most deplorably attacked by Phytopthora one was earthed up with but little hope of its being any use to protect the tubers. The results, however, were most astonishing, as follows*:—"Out of fifty tubers taken from the row moulded in the ordinary way, thirteen were found diseased, or 26 per cent. Out of fifty taken from the high-moulded row five only were noted as diseased, or 10 per cent. Subsequently twenty-five tubers from each row were put aside for future examination. Of the twenty-five taken from the row earthed up in the usual way thirteen were diseased and twelve sound. Of the twenty-five taken from the row earthed up in the Jensenian manner on August 10, when the haulms of both rows appeared to be equally rotten with disease, all the tubers were sound."

* From *Gardeners' Chronicle*, November 17, 1888, p. 572.

EDINBURGH BOTANICAL.

July 10.—The last summer meeting of this Society was held in the Class-room of the Royal Botanic Garden, Mr. Lindsay, President, in the chair. Mr. Gustav Mann made two communications:—One, on a Method of "Fixing and Hardening Objects for Paraffin Embedding and Balsam Mounting;" and the other, a "Review of Haberlandt's Observations on Mimosa sensitiva." Mr. Philip Sewell contributed "Observations on the Flora of the Maritime Alps."

Mr. Lindsay gave in his Report on Temperature and Vegetation at the Royal Botanic Garden for June.

The past month has been very cold and wet for June, and somewhat disappointing after the good prospect held out in May.

Rain fell more or less on seventeen days, during the month. The lowest night temperature was 35°, which occurred on the 8th, and the highest 53° on the 3rd of the month. The lowest day temperature was 52° on the 12th, and the highest 78° on the 10th of the month.

Compared with June last year, the night temperature was very nearly the same, but the day readings were very much lower this June. The foliage of most deciduous trees and shrubs is now complete, and remarkably clean and perfect; insect pests are happily not very abundant. Grass and weeds of all kinds have grown at such a rapid rate, that they have been difficult to keep in order. Conifers have made fine clean growths; fewer plants have come into flower this month than for any June during several years, in consequence of the want of heat and bright sunshine. On the rock garden, 346 species and varieties came into flower during the month, being 100 less than for the corresponding month last year. The most effective plants in flower were the various New Zealand Veronicas and Olearias, large bushes of which have been completely covered with flowers. Other interesting plants in flower in the rock garden were:

Abutilon vitifolium
Aquilegia pyrenaica
Arum palæstinum
Calochortus coeruleus
Cyananthus lobatus
Cynoglossum nervosum
Dianthus alpinus
,, ,, × barbatus
,, ,, × superbus
,, cinnabarinus
,, neglectus
,, superbus
Delphinium nudicaule
Discaria Toumatou
Edraianthus pumiliorum
Epilobium latifolium
,, obcordatum
Eriogonum aureum
Galium cæspitosum
Geranium argenteum
Haberlea rhodopensis
Linnæa borealis
Leontopodium alpinum
Myosotis australis
Nardostachys Jatamansi
Olearia macrodonta
Orchis maculata superba
,, foliosa
Pentstemon humile
,, speciosus
Polemonium flavum
Primula scotica
Phlomis fruticosa
Ramondia pyrenaica
Spiræa procumbens
Saponaria Loderii
Saxifraga fimbriata
Wahlenbergia apetala
Xerophyllum asphodeloides

Extract from Mr. Bullen's Record of Temperature, Vegetation, &c., in the Botanic Garden, Glasgow, June.—The month was remarkable for the cold, wet, and sunless weather experienced here throughout. In looking over my daily notes, I find only one really fine sunny day recorded, *i.e.*, the 29th, and even on that day we had rain early in the morning and late at night. The highest temperature in the shade was 68°, and in the sun 86°, the latter being the highest reading since May 23, when 86° was also registered. The shaded thermometer registered 68° on two days only. The lowest reading was 35°. Hardy trees, shrubs, grass, and most cereal crops made vigorous growth; the same may be said of herbaceous plants generally; but, considering the early and favourable season for growth, the later-blooming kinds are in a backward state. Half-hardy plants are stunted in growth, and poor in bloom. Chrysanthemums, which are undergoing the usual routine of cultivation, look as if they would not attain half the usual height. While we have been deluged with rain, it is curious to note that in parts of England

they suffered badly from drought. Small fruits are an average crop in some places, but other edible fruit crops are a failure.

Mr. Lindsay exhibited specimens in flower and fruit of the Whittinghame Eucalyptus and male catkins and female cones of Araucaria imbricata, and said that on a recent visit to Whittinghame Gardens, East Lothian, the residence of the Right Hon. Arthur J. Balfour, the famous Eucalyptus tree, which grows there, was laden with flower and young fruit, and seemed in perfect health. The tree was planted as a seedling in 1846, and is now about 63 feet in height. It was cut down by frost during the memorable winter of 1860–61. During the following summer it broke away into four limbs. The girth of the stem below, where the massive limbs have sprung, is about 11 feet. Some doubt still exists regarding the species to which the tree belongs. The late Mr. Bentham referred it to E. viminalis, the "Manna Eucalypt." Since then various names have been proposed by different authorities as being more correct, but with none of these does the tree agree so well as with E. viminalis. Not far distant is a seedling, raised from the large tree in 1885. It is 8 feet 10 inches in height, and is also in flower; but for its receiving a check in being transplanted a second time, it would have been taller. A vigorous young plant of E. urnigera, raised in 1885, is growing quite near to the Whittinghame seedling, and is 11 feet 6 inches high. There are also seedling plants of E. coccifera and E. cordata in fine healthy condition. Araucaria imbricata grow well here also. One handsome specimen, 36 feet 6 inches in height, has a magnificent crop of 120 cones; another, 40 feet in height, bears some 20 cones, while there are other four trees bearing cones, and two large trees bearing male catkins; the latter contain abundance of pollen, so that there is every chance of the cones being fertilised.

Professor Balfour exhibited specimens of a Plum affected by Exoascus pruni, and Aspen Poplar fruit affected by Taphrina amea. Dr. Wilson, St. Andrews, sent a plant of Albuca corymbosa, and a hybrid between it and Albuca fastigiata. Mr. W. B. Boyd, Faldonside, exhibited cut blooms of rare plants from his garden. Dr. Craig exhibited a fasciated shoot of Lilium Thunbergianum aurantiacum.

WINCHESTER HORTICULTURAL.

On the occasion of the visit of the Royal Counties Agricultural Society to Winchester, the local Society of Horticulturists held a show meeting on July 8. Local growers were well to the fore in all the classes, and we noticed the names of Messrs. E. Wills, Bassett; J. Cuney, gr. to Colonel Pepper, Salisbury; E. Carr, gr. to W. A. Gillett; W. Reed, gr. to Miss Todd, Sedford Lodge, as exhibitors of plants of various kinds.

The fruit prizes fell to local gardeners—Messrs. N. Molyneux, Cawte, J. Budd, Inglefield, Allen, and others.

Mr. Allen, gr. to Hon. V. Montague, Sutton, staged excellent vegetables; as did Mr. Lye, Lydmonton Court.

PORTSMOUTH HORTICULTURAL.

Victoria Park was the place chosen for the show on July 15. The show was one of the best yet held, and the exhibits of first-rate quality in all sections of the show. Plants formed a great feature. In the principal class, that for twelve stove and greenhouse specimen plants, not less than half of which were to be in flower, and the remainder to consist of fine foliage plants, Mr. J. Cypher, Cheltenham, was 1st, with a collection in which flowering exceeded foliage plants; his Ixora salicifolia showed superb trusses of bloom. Mr. A. Offer, gr. to J. Warren, Esq., Handcross Park, Crawley, was 2nd, showing some beautifully grown and well coloured Crotons; Mr. E. Wills, gr. to Mrs. Pearce, Basset, Southampton, was a very creditable 3rd.

In the four-specimen class, Mr. Penford, gr. to Sir F. FitzWygram, Bart., M.P., Leigh Park, Havant, was the only exhibitor, but he was worthily awarded a 1st prize, the little collection being a capital one.

Specimen Palms, which were not to be less than 6 feet high, were employed to adorn the centre of the large tent, and the 1st prize for those plants fell to Mr. Offer, for three grand plants; Messrs. Penford and Wills following in the order of their names.

Ferns, both Tree and dwarf specimens, were contributed in good condition, Mr. Offer winning in both classes easily.

A brisk competition took place in the single specimen class of flowering and foliage plants, and a finely flowered Ixora Regina of Mr. Cypher's secured for him the 1st place; Mr. Penford following with a well-grown Cypripedium barbatum nigrum.

Mr. Offer was 1st in the foliage section for a grand specimen of Croton Warneri; Mr. Penford being 2nd with a plant of Cycas circinalis.

Fruit was well grown. Mr. Inglefield, gr. to Sir J. Kelk, Bart., Tedworth, Marlborough, had the best six dishes, his Grapes, Peaches, Figs, and Melon being excellently shown.

Black Grapes made a great display, and Madresfield Court was in capital condition. Mr. J. Tavener, gr. to Sir A. K. Macdonald, Woolmer Lodge, Liphook, was 1st. Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Wickham, Fareham, followed with excellent Black Hamburgh.

For three bunches of white Grapes, Mr. Inglefield was 1st, with well finished bunches of Muscat of Alexandria. Mr. N. Molyneux followed with Foster's Seedling.

The best Peaches were shown by Mr. Inglefield, the best Nectarines by Mr. T. Wilkins, gr. to Lady Theodora Guest, Inwood House, Henstridge; the best scarlet flesh Melon by Mr. Dimmick, gr. to Mrs. Young, The Limes, North End, Portsmouth; and the best green flesh by Mr. Penford.

Many exhibitors showed single dishes of various fruits, and vegetables by others, these last in considerable quantities.

WOLVERHAMPTON.

July 15.—Favoured with splendid weather, a very fine exhibition took place in the Public Park on Wednesday, and was visited by a great company.

Stove and Greenhouse Plants were a great feature, and filled one very large tent; the handsome prizes offered for sixteen specimens, including fine-foliaged plants, brought a smart competition, Mr. James Cypher, Nurseryman, Cheltenham, being placed 1st, with perhaps the finest collection he has staged this season; it included admirable Crotons and Ericas, among them a very fine specimen of E. Parmentieriana rosea; Ixoras, with a grand piece of I. regina, Palms, &c.; 2nd, and a remarkably good 2nd too, Mr. Finch, gr. to J. Marriott, Esq., Coventry, who staged some capital plants of similar character. Mr. Cypher had the best six plants in flower, having a superb lot, including Ixora Duffii, and I. salicifolia, such examples of these two species as are rarely seen; Erica jubana, E. Parmentieriana rosea, Clerodendron Balfourianum, and Stephanotis floribunda; 2nd, Mr. Finch, with excellent specimens of Ixoras Fraseri and Williamsii, Allamanda Hendersoni, &c. Collections of six plants were also shown by gentlemen's gardeners confined to a certain district, and some fairly good plants were staged.

Mr. J. Cypher had the best eight Orchids, staging very good specimens of Cattleya Sanderiana, very fine; and C. Gaskelliana, Anguloa Clowesii, Lælia purpurata, Cypripedium Lawrenceanum, C. Stonei, and C. Curtisii, and the sweet-scented Dendrobium filiforme. Mr. Finch was 2nd, with a fine piece of Cypripedium Lowianum, Odontoglossum Lindleyanum, Maxillaria grandiflora, Cattleya Gaskelliana, Aërides odoratum, &c. Collections of six Orchids were also shown, Cattleyas being prominent.

Groups of plants arranged for effect were an imposing feature; the 1st prize for one filling a space of 450 feet was won by Mr. Currey, gr. to Colonel Pepper, Salisbury, a number of brilliantly-coloured Crotons, Dracænas, being arranged with suitable flowering plants, Ferns, &c. Mr. G. Powell, gr. to G. H. Kenrick, Esq., Birmingham, was a good 2nd, excellent subjects being employed, but it was less artistic and more formal than Colonel Pepper's.

Three exceptionally fine collections of fine-foliaged plants were staged, and Mr. Finch came in 1st, a grandly-coloured example of Croton Mortfontainensis being especially conspicuous. Mr. W. H. Dyer, gr. to Mr. Marigold, Edgbaston, was 2nd; a brilliant-coloured Croton Etna being conspicuous here.

Palms, shown in sixes, were a grand feature. Mr. Cypher was 1st with a fine specimen of the sugar-producing Arenga saccharifera from the Philippines; Kentias, Belmoreana, Forsteriana, and australis; Latania borbonica, and Thrinax elegans.

Cut flowers were largely represented by Roses; some excellent blooms were staged, there being a keen competition. Mr. F. Cant, nurseryman, Colchester, was 1st with forty-eight blooms, fine, fresh, well-coloured examples being staged; the English Flower and Fruit Company, Hereford, were 2nd.

The best twelve blooms of a dark Rose were some superb examples of Alfred Colomb, from Hereford; Mr. Cant being 2nd, with Marie Baumann. Mr. Cant had the best twelve blooms of a light Rose, having a dozen exquisite examples of Mrs. John Laing; Messrs. Prior & Son, of Colchester, being 2nd, with Lady Mary Fitzwilliam. The best twelve bunches of Tea Roses came from Hereford, and Mr. F. Cant was 2nd. Messrs. Perkins & Son, Coventry, had the best twelve varieties of light Roses; the English Flower Company was 2nd. Roses were also largely shown by gardeners and amateurs.

Fruit was generally well represented. The best collection of ten varieties came from Mr. P. Blair, Trentham Gardens, who had Black Hamburgh, Muscat of Alexandria, and Duke of Buccleuch Grapes; Royal George Peaches, Lord Napier Nectarine, Sir Harry Strawberries, a fine Smooth Cayenne Pine, Queen, &c. Mr. Blair also had the best six dishes, with four bunches of Grapes. Mr. J. Wilks, gr. to G. Meakin, Esq., was 1st, with Madresfield Court, Black Hamburgh, Muscat of Alexandria, and Foster's Seedling. The best dish of Peaches was superb Royal George, from Mr. Blair; such fruit as is rarely seen. He also had the best dish of Nectarines, staging Lord Napier. Strawberries were fairly good.

A great many very fine vegetables were staged, especially in competition for the special prizes given by Messrs. Sutton & Son's, Reading; and E. Webb & Sons, Wordsley.

The special prize of 5 guineas, offered by the Mayor of Wolverhampton for the most meritorious exhibit in the show, was awarded to F. W. Cypher's superb collection of sixteen stove and greenhouse plants.

Miscellaneous collections not for exhibition included a large group of plants, comprising Lilium longifolium, &c. Cut examples of pictorial trees and shrubs, cut flowers, &c., from Messrs. Richard Smith & Co., nurserymen, Wolverhampton; plants, cut flowers, &c., from Messrs. R. Lowe & Co., nurserymen, Birmingham, and Messrs. Hewett & Co., nurserymen, Solihull; cut flowers of Carnations, excellent Pinks, &c., from Mr. A. R. Brown, florist, Handsworth, Birmingham, &c.

STAMFORD.

July 15 and 16.—The annual show was held on Tuesday and Wednesday in Burghley Park, near Stamford. The feature of the show was the collection of Roses. In the division, open to all England, there was a fine collection of forty-eight blooms, distinct. The 1st prize, a Silver Medal, and £5, was awarded to Messrs. Harkness & Sons, Bedale, Yorkshire; Mr. B. R. Cant, of Colchester, being 2nd, in a close competition. Messrs. Harkness' best specimens were—Ulrich Brunner, Mrs. John Laing, Charles Lefebvre, Marie Verdier, A. K. Williams, Captain Christy, and Horace Vernet.

In the class for twenty-four blooms, distinct varieties, there was a keen competition, the 1st prize, a Bronze Medal and £1, eventually being awarded to Mr. B. R. Cant, whose collection included Marie Baumann, Pride of Waltham, and Captain Christy.

The class for twelve distinct varieties of Tea Roses was well filled, Messrs. Merryweather being awarded the 1st place, the group containing, amongst others, Innocente Pirola, Caroline Kuster, Madame de Watteville, and Souvenir d'Elise Vardon.

In the class for twenty-four distinct blooms (nurserymen excluded), the Rev. Mr. Pemberton led.

Mr. W. H. Divers, Ketton Hall Gardens, Stamford, was 1st for a group arranged for effect, and figured well in many classes. Mr. R. Gilbert, Burghley Park Gardens, Stamford, showed fruit very well, and received several 1sts.

HOUNSLOW, HESTON, AND ISLEWORTH HORTICULTURAL.

The fifth annual exhibition of plants, flowers, fruits, vegetables, &c., took place on the 16th ult., in the grounds of Spring Grove House, Isleworth, which it may be mentioned was the seat of Sir Joseph Banks at the beginning of the present century. The grounds now belong to Andrew Pears, Esq., F.R.H.S., who is sparing neither pains nor money to render Spring Grove Gardens among the finest in the kingdom for their size.

In one of the tents a nice group of stove and

greenhouse plants were shown by Mr. G. Wythes, the Duke of Northumberland's gardener at Syon House, consisting of Ixoras, Nepenthes, Palms, Dracænas, Crotons, Lilies, Caladiums, &c.

Messrs. Fromow & Sons took the 1st prize for table plants, among their exhibits being Orchids, Gloxinias, Begonias, Hydrangeas, Palms, Pandanus graminifolius, &c.

In a group of plants, arranged by Mr. Chambers, of The Woodlands, Isleworth, were some fine specimens of Agapanthus umbellatus, Anthurium Scherzerianum, Viola Snowflake, and Eryngium Oliverianum, the latter attracting much attention by its spiny bracts and teazle-like heads of a beautiful bluish sheen.

Roses were shown in numbers by Messrs. Veitch & Son; Mr. Turner, of Slough; Messrs. Lee & Son; Mr. Regester, of Isleworth; and Mr. Spooner, of Hounslow.

Among the fruit were some good bunches of Grapes from Joseph Cobb, Esq. (Hounslow) who took 1st prize; Cherries by Mr. Weeden, fine Strawberries from Mr. Turner, and numerous other lots of Gooseberries, Currants, and Raspberries.

The cottagers of the neighbourhood entered with keen rivalry into the competitions for vegetables; and Potatos, Beans, Carrots, Turnips, Onions, Cauliflowers, Cabbages, and Beets, were displayed in great quantities by them, much taste being bestowed by many in their arrangements, which met with the approval of the judges.

Competitions were instituted for window-boxes, buttonholes, and bouquets, and these were entered into with spirit.

NATIONAL PINK (Northern Section).

A very good commencement indeed was made with this on the occasion of the Rose Show at Old Trafford on July 19. It is true that the schedule of prizes was issued only a short time before the exhibition took place, but such a good response was made to Mr. Samuel Barlow's appeal, that not only was the prize-money forthcoming, but a very promising display was made by the northern growers, although a week later would have enabled very much better flowers to have been staged.

The best twelve blooms, in not less than six varieties, came from Mr. M. Campbell, florist, Auchenrieth Nurseries, Blantyre, who had a few very good flowers of Modesty, a charming variety; Ada Louisa, Dr. Maclean, Nothing Better, a dark-laced flower; Boiard, Reliance, Device, Godfrey, and John Darke, the latter with a finely-formed petal. The lacing was generally good; Mr. Samuel Barlow, Stakehill House, Castleton, was 2nd, with a very fine bloom of Boiard, George Hodgkinson, Brown's Heavy Red, Mrs. Thurstan, Henry Hooper, and Mrs. Darke, an extremely free-blooming variety.

There were five competitors in the class for six blooms, distinct, and Mr. S. Barlow was 1st with Boiard, Mrs. Darke, Brown's Heavy Red, George Hodgkinson, James Thurstan, a very fine dark-laced Pink, smooth in the petal, and of fine quality in other respects, and one that was unnamed; 2nd, Mr. Tom Lord, Hole Bottom, Todmorden, with Boiard, Rosy Morn, Modesty, Bertram, Mrs. Darke, and Eurydice.

The best six, in not less than three varieties, also came from Mr. Samuel Barlow, who had two blooms each of Mrs. Darke and Brown's Heavy Red, and one each of Boiard, and one unnamed; 2nd, Mr. F. Morton, Wolverhampton, with two blooms of George Hodgkinson, and one each of Boiard, Henry Hooper, Mrs. Darke, and Clipper.

The class for three blooms, one a purple, one a red-laced, and one black and white, did not bring an entry; the latter type seems to have quite gone out of cultivation.

In the class for single blooms of purple-laced Pinks, Mr. S. Barlow was 1st, 2nd, and 4th with Boiard, 3rd with Henry Hooper, and 5th with George Hodgkinson.

In the class for red-laced, Mr. Tom Lord was 1st and 2nd with Bertram, and 4th with Modesty; Mr. Barlow 3rd with Mrs. Darke, and 5th with the same.

The premier purple-laced pink was Boiard, shown by Mr. Barlow, and the premier red-laced Modesty, from Mr. M. Campbell.

A very interesting class was that for a collection of Pinks of any type, and there were two collections, the flowers being shown in bunches. The best came from Mr. Thomas Walkenden, Moorside Nursery, Sale, who put up a very interesting lot containing some novelties of a very valuable character. Among white varieties he had William Brownhill, pure white, with fine shell-like petals; Mrs. Sinkins, fimbriata alba, and some seedlings, without names; of laced varieties, Progress, white, laced with delicate pink, and Emily; and of other varieties, Linley Walkenden, white, with a slight blush-tint in the centre; Souvenir de Sale, soft lilac-pink, and several Seedlings of promise. Some bouquets, vases, &c. were also made up of Pinks with appropriate foliage, showing the uses to which they can be put. Mr. S. Barlow was 2nd, with bunches of fine laced varieties, and some seedlings of Mr. Lakin, of Cowley, and bunches of the bright-coloured mule Pink, Napoleon III.

Certificates of Merit were awarded to Souvenir de Sale, a very distinct and pleasing border and pot variety; Linley Walkenden, a fine white tinted with blush; Progress, and William Brownhill, all remarkably good.

WOODBRIDGE.

July 17.—Favoured with fine weather, this year's show, held as usual in the Abbey Grounds, was a great success in all respects. Roses were a feature, and in the class for thirty-six varieties, the Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich, was successful above Messrs. D. Prior & Son, of Colchester; while Mr. J. Woods, of Woodbridge, was 3rd. Taken all round, the display was not quite so good or so large as at Ipswich, but the Rev. H. A. Berners showed in better form. Messrs. Prior & Son won the National Rose Society's Silver Medal, in an open class for the best hybrid perpetual Rose, with a good bloom of A. K. Williams; and a similar prize for amateurs was taken by the Rev. A. Foster-Melliar. In two classes the competition was so close that there was only a point or two between the stands from Sproughton and Harkstead; and among the other successful exhibitors were the Rev. H. T. Frere (Burston), Mr. E. G. Orpen (of West Bergholt), Mr. Frank Garrett, Mrs. C. E. Green (Burgh), Miss Walford (Foxborough Hall), and Mr. W. W. Parsons (Woodbridge).

In the classes for other cut flowers, there was a good show of Pelargoniums, the principal prize for twelve distinct varieties going to Mr. R. Austin, Ipswich. Herbaceous flowers were not a large show, Messrs. Gilbert & Son coming first, and Mr. S. C. Buttrum, of Burgh, showed Carnations, which were awarded both prizes in the leading class. The Duke of Hamilton took 1st prize for the best six varieties of perpetual blooming Carnations or Picotees, and Captain Carthew had a strong show of Verbenas, taking the Special Prize presented by Messrs. W. Clibran & Son for the best plants in pots.

Stove and greenhouse plants were good and well set up, without being in any way remarkable; exotic Ferns were above the average, and the fruit was remarkably fine.

HIGHGATE HORTICULTURAL.

The thirty-first summer show was held on the 17th ult., by permission of A. J. Reynolds, Esq., in his grounds, Northfield, Highgate. The show—a good one—well maintained the repute of Highgate Horticultural Society as one of the best in the suburbs, and the competition in the various classes was keen. Among noteworthy exhibits were the groups of plants, for which there are two classes. A group of flowering plants occupying 60 square feet: Mr. J. Brooks, gr. to W. Reynolds, Esq., The Grove, Highgate, was 1st; it was a very pretty arrangement, and closely followed by Mr. J. Brittain, gr. to F. Reckitt, Esq., Caen Wood Towers, and Mr. H. Eason, gr. to B. Noakes, Esq., Hope Cottage. In the class for a group arranged for effect, of 54 superficial feet, the two last exhibitors were placed 1st and 2nd in the order of their names.

Flowering plants were good, and for six plants, Mr. Eason was 1st, with finely-flowered specimens of Allamanda, Ixora, Erica, Dracophyllum, Bougainvillea, and Clerodendron; and Mr. Brooks was 2nd, his best plants being Allamanda Hendersonii and Clerodendron Balfourianum.

For six foliage plants, Mr. Eason was again 1st, with a Croton, Alocasia macrorhiza variegata, Kentia Belmoreana, Anthurium crystallinum, Pandanus Veitchii, and Asparagus plumosus. Mr. J. Brittain, who was 2nd, had a Croton, an Areca, and a Date Palm.

Mr. J. Rowson, gr. to J. W. Lloyd, Esq., Merton Lodge, was 1st, for six zonal Pelargoniums; and was followed by Mr. C. Shepherd, gr. to S. S. Duval, Esq., South Grove.

Mr. J. Brooks was 1st for six exotic Ferns, and staged good plants of Adiantum formosum, A. trapeziforme, A. concinnum latum, Davallia Mooreana, Lomaria gibba; Mr. Brittain and Mr. Eason being 2nd and 3rd respectively.

For six Fuchsias, Mr. Brooks and Mr. Quelch, gr. to W. Howard, Esq., Shepherd's Hill, were 1st and 2nd, each showing well-grown and flowered plants.

For twelve tuberous-rooted Begonias and twelve Gloxinias, Mr. Eason was 1st; some of his plants of Gloxinias were quite 2 feet across, with forty to fifty flowers on each, and his Begonias were as good; 2nd, Mr. G. Agate, gr. to H. Taylor, Esq., New Southgate, with good plants.

For Caladiums, Mr. Brooks and Mr. Eason were 1st and 2nd respectively; as also for Orchids, chiefly Cypripediums.

Fruit.—Mr. B. Calvert, gr. to J. A. Houblon, Esq., Great Hallingbury, Bishop's Stortford, was 1st, with three well-finished bunches of Black Hamburgh; and Mr. J. Brittain was 2nd, for three bunches of white Grapes. Mr. Brittain was 1st in the white Grape class, with Foster's Seedling.

Melons, Peaches, and Nectarines were shown by the gardeners of the locality, but fruit was not plentiful, although the quality of what was shown was high.

Amateurs and cottagers made a good display in a large tent, specially provided for them.

CATERHAM HORTICULTURAL.

July 23.—The annual exhibition took place in the Public Hall, Caterham Valley, and was one of the best shows held by the Society; but the building, which is the largest available, was altogether inadequate to display the exhibits to the best advantage. Capital groups of plants and flowers, not for exhibition, were furnished by Messrs. J. Laing & Son, Stanstead Park Nurseries, Forest Hill; Messrs. B. Bud & Sons. Nurserymen, Brixton; and Mr. G. J. Woollet, Nurserymen, Caterham. Some good groups arranged for effect were shown, but generally overcrowded; some very fine Ferns came from two or three exhibitors, and tuberous-rooted Begonias were well grown and bloomed; Achimenes and Gloxinias were good, and specimen stove and greenhouse plants highly creditable. The leading exhibitors and prize takers were: Mr. E. Coles, gr. to W. Lamb, Esq., Caterham; Mr. Passworth, gr. to J. Lyon, Esq., Caterham; Mr. Harrison, gr. to R. H. Salmon, Esq., Caterham; Mr. Brand, gr. to W. P. Gardener, Esq., Caterham; and Mr. Palmer, gr. to P. Clarke, Esq., Caterham.

ALDENHAM HORTICULTURAL.

July 23.—This Society held its successful annual show at Newberries, Radlett. The main feature was the well set up honorary exhibits. Mr. Beckett, from Aldenham House, brought a collection of decorative plants, set up with much taste, avoiding formality. The same exhibitor showed a good collection of vegetables and fruit. Mr. Neve, of Aldenham Abbey, had a large and well-arranged group of stove plants and Orchids, amongst the latter being a well-coloured Disa grandiflora, and some good pieces of Epidendrum vitellinum majus. Mr. Richardson, gr. to S. T. Holland, Esq., Otterspool, also contributed a well-grown collection, including good Cockscombs and Celosias.

Amongst the cut flowers a large collection of hardy flowers from the gardens of Aldenham House was the most conspicuous feature. Cottage gardeners showed well. Messrs. Cutbush, of Highgate, showed a good collection of Roses.

ROYAL AQUARIUM.

July 29 and 30.—This exhibition, held on Tuesday and Wednesday last, was a very good one, Carnations and Picotees being well represented. Mr. C. Turner, Slough, Mr. J. Douglas, Great Gearies Gardens, Ilford, and Mr. Anstiss, Brill, were the chief prizetakers, and the premier bloom was Robert Houlgrave, S.B., shown in a stand by Mr. Rowan, Clapham. Mr. C. Turner was very strong in the Picotee class, and Mr. J. Douglas also showed some good blooms, including the premier light rose-edge, Luddingston Favourite.

Prizes were offered for Tuberous Begonias, and

Messrs. J. Laing & Sons, Forest Hill, S.E., won 1st in six classes without competition, but in the chief class, for a group for from 100 to 150 square feet, Messrs. H. Cannell & Sons, Swanley, Kent, were a very good 2nd.

Non-competing exhibits were very numerous, and among them were outdoor Begonias and border Carnations from Messrs. J. Veitch & Son, Chelsea; Pansies and Violas from Messrs. Dobbie & Co., Rothesay; Messrs. J. Peed & Sons, South Norwood, had Gloxinias; Messrs. J. Laing & Sons sent border Carnations and herbaceous plants; Sweet Peas came from Mr. H. Eckford, Wem; Fancy Pansies and herbaceous plants, from Messrs. Ryder, Sale, near Manchester; collections of herbaceous plants were contributed by Messrs. Barr & Son, Covent Garden; T. S. Ware, Tottenham; Paul & Son, Cheshunt; and E. F. Such, Maidenhead; and Roses came from Rev. J. H. Pemberton, Messrs. Paul & Son, and Mr. W. Rumsey, Waltham Cross, and Messrs. D. Prior & Son; Lilies were shown by Mr. W. Gordon, Twickenham.

A little fruit was shown. Twenty-four dishes of Tomatos from Messrs. Fellows & Ryder, Orpington, were very good; and Mr. H. J. Jones, Lewisham, showed fruits and plants in pots. Mr. W. G. Gilbert, Sennowe Hall, Guist, had six Melons in good condition; and some fine Cucumbers were shown by Mr. S. Mortimer, Rowledge, Farnham. Messrs. Sutton & Sons, Reading, offered prizes, Mr. C. J. Waite, Esher, and Mr. R. Simms, Tyler's Green, Bucks, each taking 1st for Peas; while Mr. Saunders, Cobham, had the best Melon. Prizes were offered by Messrs. C. Sharpe & Co., Sleaford, for Peas; and in a good competition Mr. P. C. Cornish, gr. to J. Downie, Esq., Enfield, was placed 1st.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Accumulated. Above (+) or below (—) the Mean for the week ending July 26.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	2 —	77	0	+ 62	— 72	0 av.	146	27.4	17	25
2	1 —	99	0	— 49	— 58	4 —	124	16.8	38	30
3	1 —	117	0	— 24	— 93	4 —	105	12.3	42	27
4	2 —	123	0	— 59	— 39	5 —	111	14.6	48	35
5	1 —	127	0	— 76	— 26	3 —	103	12.7	44	31
6	1 —	132	0	— 56	— 68	4 —	105	16.4	47	33
7	0 av.	106	0	— 13	— 73	2 —	126	27.6	34	32
8	1 —	119	0	+ 2	— 81	1 +	119	17.6	36	29
9	0 av.	130	0	— 53	+ 12	6 —	122	21.0	31	34
10	1 —	112	0	— 19	— 56	1 -	137	17.6	18	31
11	1 +	130	0	— 4	— 15	2 —	134	24.0	19	32
12	2 —	123	0	+ 37	— 22	5 —	126	20.3	28	39

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 26, is furnished from the Meteorological Office:—

"The *weather* has been upon the whole considerably finer than for many weeks past, although showers have been somewhat frequent in the western and northern districts.

"The *temperature* has been 1° or 2° below the mean in most districts, but in 'England, S.W.,' there has been no appreciable departure from the normal, while in 'Ireland, S.,' a slight excess has occurred. The highest readings which were observed on various dates in the different districts ranged from 78° in 'England, S.,' and 76° in the 'Midland Counties' and 'Ireland, S.,' to 69° in 'Scotland, N.,' and 68° in the 'Channel Islands.' In Ireland the daily maxima have been frequently below 65°, while in the north of Scotland the thermometer has on some occasions failed to reach 60°. The lowest of the minima which were recorded either at the commencement or at the end of the week ranged from 37° in 'Scotland, N.,' 'Scotland, E.,' 'England, N.W.,' and 'England, S.W.' to 45° in 'England, S.,' 47° in 'Ireland, S.,' 55° in the 'Channel Islands.'

"The *rainfall* has been less than the mean in all districts, excepting 'Scotland, N.,' and 'England, N.W.' In the former district the amount was just equal to the average, while in the latter it was slightly in excess.

"*Bright sunshine.*—In Ireland and the west and north of Scotland the amount of bright sunshine has been less than that recorded during the previous weeks, the proportion of the possible amount being so low as from 17 to 19 per cent. Over England and the east of Scotland, however, there has been a marked increase of fine weather, the percentage values being as high as 47° in 'England, S.,' and 48° in 'England, E.'

LAW NOTES.

TOMPKINS' TRUSTEE *v.* SANDER.

At St. Albans, on July 25, his Honour Judge Holl, Q.C., delivered judgment in the above long-standing matter. The case, it will be remembered, arose out of the bankruptcy of John Tompkins, formerly in Mr. Sander's employment as office-clerk, and to whom Mr. Sander sold his George Street seed business for over £900, whilst Tompkins had absolutely no capital, and was never able to pay the purchase money, although he was allowed by Mr. Sander to take possession and trade for several months without being sued. The chief points that his Honour had to settle in a very complicated case were:—Did Mr. Sander part with his business in a *bonâ fide* way, believing Tompkins would get financed by an uncle; and when, later on, he recovered an unopposed judgment in the High Court against Tompkins for £1,000 for the purchase of the business, did he obtain that free from collusion, and as an honest piece of litigation? The claim of the trustee was that that judgment should be set aside and declared void as having been obtained by collusion.

His Honour delivered an elaborate judgment, occupying nearly half-an-hour, and entered into the details of the case. He came to the conclusion that Mr. Sander sold the business in a perfectly *bonâ fide* way to Tompkins, that Tompkins' testimony was not to be relied on, that Mr. Sander (also the solicitor, Mr. Cannon) obtained the High Court judgment for £1,000 honestly and without collusion, and that throughout Mr. Sander had only been concerned, first, in disposing of a good and profitable business and afterwards in protecting, as he had a legal right to do, his own interests, and recovering the purchase money of his George Street seed business. The trustee's application against Mr. Sander failed, and judgment was therefore for Mr. Sander on every point, with costs against the trustee, who would be allowed to recoup himself from the estate, as far as it will go. *Hertfordshire Standard.*

MARKETS.

COVENT GARDEN, July 31.

The supplies of soft fruit have fallen off this week, and prices keep firm. Of indoor fruit there is a heavy supply. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Cherries, ½-sieve	2 0	9 0	Melons, each	1 6	3 0
Currants, red, ½-sieve	3 0	4 0	Peaches, dozen	3 0	10 0
— black, ½-sieve	4 9	5 0	Pine-apples, St. Michael, each	2 0	6 0
Grapes, lb.	0 9	3 0	Strawberries, lb.	0 2	0 9
Lemons, per case	12 0	20 0			

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Artichs., Globe, each	0 4	—	Mustard and Cress, punnet	0 4	—
Beans, French, lb.	8 0	—	Onions, per bunch	0 5	—
Beet, red, per dozen	1 0	2 0	Peas, per quart	1 0	—
Carrots, per bunch	0 6	—	Parsley, per bunch	0 6	—
Cauliflowers, each	0 3	—	Shallots, per lb.	0 6	—
Celery, per bundle	1 6	2 0	Spinach per bushel	3 0	—
Cucumbers, each	0 6	1 0	Sprue, per bundle	1 6	—
Endive, per dozen	2 0	—	Tomatos, per lb.	1 0	—
Herbs, per bunch	0 4	—	Turnips, per bunch, new	0 4	—
Lettuces, per dozen	1 6	—			
Mushrooms, punnet	1 6	—			

Potatos.—As anticipated in my last, prices have fallen considerably, and supplies increased. The appearance of the Potato disease has occasioned much lower prices to rule. Trade is not likely to improve unless harvest operations should interfere very much with Potato lifting. Kidney Potatos generally are sound, and are selling at 90*s.* to 100*s.*; Beauty of Hebron (or other kinds), more or less diseased, at 50*s.* to 80*s.* *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Fuchsia, per doz.	4 0	9 0
Aspidistra, doz.	18 0	42 0	Heliotrope, per doz.	4 0	6 0
— speci. plants, each	7 6	10 6	Hydrangeas, doz.	6 0	18 0
Begonias, per doz.	6 0	18 0	Ivy Pelargonium, per dozen	3 0	6 0
Cactus, per doz.	4 0	12 0	Liliums, various, per dozen	18 0	36 0
Calceolaria, p. doz.	4 0	6 0	Lobelia, per doz.	3 0	6 0
Cyperus, per dozen	4 0	12 0	Marguerites, doz.	6 0	12 0
Dracæna terminalis, per dozen	30 0	60 0	Mignonette, per doz.	3 0	6 0
— viridis, per doz.	12 0	24 0	Musk, per dozen	1 6	3 0
Euonymus, in var., per dozen	6 0	18 0	Nasturtiums, p. doz.	4 0	6 0
Evergreens, in var., per dozen	6 0	24 0	Palms in var., each	2 6	21 0
Ericas, various, doz.	8 0	24 0	Pelargoniums, scarlet, per dozen	3 0	6 0
Ferns, in var., doz	4 0	18 0	— per doz.	6 0	12 0
Ficus elastica, each	1 6	7 0	Petunias, per doz.	6 0	9 0
Foliage plants, various, each	2 0	10 0	Roses, various, doz.	12 0	24 0

*** Bedding plants in variety in boxes, and also in pots.

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Pelargoniums, scarlet, 12 spr.	0 3	0 6
Bouvardias, per bun.	0 6	1 0	— dozen sprays	0 6	1 0
Callæthiopica, 12 bl.	3 0	5 0	Primulas, double, 12 sprays	0 6	1 0
Carnations, 12 blms.	1 0	2 0	Pansy, or Heartsease, 12 bunches	1 0	2 0
— 12 bunches	4 0	6 0	Poppies, various, doz. bunches	1 0	2 6
Cornflower, 12 bun.	1 6	3 0	Pyrethrum, 12 bun.	3 0	6 0
Eschscholtzia, 12 bn.	2 0	3 0	Roses, Tea, per doz.	0 6	1 6
Eucharis, per dozen	4 0	6 0	— coloured, dozen	1 0	1 6
Gardenias, 12 blooms	2 0	4 0	— red, per 12 bun.	2 0	6 0
Heliotropes, 12 spr.	0 6	1 0	— Safrano, dozen	1 0	2 0
Lilium, var., 12 bl.	0 6	4 0	— outdoor, 12 bun.	1 0	3 0
Maiden Hair Fern, do	4 0	9 0	Stephanotis, 12 spr.	1 6	3 0
Marguerites, 12 bun.	3 0	6 0	Sultan, 12 bunches	3 0	4 0
Mignonette, 12 bun.	2 0	4 0	Tuberoses, 12 blms.	0 3	0 6
Myosotis or Forget-me-nots, 12 bun.	2 0	4 0			
Pinks, various, 12 bn.	3 0	6 0			

Orchid-bloom in variety.

SEEDS.

London: *July* 30.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, report a thin attendance on to-day's market, with a paucity of transactions. In Trefoil, a further move upwards has been seen. Continental samples show very poor quality. Cloverseeds of all kinds keep very firm. New foreign Italian is now offering. For Trifolium, the inquiries thus far have been unimportant. Good new English Rapeseed is now obtainable on exceedingly moderate terms. Fine sowing Mustard realises late rates. Blue Peas have become scarce. In Bird seeds there is not much business passing.

FRUIT AND VEGETABLES.

Stratford: *July* 30.—The supply has been good during the past week, and a fair trade done at the undermentioned prices:—Cabbages, 2*s.* to 5*s.* per tally; Onions, Oportos, 8*s.* to 9*s.* per cwt.; Dutch, 4*s.* 6*d.* per bag; Gooseberries, 3*s.* to 4*s.* per half-sieve; Cucumbers, 2*s.* to 4*s.* per dozen; Walnuts, 3*s.* to 3*s.* 6*d.* per half-sieve; Nuts (Filberts), 5*d.* per lb.; Tomatos (Jerseys), 3*d.* do.; Currants, red, 5*s.* to 5*s.* 6*d.* per half sieve; black 5*s.* 6*d.* to 6*s.* 6*d.* do.; Green Gages, 4*s.* 6*d.* per basket; Raspberries, 2*s.* do.

POTATOS.

Borough and Spitalfields: *July* 29.—Myatt's home grown, 100*s.* to 120*s.*; Hebrons, 60*s.* to 90*s.*; Early Regents, 80*s.* to 90*s.* per ton.

Spitalfields: *July* 30. — Quotations: — New; Myatt's kidneys, 60*s.* to 70*s.*; Regents, 60*s.* to 80*s.*; Imperators, 60*s.* to 80*s.*; Hebrons, 45*s.* to 70*s.*; Early Rose, 40*s.* to 60*s.* per ton.

Stratford: *July* 30. — Quotations: — Myatt's, 60*s.* to 80*s.*; Hebrons, 60*s.* to 80*s.*; do. white, 60*s.* to 80*s.*; Regents, 50*s.* to 70*s.*; Early Rose, 50*s.* to 55*s.* per ton.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 75*s.* to 100*s.*; do., inferior, 46*s.* to 75*s.*; best hay, 60*s.* to 95*s.*; inferior do., 26*s.* to 50*s.*; and straw, 20*s.* to 40*s.* per load.

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

Could you inform me whether the Mackay district of Queensland is adapted for growing Cacao (Theobroma), Coffee, Tea, and Cinchona? These require abundant rainfall. Also, what chance would there be for growing Tea and Cinchona near to Wellington or Nelson, in New Zealand? Is there any frost to injure these cultures? Natal is, I understand, a fine country for Tea and Coffee—and, perhaps, Cacao; but I am ignorant of the rainfall in the latter country. It seems to me that you would confer a boon upon many intending emigrants to the more tropical colonies if you could publish what cultures, apart from such as cereals, could be most advantageously undertaken—of course, keeping in mind the requisite climatic conditions. The *Kew Bulletin* does not aid us in this matter. *N. Z.* [Perhaps some of our readers can supply the information. Ed,]

Bathœnia.—Where is this place? In Johnston's *Dendographia*, 1672, the Sweet Briar is mentioned as growing "circa Bathœniam." It certainly does not grow wild near Bath. *E.*

NOTICES TO CORRESPONDENTS.

Black Hamburgh Grapes Beginning to Colour: *C. C.* At this season of the year this variety will ripen in this country without fire-heat, and will colour well if advantage be taken of sunny days to ventilate freely at the top of the vineries, assisting the circulation by admitting fresh air by means of slight openings at the front. In dull, cool weather, a little fire-heat will keep mildew at bay, and allow of some small amount of ventilation being given. If the border be well drained, water should be given it with no sparing hand, but no manure-water. Keep as much foliage as you can without crowding it, and let it shade the bunches. Black Grapes colour best when shaded. Under this treatment, if there was no over-cropping last or this year, the Grapes should colour well. Do not give front ventilation at night until the fruit is ripe.

Books: *Dresden. A Manual of Orchidaceous Plants*, in course of publication, price ranging, per No., from 7*s.* 6*d.* to 10*s.* 6*d.* for the ordinary edition. (James Veitch and Sons, Chelsea, London.) If you get this work it will supply your needs. Another good work, containing much cultural matter, is the *Orchid Manual*, by the late B. S. Williams, Paradise Nurseries, Upper Holloway—a well illustrated work, mainly cultural; and the *Orchid Album*, by the same author, price 5*s.* per part.—Budding and Grafting. *R. S. The Art of Budding and Grafting* (Baltet), published by W. Robinson, *Garden* Office, 37, Southampton Street, W.C.

Charlock: *E. Bland.* The deformity is caused by a fungus, Cystopus candidus.

Figs not Swelling: *Inquirer.* Growth has possibly been arrested by something being the matter at the roots—perhaps the three manurial waterings per week, which must have been mostly unneeded. You do not say if leaf or shoot growth are excessive.

Mushroom: *J. H.* Only a form of the common Mushroom.

Name of Fruit: *W. R.* Grosse Mignonne Peach.

Names of Plants: *P. B.* Lonicera Ledebourii.—*F. E. B.* 1, Verbascum phœniceum; 3, Chrysanthemum lacustre; 4, Statice Limonium; 5, Spiræa Douglasi; 6, Potentilla nepalensis.—*E. H. G.* Gaultheria Shallon.—*C. S. S.* 1, Cornus sanguinea; 2, Pilea muscosa, the so-called Artillery Plant.—*Munches.* Abies Douglasii, var. Stairii, originally described in these columns November 18, 1871.—*A. Bros.* Henbane, Hyoscyamus niger.—*E. R.* 1, Gentiana asclepiadea; 2, Æthusa Cynapium.—*J. Trotman.* Onoclea sensibilis, native of North America.—*C. W. D.* Saxifraga Aizoides.—*W. P.* 1, Lastrea trichodes; 2, Ornithogalum longibracteatum; 3, Croton variegatus; 4, C. irregularis; 5, C. Johannis; 6, Dracæna marginata.

New Potato: *Middlesex.* A letter sent to Mr. A. F. Barron, Superintendent of the Royal Horticultural Society's Garden, Chiswick, would elicit from him the desired information.

Poppies and Droseras: *A Lover of the Gardeners' Chronicle.* Sow now, and thin out, leaving the plants at 1¼ foot apart. The Droseras, or Sundews, do entangle flies and other small insects by means of the viscid-tipped hairs of the leaves, and hold them fast, first by the viscous juice, and afterwards by the hairs themselves, which bend over them until decay sets in. The substance of the insect is dissolved by a ferment secreted by the hairs and the solution absorbed by the plant.

Reports of the Royal Horticultural Society: *Dresden.* Apply to the Secretary, 117, Victoria Street, London, S.W.

Road Scraper: *S. K.* The "Phœnix" is a cultivator for hand or pony use, and may be fitted with a series of hoes. We do not know the sellers.

Insects: *J. S.* The caterpillar causing such destruction to the leaves of the Rhamnus and Lime is that of the Brindled Beauty moth, Biston hirtarius (fig. 23). The caterpillar, having stripped the tree, buries itself in the ground, and changes

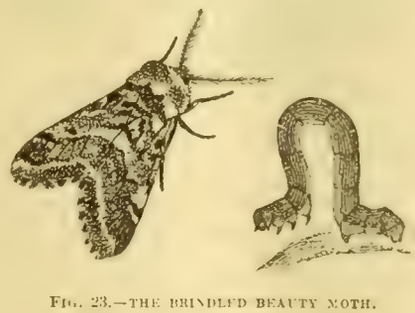


Fig. 23.—The brindled beauty moth.

to a chrysalis, reappearing in the moth stage the following spring. It is particularly common in the London squares. On the leaves the caterpillar is of a greenish colour, while on the bark it is smoky-brown, assimilating in colour to the surface on which it is placed, and thus escaping observation. The caterpillars sent were considerably larger than the one here illustrated.

Slug: *A. D.* Kindly send specimen for identification.

Tomato: *D. L.* When Tomatos get diseased, there is nothing more to be done than with a Potato in the same case. Root them up, and put the house to other uses.

Zygopetalum and Cœlogyne: *Dresden.* We will ask the correspondents you have named, but full cultural directions will be found in the manuals named.

CATALOGUES RECEIVED.

Alf. Van Imschoot, Arrière Rue Mont St. Amand, Ghent—Orchids.

J. E. Barnes, Great Eastern Seed Stores, 9, Exchange Court, Norwich—Seeds.

John Downie, 144, Princes Street, Edinburgh—Dutch Flower Roots.

Alfred Legerton, 5, Aldgate, London, E.—Dutch and other Flower Roots, Wholesale.

L. Späth, Rixdorf, near Berlin—Flower Roots.

Chas. MacBride, Commercial Nurseries, Jacksonville, Florida, U.S.A.—Fruit and other Trees, Shrubs, Roses, &c.

Armitage Brothers, High Street, Nottingham—Dutch Bulbs, &c.

Communications Received.—W. Mauchline.—I. J.—W. G. S.—Visitor.—F. W.—W. R.—W. H.—G. C.—H. M A. E.—N. E. B.—J. W.—J. O B.—R. W. M.—J. F. (next week).—S. H.—W. P.—J. C.—W. S. L.—J. G. B.—R. A. R.—J. C. & Co.—R. Fortune (too late).—W. H. D.—A. C.—P. L.—W. Howes.—R. G.—W. R.—K.—Canon E.—A. Y.—G. H.—W. J. H.—R. A. R.—F. J. D.—J. B.—J. G. L., California.—B. D. J.—H. E. M.—W. S.—H. G.

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Price:— 7 lb. 2*s.* | 14 lb. 3*s.* 6*d.* | 28 lb. 5*s.* 6*d.* | 56 lb. 9*s.* | 1 cwt. 14*s.*

And in 6*d.* and 1*s.* packets.

To be had of Seedsmen and Florists, or the NORMAL MANURE COMPANY, Ltd., 121, Bishopsgate Street Within, E.C., and Farnham Road, Guildford. Usual Trade Discounts. Wholesale of Messrs. HURST AND SON, 152, Houndsditch, London

For Green and Black Fly, American Blight, Camellia Scale, Red Spider, Mealy Bug, Brown and White Scale, Worms, Wood Lice, &c.

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SAFE—ECONOMICAL—EFFECTUAL.

15, Princes Street, Edinburgh, *July* 15, 1887.—"Dear Sirs, I have thoroughly tested a sample of a new Insecticide which you were so good to send me. At the rate of 1 oz. to a gallon of water at a temperature of 95°, I find it kills Green Fly immediately. Double this strength, or 2 oz. to a gallon at 120°, seals the fate of Scale of all sorts in a few seconds; while 3 oz. to gallon at same temperature effectually dissolves Mealy Bug, and so far as I have yet observed, without the slightest injury to leaf or flower, and it is withal a most agreeable compound to work with. All our insect remedies are applied through common syringe, or garden engine, a much severer test of efficiency than when applied by hand-washing or spray.—I remain, dear sirs, yours truly. (Signed) A. MACKENZIE," of Messrs. Methven & Sons.

Victoria and Paradise Nurseries, Upper Holloway, London, *January* 7, 1888. "Gentlemen—I have given your Insecticide, 'Picrena,' a good trial in competition with many others. I am pleased to say that I have found it to be more effectual in destroying Mealy Bug and other insects than anything we have ever used. It ought to command a good sale. (Signed) B. S. WILLIAMS."

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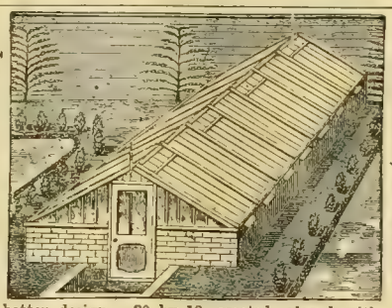
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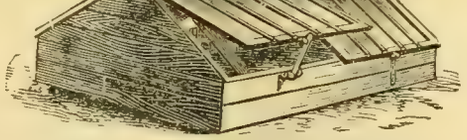
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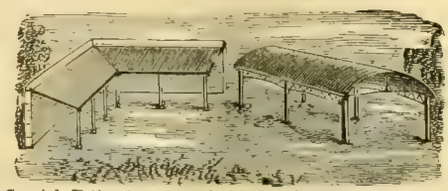
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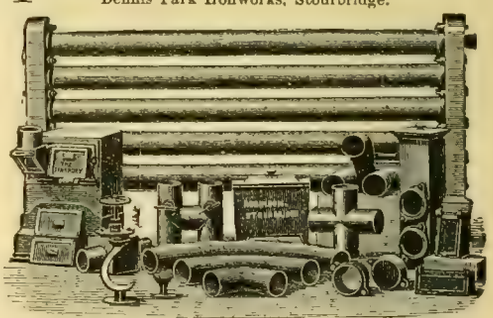
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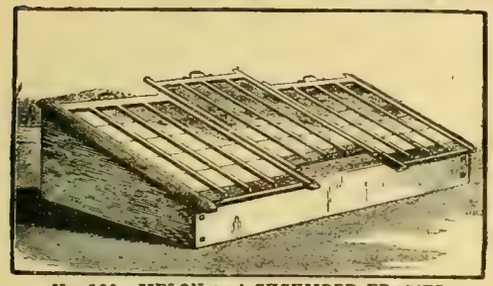
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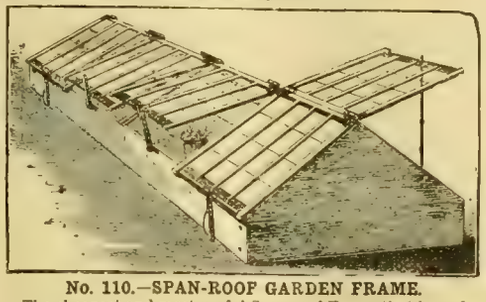
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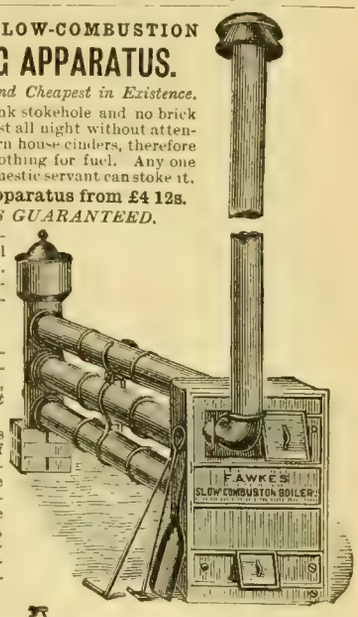
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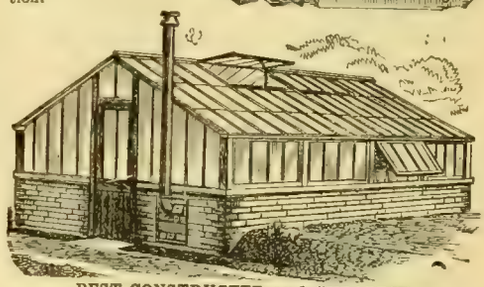
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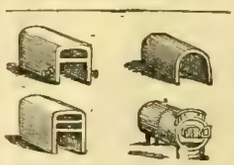
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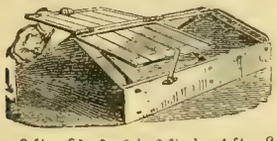
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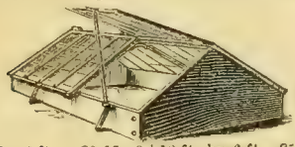
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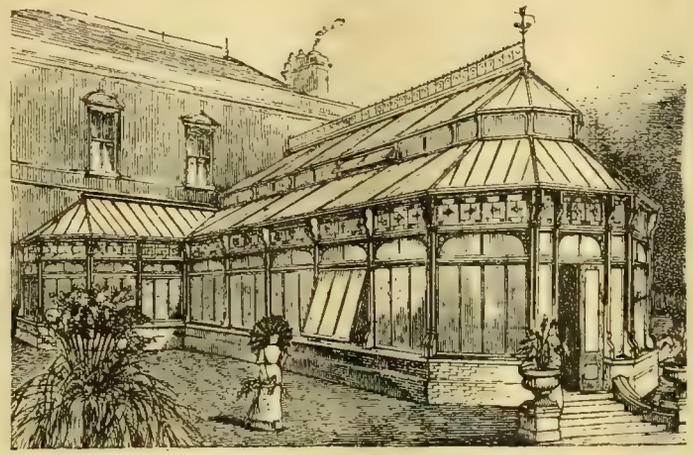


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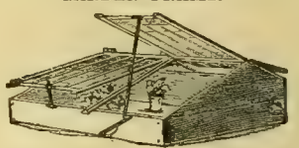
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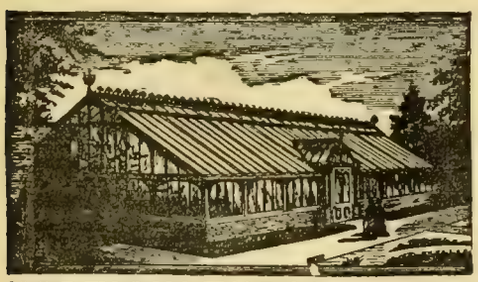
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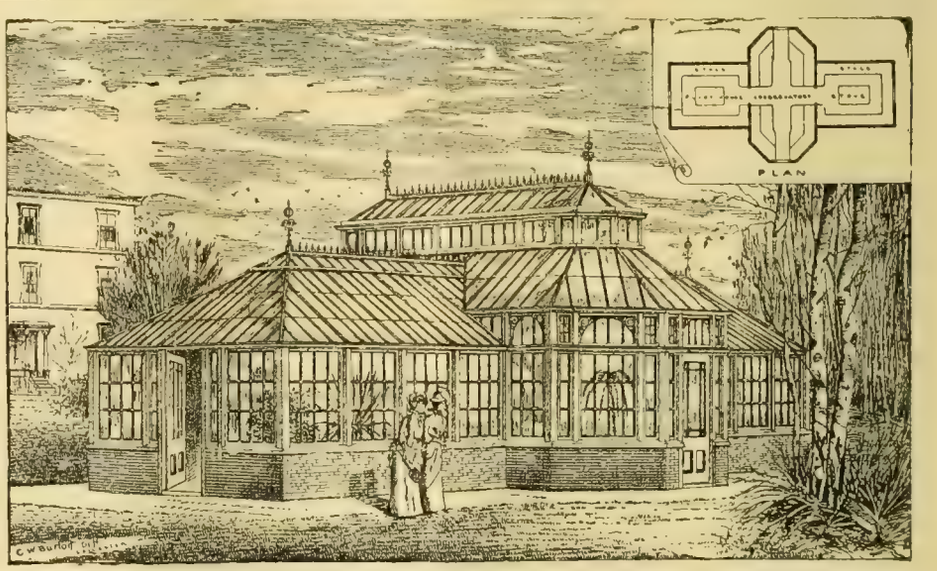
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Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position be guaranteed for advertisements occupying less space than an entire column.

THE GARDENERS' CHRONICLE IN AMERICA.

The Subscription to America, including Postage, is $4.30 for Twelve Months.

Agent for America:—E. H. LIBBY, Manager, "The American Garden," 10, Spruce Street, New York, to whom American Orders may be sent.

MAIDENHEAD HORTICULTURAL SOCIETY.

The ANNUAL SHOW of this SOCIETY will be held in the Grounds of Curtisfield, Maidenhead, on THURSDAY, August 14, 1890. Entries close on August 7. Schedules and particulars from O. KING, Sec., Ray Park Cottage, Maidenhead.

SHREWSBURY GREAT FLORAL FÊTE, AUGUST 20 and 21, 1890.—For 20 PLANTS, £25, £20, £15. Collection of FRUIT, £10, £5, £3. For GRAPES, £60. Valuable SPECIAL PRIZES given by Messrs. Webb & Sons, Messrs. Sutton & Sons, Messrs. Carter & Co., Messrs. Wm. Wood & Son, and Mr. H. Deverill. Schedules now ready, post-free on application to

Messrs. ADNITT AND NAUNTON, Hon. Secs.
The Square, Shrewsbury.

NEWCASTLE-ON-TYNE GREAT AUTUMN SHOW, AUGUST 20, 21, and 22, 1890. Entries close Wednesday, August 13. For Schedules, &c., apply, JAS. I. GILLESPIE, Sec., Cross House Chambers.

WARWICKSHIRE AGRICULTURAL SOCIETY.

A GRAND HORTICULTURAL EXHIBITION
in connection with above will be held in
The JEPHSON GARDENS, LEAMINGTON SPA,
On TUESDAY and WEDNESDAY, September 2 and 3, 1890.
Prizes amounting to ONE HUNDRED AND TWENTY POUNDS.

Entries close on August 20. Schedules and Entry Forms from H. J. SARNEY, Secretary,
51, Regent Street, Leamington.

SUTTON'S FLOWER SEEDS for SUMMER and AUTUMN SOWING.

SUTTON'S PRIZE MIXED BEGONIA, per packet, 5s. and 2s. 6d., post-free. SUTTON'S SPRING BEDDING STOCKS.—A dwarf, free-flowering strain, especially adapted for making a brilliant display during the months of May and June. Six varieties, separate, 3s. 6d. Mixed, per packet, 1s. SUTTON'S HARDY ANNUALS and PERENNIALS.—Full particulars on application.

All Flower Seeds delivered free by post.

SUTTON'S SEEDS Genuine only Direct from SUTTON AND SONS, The Queen's Seedsmen, Reading. No agents.

TO OFFER, AMPELOPSIS VEITCHI, in 5-inch pots, good strong stuff, 6s. per dozen, 40s. per 100; a few extra large, 8s. per doz. Old Double White PRIMULA, in 3-inch pots, 25s. per 100, strong stuff; Statice, Blue greenhouse variety, strong stuff, in 5-inch pots, 6s. per dozen.

C. JOHNSON AND CO., Tangley Park Nurseries, Hampton-on-Thames.

TUBEROUS BEGONIAS.—We were awarded all the First Prizes (seven) in the open classes for Begonias, at the Royal Aquarium Show, on July 29 and 30, as follows:—For group 200 square feet, 12 Doubles, 12 Singles, 6 Whites, 6 Yellows, 6 Rose or Pink, 6 Scarlet or Crimson. This being evidence of quality.

JOHN LAING AND SONS, The Nurseries, Forest Hill, S.E.

BULBS and FLOWER ROOTS. The cheapest offer of first-rate Bulbs in the Trade. Prices but little over auctions. Quality unsurpassed. See testimonials. Every article grown by a specialist. Early importations now to hand. CATALOGUES on application.

J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

Dutch Bulbs.

CHARLES SHARPE AND CO.'S Wholesale CATALOGUE of Dutch and other Flower Roots, is now ready. It has been Posted to their Customers, and will be sent post-free to any address on application.

Before ordering, write for List and compare prices.
Seed Warehouse, Sleaford.—July, 1890.

STRAWBERRIES.—A fine Collection of the best varieties can be supplied. Orders should be booked now. Descriptive CATALOGUE post-free.

THOMAS RIVERS AND SONS, Sawbridgeworth.

JOHN JAMES, 7, Flower Market, Covent Garden, W.C., receives on Commission, GRAPES, TOMATOS, and other choice FRUITS and FLOWERS. Reference: London and County Bank. Highest Market Prices. Account Sales daily. Cheques weekly. Baskets, Boxes, and Labels found.

Warehouse: 19, Russell Court, W.C.

GROWERS of RUBBERS, PALMS, Hardy FERNS, Variegated EUONYMUS, ASPIDISTRA, &c., wishing to clear stock, should address, FORBES, 35, Hart Street, Covent Garden, W.C. Ready cash for all transactions.

J. W. BARNHAM Receives on Commission, GRAPES, TOMATOS, and other Choice FRUITS; also FLOWERS. His personal attention securing highest Market Prices. Account Sales daily, and cheques at option. Baskets and labels found.

Long Market, Covent Garden, W.C.

CHOICE FLOWERS—CHOICE FRUIT.—Highest Market Prices guaranteed. Prompt cash.

HENRY RIDES, Covent Garden, W.C.

HENRY SQUELCH, North Row, Covent Garden, FRUIT SALESMAN and COMMISSION AGENT, Importer of Bananas, and all kinds of Madeira and Canary Island Produce.

H. SQUELCH is open to RECEIVE CONSIGNMENTS of CHOICE BLACK GRAPES, MUSCATS, TOMATOS, CUCUMBERS, PEACHES, and all kinds of Hothouse Produce.

H. SQUELCH'S connection is amongst the best business houses in the United Kingdom, and he gives personal attention to all consignments. Account of Sales forwarded day of Sale. Cheques weekly, or as desired. Empties and Labels supplied. Bankers, London and County Bank. Warehouses and Banana House, James Street, Covent Garden, W.C.

Geranium Cuttings.

WANTED, several thousand JACOBY, POLLOCKS, and BRONZE. Send price for cash.

D. ANDERSON Teddington.

For Present Sowing.

CABBAGE.—CARTERS' HEARTWELL MARROW, acknowledged to be the finest early Cabbage in cultivation, price 1s. 6d. per oz., 6d. and 1s. per packet, post-free.

CARTERS' MAMMOTH BEEFHEART, the best main crop Cabbage, price 1s. 6d. per oz., 6d. and 1s. per packet, post-free.

For Present Sowing.

LETTUCE.—CARTERS' GIANT WHITE COS, price 2s. 6d. per oz., 1s. per packet, post-free.

DUNNETT'S GIANT WINTER COS, price 2s. 6d. per oz., 1s. per packet, post-free.

ALL THE YEAR ROUND, price 1s. 3d. per oz., 6d. per packet, post-free.

For Present Sowing.

ONION.—CARTERS' GOLDEN GLOBE TRIPOLI, price 1s. and 2s. 6d. per packet, post-free.

CARTERS' GIANT WHITE TRIPOLI, price 1s. per oz., 6d. per packet, post-free.

CARTERS' WHITE EMPEROR, price 1s. and 2s. 6d. per packet, post-free.

CARTERS, Royal Seedsmen by Sealed Warrants, 237 and 238, HIGH HOLBORN, LONDON.

PALM SEEDS.—Cocos Weddeliana, Kentias, Areca lutescens, and Bacularia monostachya, 5s. per 100, cash, post-free.—F. ROSS, Bletchingley, Red Hill, Surrey.

CUT MAIDENHAIR FERN all the year round. Present price, 100 fronds for 1s. 3d., Post-free, for cash. Special quotations for large quantities.

TAYLOR AND CO., Timperley, Cheshire.

BULBS FOR AUTUMN-FLOWERING.—Summer Planting LIST, now ready, of rare Crocus species, for autumn and spring-flowering, beautiful and rare Colchicums, Sternbergia (Lily of the Field), Zephyranthes (Flowers of the West Wind), Pyrethrums for autumn planting, &c. LIST free on application.

BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

FLORAL ALBUM of CONFERENCE DAFFODILS.—This unique "Work of Art," illustrated by GERTRUDE HARTLAND, has now become a regular Drawing-room Book. First Edition limited to One Thousand Copies. Post-free, 2s. 6d. "Key" to same for 1890, descriptive and priced, *post-free to all applicants.* Bulbs very moderate in price, and of fine quality.

WM. BAYLOR HARTLAND, Seedsman, Cork.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to—

Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.

N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high, 15s. to £10 per 100, free on rail.

J. J. CLARK, Goldstone Farm, Brighton.

The Best Present for a Gardener.

VINES and VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published.

New Edition.
Price 5s., post-free 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

LOVEL'S Yorkshire STRAWBERRIES.—Strong, healthy, and well-rooted Runners, to fruit next season. Thury, Paxton, President, Noble, and other good varieties. Full Descriptive Price LIST with Testimonials free. Sample Parcel, 3d.—W. LOVEL AND SON, Driffield.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.

WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Lee, Kent.—Important to the Trade.

Absolute CLEARANCE SALE of GREENHOUSE PLANTS, FERNS, ORCHIDS, UTENSILS, and effects. By order of the Executors of the late Mr. H. J. R. Wright.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Wright's Nursery, Turner Road, Lee, on THURSDAY NEXT, August 14, at 12 o'Clock precisely, in consequence of the number of lots, the whole of the immense stock of GREENHOUSE PLANTS and FERNS, being the contents of 40 Greenhouses and Pits, and comprising 25,000 Ferns, of sorts; 1500 Odontoglossum Alexandræ, established plants; 40 specimen Cœlogyne cristata, 5000 Fuchsias, 5000 Pelargoniums, including many fine specimens for cutting from; 1000 Selaginella Martensii, 100 fine Azalea indica alba and Fielder's White Camellias, 1000 Grevillea robusta, 2000 Chrysanthemums, good plants; 5000 Solanums, Ericas, and Epacris; also the UTENSILS in Trade, capital spring Market VAN, Dog CART, Office FURNITURE, contents of Painter's Shop, and other effects.

May be viewed two days prior to the Sale. Catalogues may be obtained on the Premises, of Messrs. NEWTON AND NEWTON, Solicitors, 180, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N B. The old-established long Leasehold NURSERY will be offered on the Premises, prior to the Sale of the Stock.

Friday Next.—Established Orchids.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 15, at half-past 12 o'Clock, a selection of about 100 lots of choice ESTABLISHED ORCHIDS, from a well-known private collection, including Cattleya Wagneri, C. labiata (autumn-flowering), Lælia elegans alba, L. anceps Dawsoni, Cymbidium Philbrickianum, Lycaste Skinneri alba, Dendrobium Leechianum, D. nobile nobilius and Cooksoni, Cypripedium leucorhodum, C. Leeanum superbum, Masdevallia melanoxantha, and others.

Also about 150 Lots of various ESTABLISHED ORCHIDS from Messrs. Seeger & Tropp, and a few fine plants of the noble and extremely rare ANSELLIA GIGANTEA.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will include in their ORCHID SALE on FRIDAY NEXT, by order of Messrs. Seeger & Tropp, the new rare and beautiful MASDEVALLIA SCHRODERIANA, of which a limited number of plants only exist, and which was awarded a First-class Certificate by the Royal Horticultural Society on July 8, 1890. It was described in *The Garden* of July 12 last, as follows:—"This is an attractive flower, the plant having several blooms which are of a purplish-rose colour in the upper portion, the lower half white, broadly margined with the same shade, while the long tails of the sepals are greenish-yellow. It is certainly a Masdevallia for every good collection."

Also will be offered at the same time, the rare MASDEVALLIA CHESTERTONI, and a splendid lot of newly imported L.ELIA MAJALIS, together with the robust growing ANGRÆCUM EBURNEUM SUPERBUM.

On view morning of Sale, and Catalogues had.

Friday Next.

ANSELLIA GIGANTEA, a noble and extremely rare species, of stout habit and free growth, bearing rich heads of large clear yellow flowers, sometimes having purple spots. The plants offered are in fine condition. Also a few fine masses of a new dwarf-growing form of ANSELLIA AFRICANA, from Eastern Africa. The plant has pseudo-bulbs about 1 foot in height, and heads of yellow and crimson flowers, larger than the old form, and often sixty on a spike all open together. The masses have many starting growths.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE of ORCHIDS on FRIDAY NEXT, August 15.

On view morning of Sale, and Catalogues had.

Friday Next.

650 LÆLIA AUTUMNALIS.

BURMESE ORCHIDS on Sale, without reserve.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT

About 100 lots of VARIOUS DENDROBIUMS and other ORCHIDS from Burmah.

Also an importation of 650 L.ELIA AUTUMNALIS, just received in splendid condition; sent home by Mr. Pechacek, who writes that the whole were collected in the same district as the rare and lovely Lælia autumnalis alba, and some of the masses were taken from the same trees where the white variety was found.

The whole for Sale absolutely without reserve.

On view morning of Sale, and Catalogues had.

Monday, August 18.

DUTCH BULBS.—SPECIAL TRADE SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY, August 18, THURSDAY, August 21, MONDAY, August 25, and THURSDAY, August 28, at half-past 11 o'Clock, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, received direct for Unreserved Sale.

These Early Auctions have been specially arranged in Lots to suit the Trade and other Large Buyers.

The Auctioneers are now preparing their permanent Lists for the coming season, and will be pleased to enter the Names of intending Purchasers who may desire a regular supply of Catalogues for these Sales.

Auction Rooms and Offices, 67 and 68, Cheapside, London, E.C.

Bow, E.

EXPIRATION of LEASE. CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Culley to SELL by AUCTION on the Premises, The Nursery, Eleanor Street, Campbell Road, Bow, E. (near the Bow Station), on TUESDAY, August 19, at 1 o'Clock, without reserve, the erections of 10 GREENHOUSES, several with Lights; 700 feet of Hotwater-piping, 3 Boilers, Brickwork, 45 two and three light Boxes, useful Timber, Flower-pots, Sheets of Corrugated Iron, and other effects.

On view day prior and morning of Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

Acton, W.

STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by the owner, who is leaving the neighbourhood, to SELL by AUCTION on the Premises, Edendale, Creswick Road, Springfield Park, Acton (ten minutes from Acton Station), on WEDNESDAY, August 20, at 1 o'Clock, the whole of the well-grown STOVE and GREENHOUSE PLANTS, large Fuchsias, Eucharis, Specimen Camellias and Azaleas, Crotons, Palms, Ferns, and other Plants, with sundry effects.

On view day prior, and morning of Sale. Catalogues had of the GARDENER on the premises, and of the auctioneers, 67 and 68, Cheapside, London, E.C.

Hornsey, N.

Expiration of Lease. Absolute clearance.

Sale entirely without reserve.

MESSRS. PROTHEROE AND MORRIS, are instructed by Mr. J. Page to SELL by AUCTION on the premises, the Hornsey Nursery, Hornsey, N., near Hornsey Station, on THURSDAY, August 21, at 12 o'clock, the erections of 18 GREENHOUSES containing a superficial area of about 17,000 feet of glass and woodwork, slate, and other staging, 4,000 feet of hot-water piping, mostly 4-inch, 3 boilers, 100,000 sound Bricks, a quantity of movable lights, and other effects.

May be viewed one week prior to sale. Catalogues had on the premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Sunningdale.—Preliminary Notice.

Without the least reserve.

SIX DAYS' ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. C. Noble, who is under notice to quit all lands held by him under St. John's College, Cambridge, at Christmas next.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, on MONDAY, October 6, and five following days, without reserve, several acres of unusually well-grown NURSERY STOCK, carefully prepared for removal.

Fuller announcements will appear in due course.

Thursday Next.

SPECIAL SALE of ORCHIDS in FLOWER and BUD.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 14, at half-past 12 o'Clock precisely, a fine COLLECTION of ORCHIDS in Flower and Bud, including choice forms of Cattleya Gaskelliana, Odontoglossum crispum, O. Harryanum, Dendrobium formosum giganteum, Cypripediums, Masdevallias, &c.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.—Dutch Bulbs.

MR. J. C. STEVENS begs to announce that his SALES of DUTCH BULBS for the coming season will commence about the THIRD WEEK in the PRESENT MONTH, and will take place every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'Clock precisely. The SALES will include choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, and other BULBS, from some of the best known farms in Holland, and lotted specially to suit the Trade and other Large Buyers. Also Early White Roman HYACINTHS, Paper White and Double Roman NARCISSUS for Forcing, &c.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Thursday, August 14.

SALE of a fine COLLECTION of ESTABLISHED ORCHIDS, many being in Flower.

MESSRS. POPE AND SONS have received instructions from Messrs. Hugh Low & Co., of Clapton, London, to SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY, August 14, at half-past 12 o'Clock precisely, 200 lots of healthy well-grown established ORCHIDS, some having not yet flowered in this country, including Odontoglossums (various), Oncidiums, Cypripediums (very choice varieties, and rare hybrids), Cattleyas, Dendrobiums, Phalænopsis, and many others.

There will also be included in this Sale about 150 lots in Flower, from a few well-known collections.

Messrs. POPE AND SONS will be happy to make careful Selections and Purchase any lots for Gentlemen who cannot attend the Sale. No commission being charged.

On view morning of Sale, and Catalogues had.

Thursday, August 21.

1000 PLANTS of AZALEA INDICA.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY, August 21, at half past 11 o'clock, A.M., 1,000 bushy plants of AZALEA INDICA, half of which will be the beautiful white Deutsche Perle, for sale without reserve.

On view morning of Sale, and Catalogues had.

Thursday, August 21.

20,000 WHITE ROMAN HYACINTHS.

MESSRS. POPE AND SONS will include in their SALE, on THURSDAY, August 21, 20,000 White Roman HYACINTHS, received direct for sale without reserve.

On view morning of Sale, and Catalogues had.

POPE AND SONS, Horticultural Auctioneers and Valuers, 6, Phillips Street, Birmingham.

Thursday, August 21.

DUTCH BULBS.—UNRESERVED SALES.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY, August 21, at half-past 11 A.M., and every THURSDAY throughout the season, large consignments of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland (first quality only), lotted to suit the Trade and other Buyers. To be Sold without the least reserve. Those who are unable to attend the Sales can have purchases carefully made by us, no commission being charged.

Catalogues sent on receipt of post-card.

Cut Flowers, Plants, and Bulbs.

We hold Sales, several each week. Reference to senders of years standing. Particulars on application.

MESSRS. POPE AND SONS, Sale Rooms, 6, Phillips Street, adjoining Market Hall, Birmingham.

WANTED TO RENT on Lease, or arrange to Purchase, about an acre of LAND with Glass, also good Dwelling-house.

Address, FLORIST, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand.

FOR IMMEDIATE DISPOSAL, a MARKET GARDEN and FLORIST BUSINESS, close to Bournemouth. Long lease. Rare opportunity for energetic man with capital.—Particulars of J. CHITTY AND SON, Portland Cottage, Parkstone, Dorset.

London, W.

To Small Capitalists. No Stock. Good Neighbourhood.

COMPACT NURSERY. — Several Greenhouses, Dwelling-house. Rent only £15. Price for Glass on application. Any reasonable offer entertained.

Apply to PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

OLD-ESTABLISHED NURSERY, FLORIST, and JOBBING BUSINESS. Shop in main road. Good Nursery. Best position in St. John's Wood. Incoming about £300; part can remain to an immediate purchaser.

Apply, 18, Finchley Road, St. John's Wood, N.W.; or, Messrs. GOWING AND CO., Solicitors, 41, Finsbury Pavement, E.C.

London (15 Miles from).

TO BE LET, on Lease, well-known NURSERY, 3 acres; 18 Vineries, Peach, Cucumber, and Tomato Houses; 9-roomed Dwelling House, Stable, and Trade Buildings. Rent, £200. Price for crops and stock, £600.

Full particulars of Messrs. PROTHEROE AND MORRIS, Horticultural Auctioneers, 67 and 68, Cheapside, London, E.C.

TO BE LET, NURSERY GROUND, in the Northern district, about 4 miles from Charing Cross. About 2 acres in extent. Convenient Dwelling-house and Shop. Frontage to a main road.—Apply to T. BARNES-WILLIAMS, 11, Clements Lane, Lombard Street, E.C.

TO LET, a well-established NURSERY, about 12 acres in extent, well stocked and in fine condition, situated near a large city.—Full particulars on application to A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE LET, on the Duke of Manchester's Estate, Huntingdonshire, several clean convenient FARMS, of from 200 to 600 Acres, in excellent condition (for several years in the occupation of the late Duke). Capital Farm-houses and suitable buildings, all in thorough repair. For particulars, apply to

Mr. B. DAVIES-COOKE, Estate Office, Kimbolton Castle, St. Neots; or to Messrs. BOXALL AND BOXALL, Solicitors, 22, Chancery Lane, London.

TO BE LET, 1 to 10 acres of GRASS LAND, suitable for Nurserymen and others, on Lease for 7, 14, or 21 years. Rent from £8 to £12 per acre, with the option of purchasing the Freehold within the first seven years. No tithe. Near the main road, Enfield Highway, about nine miles from London.

Apply, H. MOORE, 59, Bishopsgate Street Within, E.C.

Dover.

TO BE LET, the ASHEN TREE NURSERY, with good Residence, near to the sea front. Five large Plant and Propagating Houses, all in good condition, and about half an acre of Ground. Good connection. Incoming about £100; rent moderate.—Apply to Messrs. WORSFOLD AND HAYWARD, Auctioneers and Agents, Market Square, Dover.

DAILY PARCELS EXPRESS SERVICE to the CONTINENT, *vid* Queenborough, Flushing, Kaldenkirchen.

This Parcels Service, in direct connection with the German and Austro-Hungarian Posts, is specially adapted for the rapid and regular despatch of Plants, Bulbs, &c. No Certificate required for Germany. Tariffs free on application. Goods also accepted for Conveyance by *Petite and Grande Vitesse*.

BEST, RYLEY AND CO., 88, Bishopsgate Street, London, E.C.

Receiving Office at Holborn Viaduct Station.

SEAFORTHIA ELEGANS for sale, 18 feet high, growing in cool house, and in good healthy condition.—H. WILKS, Sandon, Stone, Staffordshire.

ASPIDISTRA LURIDA, green and variegated. As they stand. From 30 guineas, 40 guineas, to 60 guineas per 100.

ADIANTUM CUNEATUM, smart stuff, bright and hard, 48's, 3 guineas per 100.

ARAUCARIA EXCELSIA, 3 guineas per dozen.

W. HOWARD, Southgate, N.

STRAWBERRIES.—Good strong Plants for fruiting next season, of Laxton's Noble, Sir Joseph Paxton, James Veitch, &c., 5*s*. 6*d*. per 100.

BRINKWORTH AND SONS, Growers, Reading.

GARDENERS' ORPHAN FUND.

PROPOSED MEMORIAL TO THE LATE MR. GEORGE DEAL.

AT THE ANNUAL GENERAL MEETING of the supporters of this Institution, held at the Cannon Street Hotel, on Friday, July 18, it was unanimously resolved to specially commemorate the services rendered to the Fund by the late chairman of the Executive Committee, by granting the benefits of the Fund to the seven orphan children who had that day failed to secure election.

To enable the Committee to put these seven children on the Fund, the sum of £598 is required; and the chairman, Mr. Sherwood, on behalf of Mr. Harry J. Veitch and himself, made the munificent offer that, if a minimum sum of £250 was raised among the subscribers, they would jointly undertake to provide the remainder.

At the Annual Dinner, the chairman, Mr. Shirley Hibberd, strongly urged that the most generous offer of Mr. Sherwood and Mr. Veitch should be promptly and heartily acknowledged by a special effort to raise the sum required in order to pay a graceful tribute to the memory of their late friend.

The appeal thus made was readily responded to, among other subscriptions announced being:—

	£	s.	d.
Sir JULIAN GOLDSMID, Bart., M.P.	10	10	0
Messrs. J. WEEKS & CO.	50	0	0
Baron SCHRODER	10	10	0
A. H. SMEE, Esq.	10	10	0
P. CROWLEY, Esq.	10	10	0
Messrs. LAING & SONS...	10	10	0
J. WILLS, Esq.	10	10	0
J. SHIRLEY HIBBERD, Esq.	10	0	0
T. MANNING, Esq.	10	10	0
G. W. BAKER, Esq.	10	10	0
H. M. POLLETT, Esq.	5	5	0
M. C. MITCHELL, Esq.	5	5	0
H. J. PEARSON, Esq.	5	0	0
WM. BULL, Esq....	5	5	0
Dr. MASTERS, F.R.S.	3	3	0
Mr. F. C. BAUSE...	3	3	0
Mr. G. PAUL	2	2	0
Mr. H. HERBST	2	2	0
Mr. H. TURNER	2	2	0
Mr. F. Q. LANE	2	2	0
Mr. G. BUNYARD	2	2	0
Messrs. J. & J. ROCHFORD	2	2	0
W. H. THOMAS, Esq.	2	2	0
Mr. T. A. DICKSON	1	1	0
B. HARDY, Esq.	1	1	0
Mr. J. WEEKES	1	1	0
Mr. J. ASSBEE	1	1	0
Mr. G. MONRO	1	1	0
Mr. PETER KAY	1	1	0
Mr. J. WALKER	1	1	0
Mr. W. G. GREGORY	1	1	0
Mr. A. McKENZIE	1	1	0
Messrs. FEATHERBY AND SON	1	1	0
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Mr. T. ROCHFORD	1	1	0
W. FURZE, Esq.	1	1	0
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The Committee acknowledge with gratitude the hearty manner in which the proposition to found a "George Deal Memorial" has been received, and heartily appeal to the many whom the Committee feel there are who would like to subscribe to this tribute of respect to the memory of Mr. Deal, to send their contributions at once to the Honorary Secretary,

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THE
Gardeners' Chronicle.

SATURDAY, AUGUST 9, 1890.

NAWORTH CASTLE.

THERE is no part of England richer in historic memories than the Scottish borders which the ancestors of the present owners of Naworth Castle had so large a share in converting from barbarism to good order. Not much will be said here about the rudeness of this part of Cumberland in the olden time. It has been alleged sometimes that Nature is superior to art, but I venture to affirm that the Romans, who first let light into the northern jungle when they drove their road past the present site of Naworth Castle, were really performing a task in landscape gardening which greatly improved the aspect of the country. The castle itself, probably, never looked worse than in the feudal ages which saw the upraising of its Dacre Tower, ere the gloomy woods around had been very much reduced, nor better than it does now, with its modern gardens and bright parterres, in the midst of a landscape interspersed with hospitable homesteads and profitable farms, where butter and beef abound, and the famous blue-grey cattle of the borders are produced on a thousand breeding farms.

Still, in writing a sketch of any famous residence, the antiquity and lustre of the family who own it cannot be ignored, since the echoes of the past are pleasing to most minds, and historic associations impart to old houses a life and soul which do not exist in their bricks and mortar, not even in their modern gardening.

The railway from Carlisle to Newcastle sets the traveller down at 12 miles from the former place, within a mile of the castle, which he will find in a park well wooded, well watered, and unlevel, a little off the main road. This is a country of hills and dales, and of loftier moorland at no great distance. The castle is not on a hill; in fact, you descend in approaching it from the park gates till you approach the famous Oak near the entrance, on which Lord William Howard, the Lord Warden, hanged many a delinquent moss-trooper or other rascal, who was strung up when caught, as a matter of course.

Mounting the parapets by favour of the Earl of Carlisle, who is most liberal in allowing the public to see his favourite place of residence, you find from speering into the yawning depths below that the castle is isolated on three sides, and owed its strength to the deep rocky gorges of two streams that meet beneath its walls and fall into the Irthing within a mile. A moat which now forms the terrace of the garden connects these gorges, and, with the drawbridge, completed the strength of the site. When Ranulph Dacre abandoned the baronial house at Irthington, 3 miles down the river from here—a residence called Castle Stead, which the lords of Gilsland had built as a place of strength within the fortifications of a Roman station—he found that others had appreciated the strength of the site; a "pele tower," or place of refuge for cattle and their owners and people, stood on the site of the present Dacre Tower, and, in fact, it still stands, since it was incorporated in the building. An earlier lord of this district was a Scotchman named Gill, who gave his name to the barony of Gilsland. He was followed by the family of de Vaux, who planted in this wild region the priory of Lanercost, with a church and dwelling for the canons in a fertile meadow on the banks of the Irthing, close to the spot where it receives the two streams from Naworth Castle. If you follow the deep and winding glen from Naworth through the park it will lead you to a broad expanse of grass land, called the Abbey Farm, now in the hands of a widow lady, and well stocked with choice cattle, and admirably farmed by her and her youthful son. The vicarage, old and grey, with a porch and pleasant garden, stands near the homestead of the farm, and in the same picturesque group of buildings are the ancient church and the ruins of the priory, where the founder and many of his successors were buried. Wooded hills surround this fertile site, where the churchmen planted here by Robert de Vaux set the example of industry and agriculture in a wild country.

We shall see that the blood of the excellent de Vaux family flows in the veins of the Howards. The line having ended in an heiress in 1240, she carried the barony into the family of the De Multons of Lincolnshire, who, in less than a hundred years, ended also in an heiress who married Ranulph Dacre of Greystoke, builder of the oldest part of Naworth Castle. The Dacres were a very prosperous race, especially Lord Thomas, who eloped with a rich heiress, won renown at Flodden Field, and built the stately hall, which all visitors to Naworth will remember for its mediæval decorations and specimens of armour and heraldic devices. Lord Thomas died and was buried in a splendid tomb in the Priory of Lanercost in 1525, and his grandson followed him in 1566, leaving an infant son and three daughters. Unhappily, the heir lost his little life in a rocking-horse accident, and then came the Howards with a rush and most judiciously married the three daughters. There was a little violence, no doubt, as often happened in such cases. This is how it came about. The widow of Thomas Dacre had become the third wife of Thomas Howard, Duke of Norfolk, and when she died shortly after, he married the three sisters, co-heiresses of the Dacre estates, to his three sons, the Earl of Arundel, Lord Howard of Walden, and Lord William Howard, the last-named amongst them becoming a bridegroom at the early age of fourteen, and the "Belted Will" of later days. The marriage of Lord William took place at Audley End, Essex, and it proved a happy one. The hero of the border country, bearing the name made familiar to us by Sir Walter Scott, was in reality an accomplished scholar and broad-minded statesman, and a noble type of the English gentleman living at home on his estates, and discharging the onerous duties which the condition of the district required from its leading man and wealthiest resident. In these days he would be characterised as an enlightened social reformer. We cannot do justice here to the great man who in fulfilment of his office as Lord Warden of the Marches first reduced the borders to "civilitie and quietness," but we must not omit to mention that he rendered Naworth fit for the residence of a great noble in an age of splendour. The last of the Dacres, Leonard Dacre, with "the crooked back" and the still more crooked mind, had lived at the castle, a scheming usurper. He fled the country at his overthrow, and left the fortress a ruin. Lord William left it a stately dwelling-house. His garrison at Naworth consisted of 140 men, and his soldiers, his office, and his energy made his name, says Fuller, a terror to the lawless, "who had two enemies—the laws of the land, and Lord William of Naworth." His early marriage has been mentioned. It took place when the united ages of himself and his bride made up less than twenty-eight years. But "Bauld Willie" (Bold Willie), as this excellent nobleman was sometimes called, and "Bessie with the braid apron," as his richly dowered wife was familiarly named, lived long and loved most truly. At one of their Christmas family gatherings at Naworth they found themselves scoring 140 years between them, and fifty-two sons and daughters and their husbands and wives and children.

Those curious heraldic relics in the great hall, which all who have seen them must remember, were brought to Naworth by Lord William, on the dismantling of Kirkoswald Castle, as were the oak ceilings and wainscot work of the ancient hall and chapel at that place. The life-sized figures in the great hall represent the Grimthorp Dolphin, erect on its tail—rampant in heraldry—the cognizance of Ralf de Greystoke; the Multon Stag; the sable Griffin of the De Vaux family, who succeeded Gill the Scot; and the Dacre Bull. We may be well assured that all the comestibles typified by these figures must have often smoked on the tables of the four great families, and we have happily reached an epoch of history when the owners of great estates have become sincerely anxious that fish, venison, and beef should more often appear on the humbler boards of poorer people.

The Countess of Carlisle takes an active part in various social movements for the benefit of the poorer residents on her husband's estates. Like Lord Tollemache she has discovered the advantage of cow-keeping by farm labourers, and those who are unable to purchase cows can hire them of the Countess on a plan introduced in various parts of the country by Mr. R. E. Turnbull, who is now the agent of the estate. I visited a couple quite young, but with six children nevertheless, and they assured me the milk proved invaluable in the rearing of their family. The cow was a beautiful little Kerry, worth, as a heifer last year when hired by them, £10, and now £12 10s. The milk had cost the family less than a 1*d.* per quart, and they had consumed the whole of it at home after removing the cream. The good wife is an excellent dairy woman—as every young woman in Cumberland must be if she wishes for a good husband—and the butter was well made and readily disposed of.

Returning to the castle. When Vanbrugh built Castle Howard, as the chief residence of the Earls of Carlisle, he adorned the hall at Naworth with a music gallery and a screen, and with that exception the castle remained much as Lord William Howard left it, till its restoration became necessary after the fire of 1844. The shell of the old building remained, and the Dacre Tower escaped. The rest was remodelled internally and rendered far more convenient, while the salient features of the old castle were retained. A new wing has since been added, and Naworth Castle, with its turrets and battlements as of old, has become a delightful country residence. The prevailing tree of the surrounding woods is, in the heavier land, the Oak, but the Beech abounds in the neighbourhood, especially where the rock of the new red sandstone comes to the surface. The scenery of the park is charming and an artificial lake sparkles in the sunshine in one of the enclosures. There is a good kitchen garden, and sufficient flowers and lawns to enliven the best rooms. In such a site a more extensive display would seem out of place, and unsuited to the mediæval architecture of the building. *H. E.*

New or Noteworthy Plants.

HIPPEASTRUM (HABRANTHUS) BRACHYANDRUM, *Baker*, "*Handb. Amaryll.*," *p.* 42.*

At the date of the publication of my *Handbook of Amaryllideæ*, I knew this only from a single dried specimen collected by Monsieur D. Parodi, on the banks of the Parana, in extra-tropical South America, in latitude 26° to 27° south. Now Mr. A. C. Bartholomew, of Reading, has introduced it in a living state, and we can see what the colour is like. It has much the largest flower of all the known species of the Habranthus section of Hippeastrum, and the colour is very beautiful, beginning as a pale pink, like that of Amaryllis blanda in the upper half, and ending as a deep blackish-red at the base of the segments and in the tube. I can only hope that Mr. Bartholomew will be able to keep it alive and perpetuate it, and that the Royal Horticultural Society will give it a First-class Certificate. Botanically it is remarkable in the genus for its very short stamens, which suggested the specific name. *J. G. Baker.*

Pelargonium saxifragoides,† *N. E. Br.* (*n. sp.*).

This is rather an interesting plant, although not a very showy one, for it belongs to the group of which the well-known "Ivy-leaved Geranium" is a member, and which contains but two distinct species according to Harvey's *Flora Capensis*; this, if a true species, is a third one, and is very distinct from either of the others. It was obtained for Kew by Mr. Watson, from the garden of the Royal Horticultural Society, Chiswick, without a name, and its origin is unknown, which leads me to think that it is not a hybrid, as in that case it would probably have received a name and be fairly well known, as it is

* *Hippeastrum* (*Habranthus*) *brachyandrum*, Baker, *Handb. Amaryll.*, p. 42.—Bulbo ovoideo magnitudine mediocris foliis linearibus ante anthesin evanidis; scapo pedali unifloro; spathæ valvis membranaceis laceratis; perianthi sub-erecto sursum pallide rubello deorsum atrorubro, tubo brevi cylindrico, segmentis oblanceolato-oblongis, 4 poll. longis; staminibus segmentis triplo brevioribus; stylo profunde trifido.

Bulb ovoid, above an inch in diameter. Leaves about three, linear, about a foot long, vanishing before the flower appears in July. Scape slender, sub-terete, one-flowered, a foot long. Spathe 2 inches long, splitting into linear valves. Pedicel erect, as long as the spathe. Perianth erecto-patent, pale pink in the upper half, passing into reddish-black at the base of the segments; tube short, cylindrical; limb funnel-shaped, measuring 3 inches at the tip when expanded; segments oblanceolate-oblong, 3½ to 4 inches long, an inch broad at the middle. Stamens not more than a third as long as the perianth-segments. Style deeply trifid. *J. G. Baker.*

† *Pelargonium saxifragoides*, N. E. Br. (n. sp.).—Plant dwarf, very compact, and much branched. Stem woody at the base, giving off very numerous, crowded, slender, glabrous branches. Leaves alternate, small, numerous, glabrous; petiole ½ to 1 inch long, terete, slender; blade ⅜ to ⅝ inch long, ⅜ to ¾ inch broad, somewhat reniform or fan-shaped in outline, acutely five-lobed from one-third to half-way down, subtruncate, cuneately rounded, or rounded and slightly notched at the base; very thick and fleshy, bright shining green without markings, or with a dusky mark at the base; stipules small, ovate, rigidly fleshy, very spreading and slightly recurved. Peduncles 2 to 4 inches long, slender, terete, glabrous, two to five-flowered. Bracts small, similar to the stipules. Pedicels 4 to 5 lines long, green and glabrous at the base, reddish-brown, and minutely pubescent in the upper half; adnate spur of dorsal sepal 1 line long, reddish-brown. Sepals all spreading, ¼ inch long, the dorsal one oblong-ovate acute, reddish-brown with the apex green, the others all narrower, linear-lanceolate acute, green, all minutely pubescent towards their tips, with a few longer hairs. Petals 4 to 5 lines long, the two upper ones cuneate-oblong obtuse, about 2 lines broad, recurving, bright pink with two dark purple-lake lines, and with or without a white central spot; the three lower ones narrower, spreading, bright pink, without markings, or whitish in their centre. Stamens rudimentary with abortive anthers, shorter than the densely white-tomentose ovary. Style and stigmas purple. *N. E. Brown.*

quite worth growing on account of its dwarf, compact habit, and dense, bright green, fleshy foliage. When out of flower, the plant forcibly calls to mind some of the Saxifrages, the form of the leaves being very similar to that of some species of Saxifraga, only much more fleshy. *N. E. Brown, Herbarium, Kew.*

THE TRADE IN FOREIGN NUTS.

Thirty years ago the writer published an article in these columns on the extent of the trade in edible Nuts, and it may be curious to trace the progress that has been made in our imports of these, in view of the increase of population and commerce. Nuts are rather an article of luxury than a food necessity, and are, therefore, unlike many other alimentary products, the imports of which have advanced with enormous strides in the last quarter of a century. The population in the United Kingdom has increased in the last thirty years, in round numbers, by 10,000,000, exclusive of the large influx of visitors to our shores.

The official Board of Trade returns have long since ceased to give the quantities of minor articles imported, and we have, therefore, only the values to fall back upon. Of Nuts used as fruit, the weight of Almonds alone is given. The imports of these, in the period under review, have increased from 44,000 cwt. to 129,736 cwt. last year. This is, however, a variable crop, for of late years the average amount imported has fluctuated from 75,000 to 100,000 cwt. The values of the different kinds received compare as follows:—

In 1861 the value of the Almonds received was £175,144; in 1889, £412,241; that of other Nuts used as fruit," in 1861, was £238,980, and in 1889, £589,189. As the Board of Trade does not separately enumerate the various Nuts, it is somewhat difficult to analyse the imports; but judging from the countries from whence they are received, the following may be deemed a fair average criterion, giving declared values and not quantities.

	1861.	1889.
	£	£
Almonds	175,144	412,241
Brazil-nuts	11,900	36,169
Cocoa-nuts	17,114	104,848
Filberts and Chestnuts	182,513	416,248
Walnuts	27,453	
North American Nuts	.....	27,380
	414,124	996,886
From foreign countries not specified	.....	4,544
		1,001,430

Judging by values the imports have doubled in the last thirty years—of Almonds, £173,991 in value were re-exported last year, and of other nuts used as fruit, £560,318, so that we paid £771,000 for the foreign Nuts consumed, exclusive of our own home supply of small Nuts and Walnuts.

The North American Nuts will most probably be the Hickory, Peccan, and other Nuts, while those from foreign countries, not specified, may include Pistachio-nuts, Butter-nuts, and a few other miscellaneous Nuts received in very small quantities. Cocoa-nuts can scarcely be considered as fruit Nuts, except among children and confectioners. The chief increase is in Hazel-nuts from Spain and Turkey; Chestnuts from France and Italy; Walnuts from France, Belgium, &c. *P. L. Simmonds.*

Sulphate of Copper Solution.—The last receipt for this mixture that we have come across is in the *Revue de l'Horticulture Belge.* Take sulphate of copper (3 kilos.)=6·603 lb.; warm water, 20 litres =say 4½ gal. Mix and dissolve. Take 2 kilos (say 4½ lb.) of lime and 4½ gal. of cold water. Mix the two solutions, and when required for use, add a hectolitre=22 gal. of cold water. The usual precautions must be followed—the liquids should be mixed in a wooden or earthenware vessel, and not allowed to come in contact with iron.

LINNÆA BOREALIS AND GOODYERA REPENS.

I send you a short note about two endemic Scotch plants, viz., Linnæa borealis and Goodyera repens. The Linnæa was a great favourite with the eminent founder of botany, and well it might be. Its graceful procumbent habit, accompanied with its pretty pink flowers, which are produced in trusses on an ascending slender peduncle, give it a charm beyond the intrinsic beauty of its foliage.

Perhaps a few remarks about how it grows in nature may be of use to connoisseurs who attempt to grow it artificially. I lately came across it in its native habitat. It seems to luxuriate in a moderately moist situation, with its roots embedded in peat and sphagnum. About one mile from the place where I refer to there is a small piece of it growing in similar soil; but the soil is dry, and in the latter place it does not seem to be growing so well, although it is healthy enough, and it is by far the best in the semi-damp position. I may add that both the places are in Scots Pine woods, and the rays of the sun are therefore partially subdued.

Goodyera repens grows in similar situations, but, unlike the Linnæa, it seems to grow best in a tolerably dry position. It also seems to demand a greater amount of shade, as all the finest examples of it that I have seen have been in half-shaded places. In the second edition of the *Student's Flora of the British Isles* (Sir J. D. Hooker), I notice it is mentioned as being "rare and local." It may be local, but rare it certainly is not. The plant is most abundant on the Seafield estates in Banffshire over an area of upwards of 100 square miles, but beyond that I could not say. I never saw it in any but Pine woods of sixty to 100 years of age. In young plantations it gets crowded out, and in the open moorland the sun seems to be too strong for it. In short, it seems to have a constitution similar to G. discolor and the Anæctochilus.

Both these plants are in flower at the present time, and many others of interest, some of which would be very suitable for rock gardens, although seldom used for that purpose. *An Old Subscriber.*

FERN NOMENCLATURE.

It is much to be regretted that the recent meeting of Fern specialists at Chiswick did not result in some organised discussion, with the object, not only of reforming the present varietal nomenclature, but also of deciding, if possible, upon the system of specific nomenclature to be adhered to. As matters stand, the raising of the question of reform has led to the resuscitation by Mr. E. J. Lowe of the synonyms of Asplenium for Athyrium, Aspidium for Polystichum, Nephrodium for Lastrea, and Lomaria for Blechnum; and as he scheduled numerous plants for certificates accordingly, while the other exhibitors scheduled under the more popular names, the Royal Horticultural Society were led into granting certificates under two different systems— a fertile source of future puzzledom. Had the discussion in question taken place, and good reasons been adduced for the alterations made, I am sure they would have been fairly considered, and, it may be, adopted, but as it is I am equally certain that the large majority of Fern lovers will adhere to the vocabulary they have long been used to, especially when they find themselves in such good company as Mr. T. Moore, in his *British Ferns*, Mr. J. Smith, in *Ferns, British and Foreign*, Mr. Britten, in *European Ferns*, and finally, Mr. E. J. Lowe himself, in his *Our Native Ferns*, and *New and Rare Ferns*. These books and authorities use the names common to all recent catalogues, with two exceptions—Mr. Smith classing Athyrium as Asplenium, and Mr. Lowe Blechnum as Lomaria.

In Mr. Britten's book, admirable as it is, we have a glaring example of the confusion attendant upon the lack of some generally accepted plan of nomenclature, even among the scientific botanists. The writer of the Introduction uses the older names, Mr. Britten himself in the body of the book adheres to the modern and popular ones, while the illustrations, coloured and otherwise, are named on a third plan, with occasional variations—in partial deference, we should imagine, to Mr. Britten's protests. Hence we have in one place the Buckler Ferns (Lastreas), and Shield Ferns (Polystichum), classed together as Aspidium—to my mind, a frightful example of "lumping." Further on we have a chapter headed "Lastreas," copiously illustrated with pictures sometimes of Aspidium, and at others of Nephrodium; and finally we have the clear specific difference between Lomaria and Blechnum capitally demonstrated by a woodcut, while the page illustration figuring Blechnum spicant is nevertheless named Lomaria.

Mr. Lowe is consistent in his adherence to Lomaria through all his books; but surely the presence of the independent indusium in that species is too marked a specific character to be ignored, and as every fernist knows Blechnum spicant as such, and we have no Lomarias to clash with it, where is the advantage of changing? Athyrium, again, differs so markedly in its general character, and especially in its deciduousness, from all the Asplenia, that we think the retention of a distinct and well-known name very justifiable, even if it be somewhat faulty in derivation. In any case, it appears to us that if Mr. Lowe's forthcoming *Handbook* be based on these resuscitated names, it will simply tend to render confusion worse confounded, conflicting, as it is bound to do, with all popular authorities, including himself.

Where reform is far more needed is in the direction of the varietal names upon which so much abuse has been lavished. It is, however, here as elsewhere, much easier to abuse than to suggest a practical scheme. Some people seem inclined to advocate the abolition of Latinised or Greecized descriptive names altogether; but this, to my mind, would never be sanctioned by the inner circle of the Fern-loving confraternity. Most of the names, cumbrous and ridiculous as they seem to outsiders, are of great use, and no nuisance whatever, to the specialist who finds, grows, and raises new varieties. To him Polystichum angulare var. divisilobum plumosum densum (Jones), figures on his label, P. ang. div. pl. densum (Jones), and on his tongue as Jones's densum. To call it arbitrarily by some lady's name, P. ang. var. Mrs. Waggles, and refer the fernist to some descriptive list for its history, would certainly be no reform.

What is wanted by the practical fernist is not the abolition of these names, but some approved scheme of control over their application. The chief evil is their excessive multiplicity, and this is largely due to the fact that hosts of forms more curious than beautiful, and often distinctly inferior to the parental forms, instead of being suppressed as soon as they declare themselves, are grown on, and endowed with a name which is sure to be cumbrous and uncouth in precise ratio to the indefinite type of the Fern itself. If all seedlings which were neither true to a fine symmetrical and beautiful parental form, nor a distinct improvement thereupon, were ruthlessly destroyed, we should speedily see, not only a distinct advance in types of the right—*i.e.*, of the decorative—sorts, but also greater facility of naming, due to their definite character. At present, especially since the possibility of crossing has been recognised, a very legion of new forms has arisen, to name which taxes the resources, not only of both Latin and Greek Dictionaries, but also of a strong imagination, the result being names half-descriptive and half-ou fanciful; thence "neither fish, flesh, nor good red-herring."

The first suggestion in the direction of reform is, that no Fern be given a special varietal name unless it be a good wild find, or, if raised under culture, a decidedly distinct, beautiful, constant, and symmetrical variety; and the second is, that a naming committee should meet from time to time under the auspices of the Royal Horticultural Society, and that fronds, or, if possible, specimen plants, be exhibited,

either for naming or confirmation of names already proposed. For lack of some such central authority, new Ferns are now named with far too little regard for existing names, and often on no clear principle at all, the result being that similar appellations are applied to widely differing forms, or *vice versâ*. When once the principle of systematic naming is combined with a fair knowledge of existing types, the task of naming really distinct and good forms is not difficult.

On a recent visit to Mr. G. B. Wollaston, about eighty wild finds from the Lake District, accumulated by one hunter, and already named for him by Mr. Wollaston, were produced, and in nearly every case the name suggested by the writer was either identical or synonymous with the one given, while fully a score were ranked as normal, and left unnamed, being deemed unworthy of culture.

If good pressed fronds, together with full details of finding or raising, were made a condition of naming, a very interesting and valuable collection would gradually accrue to the Society. *Chas. T. Druery, F.L.S.*

REHMANNIA GLUTINOSA.

This is a perennial herb, with so much of the habit of a Gesnerad that it is with surprise that one sees it to be, as at Kew, a hardy perennial. The general appearance is sufficiently indicated in Mr. Allen's figure, taken for us from a plant flowering at Kew. The colour of the corolla is a palé but dull brick-red, its shape not unlike that of the Foxglove, or of the old Gloxinias before they were made to hold their flowers up, and to exchange their irregular for a regular form. It generally goes by the name of R. sinensis, but the name adopted is the more correct. The plant is a native of China, and should find a place in the gardens of those who can find interest in plants even when they are not brightly coloured.

REMARKS ON THE FRUIT CROPS, 1890.

[*For Tabulated Summary, see p.* 127.]

SCOTLAND.

Aberdeenshire.—Cherries had blossomed abundantly, but did not set well, and, especially Morellos, are poor. The earlier varieties of Plums suffered when in blossom from frost, but are a fair average crop. *J. Forrest, Haddo House, Aberdeen.*

—— We had a remarkable absence of severe frosts during the spring, which, in a great measure, accounts for in general fine crops of most varieties of fruits, but so much rain during June and July with cold weather that makes everything from 10 to 15 days later than usual. *R. Farquahar, Fyvie Castle, Fyvie.*

—— Apples are looking better this year than they have done for some years past. Pears are a failure. Sweet Cherries are a fair crop, but Morellos are a failure. Of Plums, the following varieties, Bond's Seedling, Jefferson's, Denyer's Victoria, Magnum Bonum, and Green Gage, have about an average crop. *Francis Duncan, Dunecht House, Dunecht.*

Ayrshire.—All kinds of fruit promised well, there being an abundance of bloom, but the late frosts destroyed the most of it. Strawberries were very much injured by frosty nights early in the month of June. The month of June was very cold and wet and everything is very late this season, and warm weather is much needed in this part. *William Priest, Eglinton Gardens, Irvine.*

—— Our fruit crop is a pretty good one in this locality, excepting Plums, which have failed, even the usually sure-bearing Victoria is very scarce; and some varieties of Apples usually free-bearing, as Suffield and Lord Grosvenor, are bare of fruit, whilst some shy varieties are loaded. *D. Murray, Culzean Castle, Maybole.*

East Lothian.—Generally speaking this is not a good fruit year. Small birds were the chief means of turning a most promising crop of all kinds into a poor one. Some Apples, Currants, and Gooseberries were literally denuded of their fruit-buds. Pears and Plums were also more or less stripped, but to the continued cold and sunless weather during the flowering period was mainly due the small crop of these two latter fruit. Raspberries are a big crop. *R. P. Brotherston, Tyninghame, Prestonkirk.*

Forfarshire.—On July 17 the Strawberries have just begun to ripen, as we are 300 feet above the sea. There have been three exceptionally dry years in this district; the shoots of all kinds of fruit trees have been well matured, and the luxuriance of foliage is remarkable. After a dry spring the rains came just when they were needed, but the burns did not begin to rise till last week. *James Mitchell, Panmure Gardens, Carnoustie, July* 17.

—— Apples on walls are an average crop, and on standards a very heavy crop. No variety of the Pear will yield a good crop here on standard trees. Of Strawberries, Garibaldi and Wonderful are two of the best varieties this year both as to the crop and the quality of the fruit. We still grow Grove End Scarlet Strawberry for preserving purposes, it being a profuse cropper, and cooks of a good bright colour. *J. M. Gairns, Arbuthnot Gardens, Fordoun.*

—— The crop of large fruits is decidedly under the average in this district and very late. A few kinds of Apples bear nice crops, but that is very exceptional, while the trees are suffering from canker more than usual. In the gardens here trees from six to ten-year old are worst. Pears are a complete failure. Plums blossomed very well, but several severe frosts occurred at the beginning, and the crop of the earlier kinds is thin. Sweet Cherries are plentiful and good, Morellos showed a heavy crop, but failed at the stoning period, and young shoots are gumming badly. The few Peaches, Nectarines, that are grown outside are a complete failure. Gooseberries are good in some places, others thin, but swelling well with the showery weather. Our Sulphur Yellow are well cropped, Red Warrington being the next best variety. Strawberries are a fortnight later than usual. *J. Whitton, Glamis Castle Gardens, Glamis.*

Midlothian.—Taking the fruit crop as a whole, it is a good average here. Apricots are an extra fine crop, Moorpark, Hemskerk, Frogmore Early, Kaisha, Powell's Late Peach, and others all bearing well; a notable exception being Large Early, which usually bears well, but is very light this season. Apples are about the average, but this is a good deal owing to many varieties that are not remarkable for free-bearing qualities producing excellent crops this year, while free bearers, like Keswick Codlin, Cellini, Duchess of Oldenburgh, Lord Suffield, and Manx Codlin, have only thin crops, or none at all. The best crops are on King of the Pippins, Cox's Orange Pippin, Ecklinville, Blenheim Pippin, Beauty of Kent, Worcester Pearmain, Tower of Glamis, Maltster, Scarlet Pearmain, Prince Albert, Queen Caroline, Pott's Seedling, Golden Noble, Margaret, Oslin, Devonshire Quarrenden, Frogmore Prolific, Lord Grosvenor, Downton Pippin, Early Julien, Annat Scarlet, Yorkshire Beauty, Round Winter Nonsuch, Braddick's Nonpareil, Easter Pippin, Dutch Codlin, Yorkshire Greening, Early Harvest, Cox's Pomona, Golden Spire, Loddington, Nelson Codlin, Mannington's Pearmain, Fearn's Pippin, Carraway Russet, Galloway Pippin, &c. Pears are a more regular crop than Apples, Beurré d'Amanlis, Beurré d'Aremberg, Hacon's Incomparable, Marie Louise, Glout Morceau, Louise Bonne of Jersey, Doyenné d'Été, Williams' Bon Chrétien, Thomson's, Doyenné du Comice, Fertility, Catillac, Black Achan, Beurré Diel, Colmar d'Été, and Red Doyenné bearing best; while the favourite Hessle, which seldom fails, has a very thin crop. Among Plums, Early Prolific, Early Transparent, Pond's Seedling, Jefferson, Pershore, and Sultan have the finest crops. Cherries are a full average, and most of the favourite varieties are bearing well. Peaches and Nectarines are irregular, but the fruit promises to be fine. All small fruit is abundant, particularly Gooseberries and Strawberries. All fruit is clean, well grown, and free from insects and, with a favourable autumn, promises to be above the average in size and quality. *Malcolm Dunn, Dalkeith Palace Gardens.*

Morayshire.—The fruit crop of all sorts in this district showed an abundant blossom, but failed to set a crop, with the exception of Apricots, Peaches, and Cherries. Pears are best upon espaliers and standards, and are almost a failure on the walls, with the exception of Louise Bonne of Jersey. Plums are a failure on standards, and a thin crop on walls. Strawberries are a heavy crop; but they have at least one-third damaged by rain. Other sorts are swelling away rapidly; but unless we get more sunshine than we have had for the last six weeks they will be late and flavourless. *Chas. Webster, Gordon Castle, Fochabers.*

Nairn.—Old standard trees of Apples are loaded with fruit, whilst on young trees there is only a half crop. Plums on the walls are poor; but the variety Victoria, as standards, are very good. *James Maitland, Cawdor Castle.*

Orkneys.—There was a splendid promise of fruit; but the terrible gale which swept over Orkney on June 25, damaged small fruits greatly, and Pears were destroyed. *J. McDonald, Balfour Castle Gardens, Kirkwall.*

Peebles.—This is certainly the worst season for fruit that we have had for many years. Strawberries are becoming mouldy with wet and cold before they ripen, and all other fruits will be very late in ripening. *M. McIntyre, The Glen, Inverleithen.*

Roxburgh.—Owing to late frosts the fruit crop has not fulfilled its early promise. There was quite a wealth of blossom, but the low temperature experienced was fatal to the greater proportion of it. Apricots are a light crop, but the fruits are swelling freely. Peaches, which were protected while in flower, are fairly good. Victoria Plums have a moderate crop. *R. G. Milne, The Gardens, Minto, Hawick.*

Stirling.—Apples were severely thinned by the untoward weather of June, but a good crop remains of the kinds which are expected not to fail any season, viz., Seaton House (the most productive and useful culinary Apple we have), all the Codlin classes—Stirling Castle, Cellini, Northern Greening, King of the Pippins, and some hardy kinds which are unknown in the locality. Pears are very unpromising, and the kinds fruiting are generally coarse hardy sorts. Plums promised well, but, like Apples, dropped much during June. Cherries generally are plentiful and large, Peaches are grown under glass only, and with Nectarines are fine in quality, and abundant. Apricots are thinned severely by dropping during June. Bush fruits and Raspberries are very abundant and large. Strawberries (especially President), are a very heavy crop. *M. Temple, Carron House, Falkirk.*

Sutherland.—Strawberry Noble has been early, and the fruits of large size. It is a useful variety for early work out-of-doors, the berries being larger than those of the other earlies. If gathered before they are over ripe, the flavour is fairly good, but when it is but a little over ripe it is flat. *D. Melville, Dunrobin Castle Gardens, Golspie.*

Wigton.—I have never seen a better crop of small fruits, but the weather has been bad for ripening them. Apples, Pears, and Plums are not so plentiful, but it was too dry and cold when they were in bloom, and although bloom was abundant, the set was not a good one. *W. Cruden, Castle Kennedy, Stranraer.*

—— The Apricots on walls carry a fair crop, but the fruits are dropping very much at present, and generally it may be said that the Apricot does not succeed in this county. In Apples the deficiency is greatest upon large, old trees, the young trees mostly bearing well. Of Pears nearly all kinds are bearing well, and of Plums the exceptions to the general deficiency are Victoria, Lawson's Golden



Fig. 24.—Rehmannia glutinosa: hardy perennial: flowers dull red. (see p. 156.)

Gage, and Kirke's, which are bearing fair crops. *J. Day, Galloway House.*

Fifeshire.—The only Apple bearing a heavy crop is King of the Pippins; Peasgood's Nonesuch and Ribston Pippin on walls are good. Pears very light crop. Plums almost a blank. Cherries heavy crop of May Duke and Governor Wood. Peaches on walls a very heavy crop. Strawberries a heavy crop, but much injured by rain. *W. Lumley, Broomhall, Dunfermline.*

ENGLAND.—NORTHERN COUNTIES.

Northumberland.—Apples give promise of a good crop, especially those worked on the Paradise stock, which suits our heavy soil. Pears and Plums are almost a failure, owing to the succession of frosts experienced in April, which nearly destroyed all the blossoms. Peaches and Apricots are a fine crop, for being protected, the frost did them no harm. Of the varieties of Strawberries that we grow, I find none to crop like President and Sir Joseph Paxton and for flavour Pauline beats the lot, but it is an awkward-looking fruit. *D. Inglis, Howick Gardens, Lesbury.*

—— Apples gave great promise when in bloom, but frosts destroyed much of it; Duchess of Oldenburg, Lane's Prince Albert, Stirling Castle, Cellini, Broad-eyed Pippin, and several of the smaller-fruited varieties are heavily cropped. Of kinds planted in 1888 and 1889, Tyler's Kernel, Grenadier, Bismarck, and Lord Grosvenor, worked on the Paradise stock, are bearing well. The crop of Apricots was almost destroyed by the 12° to 14° of frost which occurred on April 12, but we saved part of ours. *G. Harris, The Castle Gardens, Alnwick.*

Durham.—Apple and Plum trees were badly blighted, and the fruits of the former are stunted. Pear trees are in good health, and the fruit to all appearance will be excellent in quality. Jargonelle and Louise Bonne de Jersey are the only two varieties that are bearing a fair crop. My estimate of the Apple crop here may probably be the best that will be given in this county, and I attribute our abundance to the elevation of the garden and the amount of shelter afforded it by woods. *R. Westcott, Raby Castle Gardens, Darlington.*

Yorkshire.—There was on the Apple trees an enormous show of bloom and all varieties set well, but a great quantity of fruit dropped—the trees are clean and healthy. Pear trees are making a great deal of wood; Cherries dropped their fruit badly. Peaches and Nectarines are an average crop, with leaves very much blistered. Gooseberries, in sheltered gardens, are abundant; Currants suffered very much from aphis, particularly the black kind. *R. C. Kingston, Brantingham Thorpe, Brough.*

—— All kinds of fruit trees had a grand show of bloom, but the frosts in April were too much for the Pears and Apples. Plums and Cherries did not set well, and the crop was lost mostly in stoning. Strawberries suffered much from the rainy weather, but the crop is a very abundant one hereabouts. *W. Culverwell, Thorpe Perrow, Bedale.*

—— The Apple crop in this district does not realise the early promise, and only a few kinds are carrying a crop, viz., Lord Suffield, King of the Pippins, Normanton Wonder, and Keswick Codlin. Strawberries La Grosse Sucrée and Vicomtesse Hericart de Thury have stood the rainy season the best. *R. Cock, Edenthorpe, Doncaster.*

Lancashire.—We have a good crop of Apples on all our trees, but the maggot made sad work with the setting of fruit and with the foliage. Pears did not suffer so much in that way, and the lightness of the crop may be put down to the continual low night temperature when the trees were in flower. Our thermometer did not fall below the freezing-point during the time. In a neighbouring garden Apricots were an extraordinary set, and the Gooseberry trees are well nigh breaking with the weight of fruit, whilst in another, half a mile off, they are a failure. Ours are as good as need be, but a mile distant there are scarcely any. Many Strawberries spoiled by the wet, and numbers of Cherries are cracked. *Wm. P. Roberts, Cuerdon Hall, Preston.*

ENGLAND.—EASTERN COUNTIES.

Lincolnshire.—Apples and Pears make but a poor show of fruit after the splendid display of bloom. I do not attribute the loss to spring frosts so much as to the lack of winter and spring rains. At the time of flowering the trees were very dry at the roots, and although there appeared to be a good set, immediately dropped off for want of sustenance. *A. S. Elder, Highfield, Gainsborough.*

Suffolk.—Strawberries have been a remarkable crop, and especially Laxton's Noble, which is both large, free, and early. All kinds of fruits benefited by the drenching rains of July. Of Plums the Victoria is the only variety that has a crop; and Apples, owing to their fewness, will be very fine and large. *G. W. Eden, Henham Gardens, Wangford.*

Essex.—Apples and Pears are good only on cordons

and bushes. In some gardens the Pears are fairly good on the walls, but I have not seen any garden where they can be said to be plentiful. Growers who took the precaution of using some means to prevent the ascent of the winter moth appear to be well repaid for their trouble. *Arthur Ocock, Havering Park, Romford.*

—— Notwithstanding the fine and abundant bloom on all kinds of fruit trees, crops are small, excepting Cherries, and bush fruits are abundant and fine. I attribute the scarcity of Apples and Pears to the too low temperature prevailing at the blooming period rather than to frost. Wellington and Hawthornden Apples have a sprinkling of fruit. Striped Beaufin, which did not bear last year, is a very heavy crop. *William Earley, Ilford.*

—— Apples in this neighbourhood are very partial, although we had a fine prospect during the blooming period. Peaches and Nectarines more plentiful than for the last ten years. I have been picking Early Alexander, Early Beatrice, and Early Louise from the open wall since July 14. *James Vert, Audley End, Saffron Walden.*

MIDLAND COUNTIES.

Leicester.—The unfruitful character of the season can hardly be attributed to the most common and traditional cause—continued spring frost, for no frost of special severity occurred in the blooming period, and had they done so, Apricots and Peaches would have suffered, and these are the successful crops of the season. The failure in Plums is complete; Pears almost so. Long periods of cold, dry weather with prevailing north and north-east winds occurring just at a time when fruit trees require the stimulus of heat and moisture seem the most probable cause. The check received by fruit trees gave insects the opportunity of preying upon foliage and fruit blossom, any climatic occurrence causing debility in vegetation is sure to be followed by an access of insect pests. The names of Apples that survived and produced crops in the ungenial weather are worth recording. Blenheim Pippin, Bramley's Seedling, Frogmore Prolific, Golden Noble, King of Pippins, Maltster, King of the Pippins, Worcester Pearmain, Stirling Castle, and Warner's King. *William Ingram, Belvoir Castle Gardens, Grantham.*

—— Apples here are a very poor crop, and the foliage very much devastated with the grub; Lord Suffield, Hawthornden, Cellini, and King of the Pippins have about the best crops. Victoria Plums on a north wall have good crops. Of Nectarines, Lord Napier on a south wall has a good crop of fine fruit, and Nectarine and Peach trees, although the leaves were much blistered in the spring, are healthy now, and cropping well. *G. Maynard, Cole Orton, Ashby-de-la-Zouch.*

Warwickshire.—The Apricot blossom was strong and plentiful, but a severe frost at setting time destroyed it. The arrival of caterpillars has done much injury to the already partial crop of Apples. To a certain extent we anticipate the work of these pests by carefully hand-picking the trees and freeing the embryo fruit of the decaying blossom and leaves which the caterpillars had drawn together to form their nests. Fruit thus relieved made a healthy start and were soon out of harm's way. Cherries, although somewhat small of size, are certainly the outdoor crop of the season in this neighbourhood. Strawberries are plentiful and good, having come through the ordeal of the dry weather in June tolerably well, but had rain not come to the rescue at the beginning of July, the crop would undoubtedly have been a failure. A copious watering followed by a liberal mulching does much towards securing a remunerative crop of Strawberries. Hazel-nuts seem to be plentiful, but Walnuts thin. So far as the season has gone, we have to note a dry cold June, followed by a wet and not very warm July. *Wm. Miller, Combe Abbey Gardens, Coventry.*

—— The trees of Blenheim Orange, Gloria Mundi, and Northern Greening Apples in one of our orchards are loaded with fruit, but in another orchard, distant about a quarter of a mile, there is scarcely a fruit, the caterpillar destroying the bloom before it had time to open. Damsons, as well as Plums, are a complete failure. *J. Rodger, Gardens, Charlecote Park, Warwick.*

Bedfordshire.—The fruit crops are rather disappointing, for there was abundance of blossom, especially on the Pears and Plums, but the set was very poor. Apples are very abundant, and one variety, Lane's Prince Albert, had to be lightened. For the past two seasons we have been much troubled with the caterpillar, and I observed that it was worst where the trees were on grass. Twelve months ago last spring I trenched down all the grass, and put the ground under tillage. This spring the trees were syringed with hellebore just before the blossoms opened, and again when the fruit was set, and we have the pleasure of seeing healthy leafage, which has not been the case for the last six years. *Wm. M. Baillie, Luton Hoo Park, Luton.*

—— The fruit crops on the whole are a failure. Apple trees have again been terribly infested with various kinds of caterpillars; through being eaten up last year they produced abundance of imperfect bloom, but little or no fruit has set. Strawberries and Raspberries, where well attended during the drought, have been the main stay again. Currants, both red and black, much attacked by aphides, and very thin. Gooseberries the same. Morello Cherries, though an average, not up to quality. In spite of all kinds of insects the young growth has been fairly strong, giving brighter prospects for next season. *Alex. McKay, Woburn Abbey, Woburn.*

Bucks.—If the fruit crops in this district are taken collectively, they will fall considerably below the average of ordinary years. The crop of Apples is a partial one, and in some places the trees are much blighted, and the fruits consequently small, and next to useless. Pears are fairly good, but much under the usual average, and the quantity of Plums is too insignificant to be called a crop; in fact, they are nearly a failure. Apricots also are scarce. On the other side we have to record abundant crops of Peaches, Nectarines, Strawberries, Raspberries, Cherries, Walnuts, and Nuts. *Geo. Thos. Miles, Wycombe Abbey, High Wycombe.*

—— The trees in orchards and gardens seemed very unhealthy the early part of the season, but since the heavy rains they look clean, and are growing fast. The wood being formed late, hot sun is much needed for the ripening of the growths. Among Apples small bush trees are bearing freely of the following varieties:—Niton House, Schoolmaster, Worcester Pearmain, Emperor Napoleon, and Mr. Gladstone. *J. Smith, Mentmore, Leighton Buzzard.*

—— The crop of nuts is an immense one, especially the close Filbert, bunches of which I have counted with fourteen nuts to a bunch. *J. W. Shrimpton, The Gardens, Aston Clinton, Tring.*

—— The Apple crop is fairly good throughout this district; the trees are generally healthy and free from caterpillars. Among orchard trees, those of Blenheim Orange, Winter Pearmain, Devonshire Quarrenden, Wellington, Ribston Pippin, and Lemon Pippin, are bearing very good crops, as also are young trees on the Paradise stock of Pott's Seedling, Lord Derby, Lane's Prince Albert, Grenadier, Lord Grosvenor, Cox's Pomona, Cox's Orange Pippin, Warner's King, and Ecklinville Seedling. Pears are quite a failure, many trees not carrying a single fruit. Peaches and Nectarines are unusually plentiful, and the trees healthy. *Chas. Herrin, Dropmore.*

Herts.—The Apple blossom was plentiful, and the fruit set, but it was destroyed by the caterpillar, although hand-picking, syringing, &c., were practised, and the trees winter-washed with a composition of lime, sulphur, soft soap, and paraffin. *J. C. Mundell, Moor Park Gardens, Rickmansworth.*

Cambridge.—Apples showed good bloom, but the maggot destroyed almost every fruit; the only trees showing any fruit are those of the local variety, Chivers Seedling, a sure bearer, and very useful. One orchard of Plums, which yielded 46 tons in 1888, will not yield 10 cwt. this year. Young trees of Victoria have in some places a few fruits. *Andrew Grant, The Vineries, Willingham.*

Stafford.—Apples, when in bloom, looked most promising, but owing to the prevailing east winds they did not set. The most we have are on small bush trees on the Paradise stock, and varieties Lord Suffield, Small's Admirable, Manx Codlin, King of Pippins, Hawthornden, and Cellini Pippin are the best croppers. Pears are very thin, but Cherries are a wonderful crop, and good in quality. Strawberries, Gooseberries, Raspberries, and Currants of all kinds are plentiful and good. *John Wallis, Keele Gardens, Newcastle.*

WESTERN COUNTIES.

Gloucester.—Most of the fruit trees blossomed well, but they suffered from blight, which left Apples an average crop, and Pears good, especially those trees that failed to crop last year. Walnuts bid fair to be plentiful; but it is too early to report upon Filberts and Cobs. *A. Chapman, Weston Birt, Tetbury.*

Monmouth.—Apple crops are partial, most varieties that blossom early (probably owing to the low state of temperature) failed to set fruit, while late flowering kinds carry fair crops. Pears blossomed freely, but their crops are also partial; the best, as might be expected, are to be found in warm situations, and this applies to trees, both upon walls and those exposed. Plums, although they blossomed in profusion, are almost a complete failure, even trees upon walls that were protected from frost are almost fruitless; Apricot blossoms were both weak and imperfect, the crop is consequently thin. Strawberries are plentiful but somewhat undersized and deficient in colour. *T. Coomber, Hendre Gardens, Monmouth.*

Hereford.—Pear trees bloomed well, and had apparently set good crops, but they never swelled, and dropped from the trees, and crops in consequence are very scanty. Lowness of temperature, with dull leaden skies and cold winds, which prevailed during the time the trees were in bloom, were, I think, the main cause of the blooms failing to set. Apple trees blossomed most profusely, and set well, when the caterpillars put in an appearance, and devoured fruit and foliage, in spite of precautions being taken in the shape of grease-bands fixed on the stems, which were well attended to during the winter, and the grease kept in a soft sticky condition. I at last resorted to washing them, and by so doing have secured a fair crop on some of them, but others were too far gone for the washing to be of any service. I made use of the "Curative" sheep wash to mix with the water for syringing the trees. This is an excellent remedy, and, moreover, a very cheap one, the caterpillars soon dying after being wetted with it. *A. Ward, Stoke Edith Park.*

Worcestershire.—Apples are a partial crop. Golden Spire, Maltster, Prince Albert, Lord Grosvenor, May Queen, Manx and Keswick Codlins are carrying fair crops. This failure of the crops I attribute to the injury done to the foliage of the trees in the spring of 1889 by the depredations of the caterpillar of the winter moth, whereby the season of growth was shortened, and fruit-buds formed upon the second growth; and the flimsy nature of the flowers tends to maintain this opinion. Moreover, we experienced a long spell of dry east wind during flowering period, coupled with an attack of Apple-blossom weevil, which finally extinguished all prospects of an Apple crop. Trees this season are in better health, and our hopes, if deferred, are brighter. Pears are a better crop than the Apples, but much fruit has dropped, and the trees are healthy. Plums are a general failure, with just a few exceptions. *W. Crump, Madresfield Court, Malvern.*

—— Apples and Pears are again this season a total failure, which is, no doubt, in respect to Apples in a great measure due to caterpillar and ungenial weather in the flowering stage. Pears bloomed well but suffered from cold, and failed to set their fruits; large trees of the Perry Pears, Barland and Thorn, are exceptions to the general rule, and have good crops. Peaches and Nectarines

are very good crops indeed, and where the trees have been attended to, and kept free of aphis, they are making good progress. Plums, Damsons, and Cherries are all under average, and the trees are blighted. Apricots are partial, some trees being laden, whilst others are quite the reverse. Strawberries are fine and the crops good, so also are red and white Currants and Gooseberries. *J. Austen, Witley Court, Stourport.*

has not been confirmed; the prevailing cold, dry, east winds checked all kinds of fruit trees. Apples are very much eaten by caterpillar, scarcely any trees carrying full crops, excepting Codlins, Warner's King, and Dumelow's Seedling. Damsons are a failure in most places. Strawberries good, but the weather has been very bad, making the crop very uncertain. *Jno. V. Smith, Arley Hall, Northwich.*

Plums have not a single fruit. Peaches and Nectarines are good, clean, and plentiful; they look most promising. Cherries early in the season gave an abundant promise of an excellent crop, but later were attacked with aphis to such an extent that the usual methods of extermination failed. I found Quassia chips the best, if used before the fruit is too far advanced. Bush fruits are plentiful and good; Raspberries very fine, and a heavy crop; also black

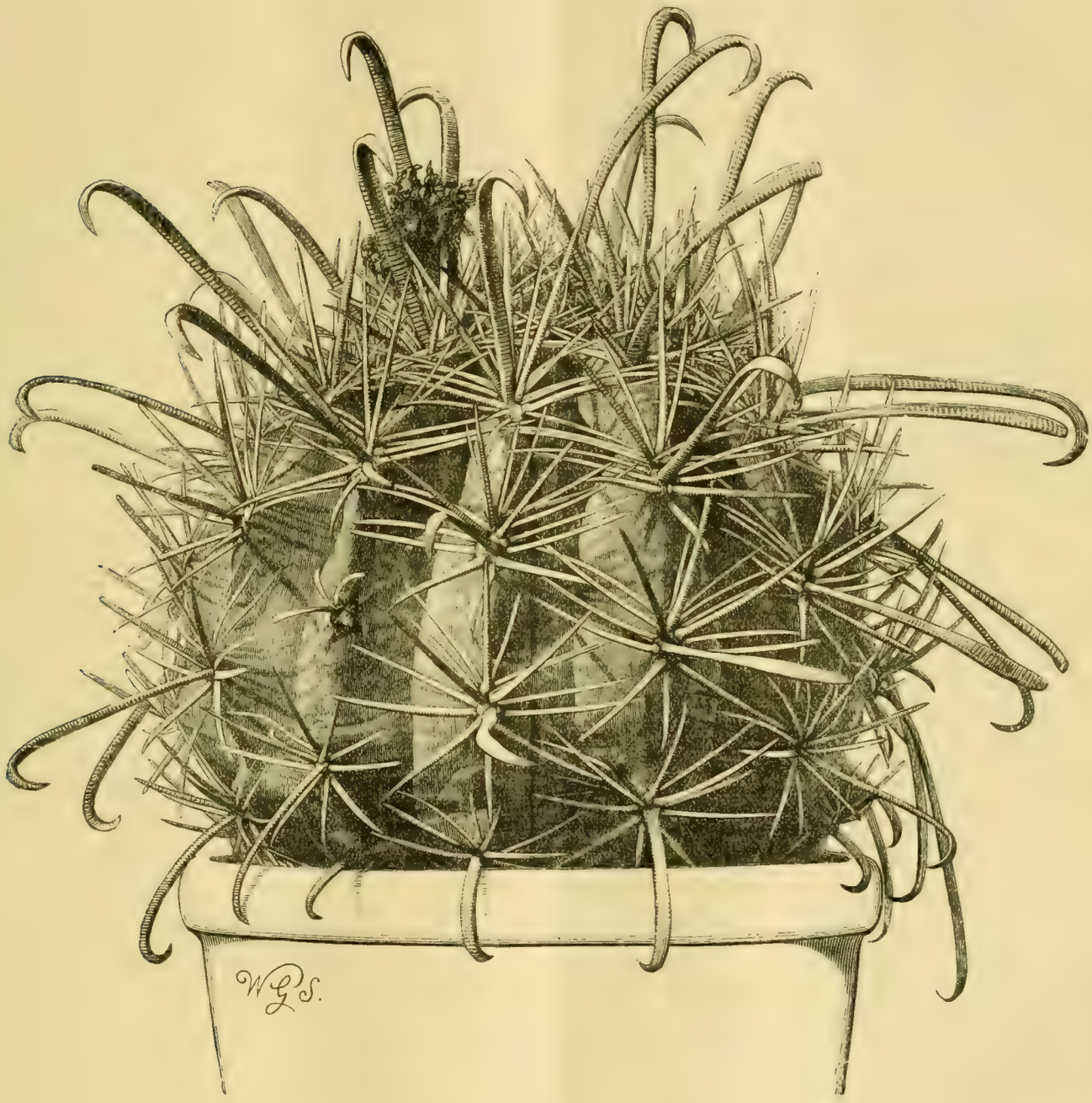


Fig. 25.—the eagle's-claw cactus. (see p. 161.)

Shropshire.—After a remarkable promise of fruit Apples are not an average crop, nevertheless some trees are heavily loaded, especially so Golden Winter Pearmain, Manx Codling, Yorkshire Goose-sauce, Tower of Glamis, Keswick Codlin, and Hawthornden. Pears are mostly in the same "hit and miss" condition. Plums were sadly cut by frost whilst in bloom. Peaches are very prolific and fine; also Figs. Of Damsons there are none. *A. S. Kemp, Broadway, Shifnal.*

Cheshire.—The abundant promise of the spring

SOUTHERN COUNTIES.

Middlesex.—I think this will prove one of the most barren years for a long time, for Apples and Pears are both very bad. Pears are the worst, as even on sheltered south walls there is no fruit; the only kinds with a few fruits are Glou Morceau, Duchess, Passe Colmar (the best), Louise Bonne of Jersey, and Winter Nelis. Of Apples, Devonshire Quarrenden, Irish Peach, Keswick Codlin, Manx Codlin, Lord Grosvenor, Cockle's Pippin, a few Blenheims and Ribstons complete the list. Victorias and choice dessert and red Currants, the fruit of the two latter being large this season. Strawberries have also been good; the first lot came in earlier than usual—Noble and King of Earlies the first week in June, and in quantity a week later; President and Sir J. Paxton have been very fine this season, but much fruit was spoilt owing to the heavy rains, Waterloo and British Queen also giving a lot of large fruit. Damsons promised well, but most of the fruit have dropped. *G. Wythes, Syon Gardens, Brentford.*

—— Apples, Pears, and Plums are the worst

crops we have had in this neighbourhood for ten years, and I never before saw so much blight on all kinds of fruit trees. *W. Bates, The Gardens, Poulett Lodge, Twickenham.*

—— Apples bloomed well, set badly, and what fruit set has thinned since, largely falling. Pears and Plums, though both flowered well, are such poor crops as to be hardly worthy of notice. Plums suffered especially from aphis, but are now fairly clean, and have as have all other fruit trees a luxuriant growth. Cherries were very good relatively, and on standard trees very clean. Wall fruits are not much grown in this district, but bush fruits are largely. Gooseberries have been a fairly good crop, Red Currants very good, and Blacks rather thin, the bloom setting badly, bushes also being badly infested with aphis. Raspberries have been good, and Strawberries a very heavy crop, but still they suffered partially from late frosts, and exceptionally heavy rains. Walnuts are a very fair crop. *Alex. Dean, Bedfont.*

Surrey.—In this district the Apple, Pear, and Plum crops are failures, not through early frosts, but chiefly through the ravages of the caterpillar, which in some plantations quite denuded the trees. Strawberries have been abundant and fine, but owing to the continuous rains and the exceptional low temperature, the flavour was very poor. Gooseberries, black and white Currants, are very fine and heavy crops. Raspberries are also a heavy crop, but require sun to give them flavour; without this they will be useless as dessert fruits. *A. Evans, Lythe Hill, Haslemere.*

Kent.—I never remember the prospects of an all-round good yield being more promising. In the early spring all kinds of trees were one mass of blossom. Apples are very irregular; here and there one comes across orchards carrying really good crops of such kinds as Blenheim Orange, King of the Pippins, Ecklinville Seedling, Grenadier, and Warner's King; but, generally speaking, the crop will be under the average. Grenadier and Ecklinville Seedling maintain their reputation for cropping every year, and are carrying very heavy crops. Pears are more scarce than Apples. Plums are exceedingly scarce; even such a good sort as Victoria has failed us. There are a few more Damsons than Plums, but even that fruit is a very poor crop. On the other hand, however, Nectarines and Peaches are an average crop, and both trees and fruit are looking remarkably well, but these results are only seen where close attention has been paid to the trees. Bush fruits of all kinds have carried immense crops, with the exception of black Currants, which have been a little below the average. Cherries a good average crop, but the early ones suffered a great deal from wet; the later and larger sorts, however, have been really good. *G. Woodward, Barham Court Gardens, Maidstone.*

—— Fruit trees, with the exception of Apricots and Plums (including Damsons), are in this neighbourhood bearing better crops than last year. Apples, although far from being good all round, are in many places bearing some very nice crops. The most noticeable this season being Blenheim Orange, Nonsuch, Yorkshire Beauty, Manx Codlin, King of the Pippins (probably the best), and Keswick Codlin; while of younger trees, Grenadier, Lord Derby, Cox's Pomona, Golden Noble, Gladstone, Warner's King, and Ecklinville Seedling, are bearing well, and the fruit has every appearance of attaining good size. Lane's Prince Albert, Stirling Castle, and in some places Cox's Orange Pippin are also bearing well. The growth is encouraging, having a good start early in the season, as the caterpillar has not been so troublesome. Pears are thin, and in exposed parts almost a failure. But we have been obliged to thin out much of the fruit on Williams' Bon Chrétien, Beurré d'Amanlis, Pitmaston Duchesse, Louise Bonne of Jersey, and Passe Colmar, while on Marie Louise and Glou Morceau there is a very fair sprinkling of fruit. Peaches and Nectarines are very good, and although aphis was troublesome early in the season, a few dressings of quassia water put matters straight, and the growth is strong, clean, and healthy. Waterloo has been very good, Hale's Early (now ripe), Early York, Dymond, Abec, the most notable amongst them this season, while Elruge, Pine-apple, and Humboldt are the best of the Nectarines. Apricots are a complete failure, attributable to the severe frost, which killed the buds before they opened. Soft fruits have been good. Of the Black Currants, Greenbud takes the lead both for quantity and size, and the market growers sold them readily at 10*s.* and 11*s.* per sieve of 48 lb. nett. Gooseberries were plentiful, while Strawberries were exceptionally fine, though the wet weather spoiled much of the fruit. Sweet Cherries are a fair crop, especially Napoleons, while Morellos are good, both for size and quantity; the growths too are clean and strong. Of Plums and Damsons there is scarcely a fruit of any variety, even the Victoria has failed. The Cob-nut in favoured and well-managed plantations is bearing well, and gives every promise of a good crop. The best will range downwards from three-quarters of a ton to the acre. *D. Markham, Mereworth Castle, Wateringbury.*

—— Tree fruits in this neighbourhood seem fairly good in quality, but are generally scarce. Apples a very good crop as regards quantity, but are, I think, fairly good in quality. The caterpillar plague was not so bad this year as in the two previous. Washing with a decoction of soft-soap, quassia, &c., has had some good effect in checking it. We had plenty of bloom on almost every description of fruit trees, but a very bad "set." Pears seem likely to yield a smaller crop than any other of the usual garden fruits. *G. Don, Bedgebury, Hawkhurst.*

Sussex.—The fruit crop is not satisfactory either in quantity or quality. We have plenty of Apples on the following:—King of the Pippins, Crimson Queening, Northern Greening, Duchess of Oldenburg, Irish Peach, Bess Pool, Margil, Mannington Pearmain, Small's Admirable, New Hawthornden, Winter Hawthornden, Codlin, Pott's Seedling, White Paradise, Hanwell Souring, Sam Young, Evagil, Betty Geeson, Lady Henniker, Hicks' Fancy, Beauty of Kent, Ringer, Golden Harry, Ecklinville. *J. Rust, Eridge Castle, near Tunbridge Wells.*

Hants.—With the exception of Ribston Pippin and King Pippin we have no Apples on the older trees; most of the young trees have got a few. *T. D. Myles, Appley Towers, Ryde, I.O.W.*

—— The fruit crop in this district is decidedly the best we have had for the past two seasons. Apples and Pears are carrying crops which have in former years been eaten up by the caterpillar pest. The trees this season have not suffered so severely, having made a good growth, and now require sun to ripen up the wood. Peaches and Nectarines have suffered severely from aphis, owing a great deal to the cold sunless weather; they are now clean and making good growth. *A. Maxim, Heckfield Place, Winchfield.*

—— Of Apples, Warner's King, Ecklinville, Mère de Ménage, Worcester Pearmain, Nelson's Glory, New Hawthornden, and Irish Peach, are heavily cropped, and the trees clean and healthy. Plums are a failure, except Victoria and Orleans. Peaches look remarkably well, both in the fruit and growth alike. Cherries set freely, the fruit swelled to a large size, and considering the lack of sunshine, were of good flavour. Sir Joseph Paxton Strawberry again proved itself one of the best varieties for cropping and travelling quality, and Vicomtesse Hericart de Thury quite the best for flavour. *E. Molyneux, Swanmore Park, Bishop's Waltham.*

—— The Apple crop in many places about here is a failure; but in these gardens is good, and many kinds are heavily cropped, such as the Irish Peach, Keswick Codlin, Cellini, Royal Russet, Lord Suffield, and Worcester Pearmain. *Wm. Smythe, The Gardens, Basing Park, Alton.*

Berks.—King of the Pippins, Hanwell Souring, Lord Suffield, and Keswick Codlins, are our best Apples, while Jargonelle, Williams' Bon Chrétien, and Louise Bonne of Jersey are heavy crops. Plums are fine and far between in this district; it is many years since we had such a scarcity of bloom. *J. Rose, Lockinge, Wantage.*

Wilts.—The prospect of securing good crops of Apples and Pears was very promising when the trees were in flower; but the advent of a few degrees of frost the end of May, when the blossoms were damp, and the subsequent ravages of the caterpillar, not only spoilt the crop, but greatly impaired the growth of the trees. Although the crop of Apples in our orchard (over half a mile from the walled-in kitchen gardens) is over light indeed, that on our horizontal-trained trees in the kitchen garden is good, Keswick Codlin, Mère de Ménage, Nonpareil, King of the Pippins, and Irish Peach, being the best. *H. W. Ward, Longford Castle, Salisbury.*

—— The Apple crop in this locality, if not generally good, is very abundant in some places, and as a result the fruit must be small. We have good crops of Lord Suffield, Irish Peach, Cox's Orange, and Blenheim Pippin, Red Astrachan, and Cat's-head Codlin, as well as many local kinds that need not be mentioned. Pears are generally thin, but we have a sprinkling of fairly clean fruits of Marie Louise, Doyenné Boussoch, Beurré Clairgeau, Glou Morceau, Flemish Beauty, Nelis d'Hiver, Nouveau Soutan, and Gratiole of Jersey. Plums appear to be more scarce, but we have seven kinds bearing well, viz., The Czar, Pershore, Victoria, and a local kind bearing an abundant crop. There is also a sprinkle of Guthrie's Green Gage, as well as the ordinary kinds. Cherries are a fair average crop. Peaches and Nectarines we do not grow out-of-doors. Apricots none. Small fruits are very abundant, especially Raspberries, and I must here mention the great success of Superlative. Strawberries a good crop. Cob Filberts and Walnuts abundant. *C. Warden, Clarendon, Salisbury.*

SOUTH-WESTERN COUNTIES.

Devon.—The Apple crop is a good average, and considering the coldness of the season, the fruits are of good size. We have heavy crops on most of the bush and pyramid trees. The orchard trees have a more partial crop; some are heavily laden with fruit, others have scarcely any. *Geo. Baker, Membland.*

Cornwall.—Owing to the dull cold weather which has prevailed here for the last two months, the fruit crop is very much reduced. Cherries and Apples have fallen off by gallons. Pears are small, and many deformed, but if fine bright weather should set in, an average crop will result, but of inferior quality. Nuts are plentiful; in Cobs I see bunches of six and seven. *C. Lee, Boconnoc Gardens, Lostwithiel.*

WALES.

Pembroke.—All fruit trees bloomed remarkably well this season, but the cold, damp, sunless season we have had has well-nigh ruined the crops of all kinds. Plums set well, but have nearly all dropped off; all varieties, including Damsons, are very thin. Pears also set well, but the fruits are undersized, and the tenderer varieties damaged. Josephine de Malines, Pitmaston Duchess, Nouvelle Fulvie, Beurré Baltet Père, and Marie Louise d'Uccle appear to stand the weather best. Apples did not set well, except on walls. *Geo. Griffin, Slebech Park, Haverfordwest.*

Denbighshire.—Apples in orchards are a good average crop, while such old standard varieties as King of the Pippins, Duchess of Oldenberg, Warner's King, Keswick Codling, &c., carry fine crops, but the newer varieties are much under the average, as also Pears. The Apricot crop is abundant, and fruits of fine quality, as are Peaches and Nectarines. *J. Loudon, The Quinta, Chirk.*

IRELAND.

Armagh.—The fruit crop is very disappointing this year; all in this district thought there would be good crops, after having an abundant bloom and not much late frost; but most of the bloom fell off, leaving Apples, Pears, and Plums a poor crop.

Although it was an early spring, things are later now than usual, owing to the continued cold weather. *Thomas Sheasby, Castle Dillon, Armagh.*

Dublin.—Fruit crops are under average in this neighbourhood. Early appearances gave promise of abundance, but continuous east wind and cold wet weather have produced fatal results. Wall fruit is thin; Plums all but a failure; Apples and Pears very poor, especially the latter. Insects have been unusually troublesome; Gooseberries and Currants have been overrun with them. *G. Smith, Viceregal Gardens, Dublin.*

Tyrone.—Fruit is this year very abundant, the result, no doubt, of last summer being warm and dry, and the spring mild. Although the present summer is rather wet, it is favourable for swelling up the fruit well, and with a good autumn the result will be very satisfactory. *Robert Bell, Baron's Court, Tyrone.*

CHANNEL ISLES.

Jersey.—There is a very poor fruit crop this season. Apricots, Peaches, and Nectarines, are in many cases a complete failure. Plums are scarce. The early sorts of Pears have to be searched for, as the spring frosts, especially on the morning of March 4 last, destroyed all the bloom, except in the most sheltered situations. Small fruits are a fair crop, Strawberries, Currants, Gooseberries, and Raspberries being abundant in some places. Chaumontelles and some of the later varieties of Pears promise fairly, but Morello Cherries dropped off at the stoning season. *Charles B. Saunders, St. Saviour's, Jersey.*

Guernsey.—The season has been so exceedingly wet and sunless, that fruits so far ripe have not been of a very high quality, nor indeed could it possibly be expected. Strawberries in quantity rotted on the ground just at colouring time, and the flavour of those gathered was watery. *C. Smithson, Caledonia Nursery, Guernsey.*

SOME NOTES ON ECHINOCACTUS.

The genus Echinocactus is represented in southern California by a great diversity of forms which nearly approach each other. The Cactaceæ are generally recognised as very difficult to study, not perhaps because they are characterless, but because of the difficulty of making specimens, and the usual lack of material for study. Only by very extended and close field-observation can one arrive at correct conclusions relative to species and varieties, and this none of our botanists have yet enjoyed.

Near San Diego the genus is represented by E. viridescens, Nutt., usually a low, depressed plant of about thirteen ribs, with pale straw-coloured flowers and a slightly acid and pleasant fruit. This is a maritime species or variety almost wholly restricted to the immediate neighbourhood of San Diego.

Echinocactus Orcuttii, Engelm., is found a little further to the south and further inland from the coast. It differs in size, the number of ribs (usually twenty-two to thirty), and in the young plants, which are globose. It is inclined to grow in cæspitose clumps of fifteen to twenty cylindrical heads, around which the ribs are often spirally inclined. It seems to form almost a connecting link between E. viridescens and E. cylindraceus, Engelm., which was originally collected by Dr. Parry on the eastern slopes of the mountains bordering the Colorado Desert, in San Diego County. Dr. Engelmann was at one time inclined to doubt its right to specific rank, as other botanists are still inclined to doubt. In 1882, I found what I determined was this species in the desert cañons of Lower California and also west of the mountains near the San Rafael Valley, and Dr. Engelmann wrote that he concurred with me in that opinion. This Cactus was a fine cylindrical plant, encompassed by a fine network of its slender, recurving white spines, with lemon-yellow flowers.

Echinocactus Lecontei, Engelm., is another species originally credited to the eastern slope of our mountains and to Arizona. Hundreds of plants annually reach the European market under this name, collected within the confines of the Colorado Desert, which differ in only a slight degree from E. cylindraceus. This form is more inclined to a grayish colour, less flexible spines, and perhaps to a more globose shape. The demand in Europe for this particular species makes it command a higher price than many others, and it was only recently that I learned whence the trade was supplied. As they are collected near the original locality cited for it, no blame can attach to those who endeavour to supply the demand, but I must consider it merely a "trade name" for a form differing in no essential character from other plants yearly sent out under this, the preceding, and the following names:—

Echinocactus Wislizeni, Engelm. (see fig. 25, p. 159) is the oldest name applied to any of these forms of Cacti. Some of the plants received under this name are beautiful, with white spines, like those of E. cylindraceus; others have exceedingly handsome red spines; still others have dull spines of no special colour. In young plants, especially, the colour is very variable, as are also the spines.

Echinocactus Emoryi is the last of our Californian species to receive notice. It more nearly approaches the two first-mentioned species, the reddish spines and flowers being usually the most characteristic features. But along with the red-spined and red-flowered plants I have found other varieties—white, green, brown, and other shades—until no constant character can be found by which to distinguish between them.

English Cacticulturists claim that E. Orcuttii is identical with the old E. californicus, a name considered synonymous with E. viridescens by Dr. Engelmann. A great variety of plants have reached the European market under the latter name, which, considering its natural variations, is not to be wondered at.

I have carefully studied every form in southern and northern Lower California that I have been able to learn of, and I have been forced to the conclusion that only three true species exist within our limits—E. polycephalus (belonging to a distinct section of the genus), E. Wislizeni, and E. viridescens. Under E. Wislizeni I would class as varieties E. cylindraceus and E. Lecontei; while under E. viridescens I would place E. Emoryi and E. Orcuttii as sufficiently well-marked varieties. Several other varieties of both these species could be sufficiently distinguished to satisfy the foreign trade. Perhaps these views will not be retained when I become more familiar with Arizona, New Mexico, and Mexican forms, but they are certainly in line with the later views of Dr. Engelmann, the greatest authority on the family that we have had. *C. R. Orcutt, in "Garden and Forest."*

PLANTS AND THEIR CULTURE.

The Stove.—Much attention must be paid to shading, plants being scorched and ruined for a season by a few minutes' hot sunshine following cloudy weather. It is the safest plan always to leave just a trifling amount of ventilation at the top of the houses, to allow of the moisture escaping. Keep all plants clean, as growths injured now are not readily replaced, and the plants are disfigured for some months. Many strong-growing plants repotted early in the year may be assisted with a fertiliser, large Palms and Crotons being much benefited by manure water, and in warm weather they will want abundant root watering. Tree Ferns also require copious supplies daily, both at the root and on the trunks, which should never be allowed to get quite dry. Marantas and Alocasias will need plenty of water, and the leaves to be occasionally sponged should red-spider be troublesome, syringing the under sides of the leaves with clear rain-water. Caladiums will also last much longer if treated in a similar way, and afforded liquid manure.

Allamandas, Bougainvilleas, and all strong growers may have liquid manure in some form, and borders full of roots should be mulched with manure, Achimenes coming into bloom should be removed to a drier, cooler house, on purpose to lengthen the flowering period. Hymenocallis showing bloom will also last much longer if put in a cool house. The useful H. macrostephaina, now showing plenty of spikes, should be afforded manure water. Eucharis that have been growing freely should be put into a cooler house if many flowers are required in the autumn. Young plants or bulbs in active growth should be shifted and plenty of heat and moisture afforded them.

Cissus discolor if strong growing and required to make large specimens, should be shifted into larger pots that they may fill their pots with roots. Aphelandra aurantiaca should be induced to make good wood for blooming next season. Jasminum gracillimum should be encouraged to make fine growth, stopping the strongest or leading shoots to induce the side shoots to break. The Rondeletias, of which speciosa major is the best variety, are serviceable flowerers and should be encouraged; and Plumbago rosea may be shifted before it gets too much pot bound. Poinsettias may be transferred to 48's if full of roots, this being a useful sized pot for the young stock to grow in; cuttings of Poinsettias may be potted, also Coleus for the late autumn decoration, using small pots and growing the plants near the light. One cutting in a small pot is best, a final shift into a 48 being given when thoroughly rooted. Torenias should be put in a cool house when coming into bloom; a few seeds of these plants may yet be sown for late autumn blooming. The plants should be rapidly grown. Justicias, if required to fill small vases in November, may now be propagated, choosing healthy shoots, and putting them singly in small 60's in bottom heat. Panicum variegatum may be increased by division; also Fittonias, which are useful decorative plants when kept in small pots. Some good-coloured shoots of Crotons, if struck in small pots, will be found of use, also Pilea muscosa. Some well developed suckers of Pandanus Veitchii should be struck, also crowns of Ananassa sativa variegata potted up; young stock of Acalyphas will now be easily secured. These are plants that are useful in a variety of ways, and should be grown near the glass to prevent drawing. *G. Wythes, Syon House, Brentford.*

THE KITCHEN GARDEN.

Potatos.—All the early varieties which were left in the ground to mature for planting purposes and storing should be lifted carefully as soon as the skins are "set," otherwise in showery weather they are apt to start into growth. Sort out the sizes proper for planting, and place them thinly in some dry spot. The tubers selected for consumption put in a cool, dark place, or put them in dry earth out-of-doors.

Vegetable Marrows.—The warm weather is helping the growth of these plants, and some attention should be afforded them once a week in thinning and stopping the shoots, water at the roots being abundantly supplied, or mildew and red spider will appear. Flowers of sulphur dusted over the foliage will rid it of either. Top-dress the hillocks with soil and mulch with manure. If Marrows are planted in firm soil with manure sparingly used the plants will make a firm and fruitful bine. When the fruits are large enough cut them, and by this means prolong the productiveness of the plants.

Kidney Beans and Scarlet Runners.—The late and early sowings in dry soils should be mulched heavily with manure, and heavy soils less so, watering them thoroughly when the soil becomes dry. Runner Beans of all kinds require rich food, and should at no time be allowed to suffer want of water, or the flowers will not set well. Keep the plants in vigorous growth by allowing no seeds to ripen, and if the green pods, in case of a glut, are spread out in a cool shed and sprinkled with water, they will be kept in a fresh condition for several days.

Mushrooms.—The material for making beds in the house should be collected daily, until a sufficient quantity is got together for at least one bed. These should be put in an open shed, and occasionally turned, to keep them from heating too fiercely and spoiling. In the meantime, cleanse the house by filling up crevices with mortar, lime-washing the walls, scrubbing the shelves, &c., so that all may be clean and free from insect life. Crickets and beetles may be destroyed with two dressings of fine oatmeal mixed with a little poison called "Rough on Rats," which may be had at any chemist's; and the woodlice may be destroyed with scalding water. *H. Markham, Mereworth Castle, Maidstone.*

EDITORIAL NOTICES.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

NEWSPAPERS. — *Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY,	Aug. 11	Royal Botanic Society: Annual General.
TUESDAY,	Aug. 12	Royal Horticultural Society: Fruit, Floral, and Scientific Committees, and Lecture.

SHOWS.

TUESDAY,	Aug. 12	Clay Cross. Chard.
THURSDAY,	Aug. 14	Maidenhead.
FRIDAY,	Aug. 15	Cheadale (two days).
SATURDAY,	Aug. 16	Hawick. National Co-operative: Crystal Palace.

SALES.

THURSDAY,	Aug. 14	Clearance of Plants at Wright's Nursery, Lee; also the Leasehold Nursery, by Protheroe & Morris.
FRIDAY,	Aug. 15	Imported and Established Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—62°.6.

The British Fruit Growers' Association.

THIS useful Society held its first provincial Conference in conjunction with the Horticultural Show in the Abbey Park, Leicester, on Tuesday last. The meeting, though thinly attended, was a successful one, the chair being taken at 3 P.M. by JAMES ELLIS, Esq., M.P. After an opening address by the Chairman, Mr. T. FRANCIS RIVERS read a paper on Cherries and Plums, Mr. W. INGRAM contributed a paper on Fruits for Leicestershire, in relation especially to geological conditions, drainage, and shelter, Mr. A. H. PEARSON dealt with Apples for the Midlands, and Mr. G. BUNYARD with Pruning. The members of the Association present were also entertained at luncheon, together with the judges, by the Mayor, Corporation, and Abbey Park Committee.

In his paper on the Cherry Mr. RIVERS commented on the circumstance that the Cherry will grow on very dry soil, and stated that by preference a calcareous gravel should be selected. Dwarf trees should be planted in rows 15 feet apart from row to row, and 12 feet apart from tree to tree, or less in the case of Morellos and May Dukes. Very little pruning should be practised. Early Rivers Cherry is now found to be as hardy as the May Duke, and is a fortnight earlier, so that Mr. RIVERS has now no hesitation in recommending its culture for profit in Kent and elsewhere, together with the white Bigarreau, which is known to be very profitable.

The Bigarreau and the Guigne Cherries should be grafted on the "Mazzard" or wild Cherry, the May Duke and the Morello on the Mahaleb stock, which grows freely on dry chalky soil. Cherry culture is considered to be profitable in England, but Mr. RIVERS points out that those who would grow Cherries in perfection must grow them under glass.

Speaking of Plums, Mr. RIVERS advised his hearers not to plant Oullin's Golden Gage, but Denniston's Superb, Prince Engelbert, Sultan, Gisborne's, Pond's Seedling, and the Victoria were, with others, recommended for market purposes.

Dwarf trees 9 feet apart and 9 feet from row to row are recommended to be grown on calcareous clay, but to combat the element of uncertainty in our climate, Mr. RIVERS again recommends resort to the use of glass.

"Plums rotting on the ground" from the abundance of the crop, a circumstance which actually happened a few years since, should be met by drying or otherwise preserving the fruit.

Mr. PEARSON'S paper on "Apple Culture for the Midlands" was practical and to the point. We are enabled, by the courtesy of the Secretary, to print the introductory portion, and we may hope to give the substance of this and the other papers read in subsequent issues.

"It may perhaps strike some one that the idea of planting for profit is out of place, when we look around our orchards and see the trees devastated with the caterpillar, and all prospect of fruit marred, if not blighted. Some will even go so far, I doubt not, as to say that Apple growing is a delusion and a snare, but I think there is no reason for us to accept their view. That we have all suffered loss this season, and many of us last season, is true, but I see no cause for despair; such things have happened in the past, and have passed away in due course. I have heard my father speak of a year when our Apple trees, which cover nearly 100 acres of land, had scarcely a leaf left upon them, and such a thing as a perfect leaf was hardly to be found. The whole of the trees had the appearance of being scorched, as if huge bonfires had been lighted under them, but in the course of a few days an immense flock of starlings found their way to the orchards, and in an almost incredibly short time they practically cleared off the caterpillar. It will be in the recollection of most of you that a few years ago the Oak trees were in many parts of the country completely divested of their foliage by caterpillars, and some few died from the effects, but I never heard that any landed proprietors gave up the idea of planting Oaks in consequence, and the old Oaks to-day look as luxuriant as ever they did before their trial. The Potato disease has not yet frightened our brothers in the Green Isle from cultivating that most useful tuber, nor are we going to turn our backs upon fruit culture because of a few difficulties. It is not my business to speak to you upon the caterpillar pest, but if it were I should advise those of you who have large orchards, and especially those whose trees are large standards, to pursue a policy of masterly inactivity, and instead of purchasing Paris green, London purple, force-pumps, and other remedies, to keep your money in your pockets, protect the birds, manure the trees, and leave the issue with Nature.

"For those who live in districts where labour is abundant, for those who intend to give their own labour and attention to their own plot of land, there is no system to be compared with that of planting bushes or pyramids, and of tilling and cropping the land between with small fruits and vegetables. By this mode of culture we obtain a speedy return for capital invested, and above all we may by care and attention produce fruit of such size and quality that it shall command a ready sale at a good price, no matter what is the state of the market. My friend Mr. John Wright has so clearly set forth the system in his admirable little book, *Profitable Fruit Growing*, that it will scarcely need doing again in our generation, and I shall say no more about it. On the other hand, much as I admire what our French neighbours call *petite* culture, I am fully persuaded, both by reason and experience, that those of us who live in districts where neither women nor children will work out-of-doors need not attempt it. Raspberries and Strawberries are paying crops where you have suitable labour, and superintend the work of gathering the fruit yourself, but just try the experiment of putting men at 3*s.* a day to the work, and where will the profits go? There will always be a large number of planters who will prefer standard trees, some market growers who will cultivate by horse power the land between the trees, using it for vegetable or for grain, and others who will plant orchards upon grass land, or lay the land down to grass after the trees are planted. To this latter class belong most of our agricultural friends, who wish to increase their home supply of Apples or to grow them for the market. Into the question of cultivated versus grass orchards, I fear I may not venture further than to say this one word. Whatever merits cultivation may have when properly carried out, it has none when only half done, and the land allowed to become covered with couch grass and weeds of every description. I would, therefore, advise farmers and landowners whose men are fully occupied during the summer with haymaking, root-cleaning, and harvest work, to shun cultivated orchards, and plant them in the old-fashioned way upon grass, but give them a better system of treatment afterwards than has hitherto been the rule. My reason for introducing the question of standard versus pyramid trees is this. Having the fortune, or misfortune, to grow trees for sale as well as for fruit, I find the utmost difficulty to make people believe that the same varieties of Apples will not always succeed equally well in both forms. People see a bush in some one's garden bearing a profusion of fruit, and if they are about to plant an orchard they go to a nurseryman and ask for so many standard trees of that variety. It may be, that although suitable for a pyramid worked on a Paradise stock, it is from its habit of growth quite unsuited for a standard tree. Let us take, as an instance, an Apple well known in this locality, the Court Pendû Plat, called in my neighbourhood Wollaton Pippin. There are few, if any Apples, which bear better in the form of a pyramid, and as the blossom expands later than that of any other variety, it escapes frost, and the tree is consequently not only an abundant but also a regular cropper; the effect is that but little wood is produced, and the tree is all fruit spurs. To plant such a variety in the form of a standard is a waste of land, as the tree can never occupy anything like the amount of space usually allotted in an orchard, and in most soils this kind is, as a standard, very short lived; even where it keeps alive it makes but little growth. We have trees in our orchards thirty or forty years old, the heads of which are not larger than a good-sized Black Currant bush, and the growth of which is so stunted and gnarled as to prevent the free flow of sap to the extremities, so that even when they bear fruit it is, from lack of proper nourishment, but small and worthless. Again, there are varieties which are unsuited for standard culture because of the size of the fruit and its liability to be blown off by early autumn gales. We sell every year great numbers of Lord Suffield in the form of standards, but my experience would not lead me to plant it in that form. In making this remark I am not in the least afraid of injuring the sale of these trees; we grow them because the public will have them, and it takes a good deal of preaching, both in public and in private, to divert the stream of public opinion. For two generations we have inveighed against the Blenheim Orange as a standard, and to-day it is perhaps more popular than ever with small growers. Market men do not, it is true, plant it as they did, but as many trees are sold to-day as of almost any other variety. I take it that it is the especial province of the Association in whose name I speak to-day to combat all



A GROUP IN MR BULL'S ORCHID EXHIBITION.

error, to make black marks against that which is bad, and to call attention to that which is good."

The Association is already doing a good work, and though we should not overburden a young Society, we trust the managers will keep in view the interest of the cottager, allotment gardener and small farmer, as well as that of the orchardist on a large scale. It should not rely exclusively upon papers read at a flower-show but upon practical demonstrations of the way to plant, and prune and pack, and upon exhibitions of the best kinds of fruit for particular purposes and special localities, taking care not only to show the fruit but the tree also.

The Gardeners' Orphan Fund.—The usual monthly meeting of the committee took place at the Horticultural Club, Hotel Windsor, on the 1st inst., and Mr. William Marshall, Chairman of the Floral Committee of the Royal Horticultural Society, was unanimously elected Chairman of the committee for the ensuing year, in the place of the late Mr. G. Deal. Mr. Hugh Low, Clapton Nursery, E., was elected a member of the committee, in the place of the late chairman. A letter was read from Mrs. Deal thanking the committee for their vote of condolence with her on the death of her husband, and the same was ordered to be entered upon the minutes. The matter of the Deal Memorial Fund was mentioned, and any further consideration deferred until the next meeting of the committee; meanwhile, subscriptions to it will be received by the Hon. Secretary. Suggestions thrown out by the Chairman of the recent annual meeting, that the financial year should end on Dec. 31, instead of July 31, and that the annual dinner should take place earlier in the year, were postponed for further consideration. The Hon. Secretary brought up a report of the dinner expenses, and the same was ordered to be paid, and also the quarter's payment to the newly-elected children, the guardians being the mother, except the child be deprived of both parents, in which case the uncle was accepted. Hearty votes of thanks were passed to the donors of plants, fruits, and flowers on the occasion of the dinner. It was resolved that the committee do not meet again till the last Friday in October. It was unanimously resolved that a further sum of £500 be invested in Consols. A hearty vote of thanks to the Chairman brought the proceedings to a close.

Ceremony at Brussels in Honour of Dodoens.—On Monday, July 21, *fêtes* took place in Brussels to commemorate the sixtieth anniversary of the National Independence, and the twenty-fifth anniversary of the reign of King Leopold II. On this occasion the members of the municipality unveiled, in the Place du Petit-Sablon, the statues of several celebrated Belgians, notably those of Mercator and Ortelius, two celebrated geographers, and of Dodoens, the great botanist of the sixteenth century. Rembert Dodoens (Dodonæus) was born at Malines in 1517, and became not only a celebrated botanist, but also a renowned physician. He cultivated successfully several branches of natural history, astronomy, literature, and ancient languages. He was chief physician to the Emperor Maximilian II., and to his son, Rodolph, at Vienna. Afterwards, returning to the Low Countries, he established himself first at Antwerp, but afterwards proceeded to Leyden, where he occupied a professor's chair at the University, and died in that city in 1585. The reputation of Dodoens was so great among botanists that Pulteney, Plumier, and De Candolle attached the name of Dodoens to several plants. The following are the best known among his many books:—*Histoire des Plantes* (Cruydeboek), with figures, Antwerp, 1644 (folio); *Histoire des Fruits, Histoire des Plantes Purgatives, &c.; Histoire de la Vigne, du Vin et de quelques autres Plantes Rares*, 1580, and *Stirpium Historiæ pemptades sex, &c.* (folio), 1583, printed by Plantin, at Antwerp. There are busts of Dodoens in the Botanic Gardens of Leyden, Malines, Ghent, and Brussels. His name is written in letters of gold on the entrance of the new Orangery, in the Botanic Gardens at Antwerp. The honour recently paid to his memory at Brussels is yet another proof of the estimation in which the Belgians hold their greatest men. As examples of this it may be mentioned that there are busts of Kickx, father and son; of Charles Morren, of Ed. Morren, and of B. Dumortier, in various Universities and Botanic Gardens. There is besides this a statue of Coudenberg, at Antwerp, which was at first placed in one of the public parks of the town, but was subsequently transferred to the Botanic Garden. A well-known horticulturist, traveller, and writer on botanical and horticultural subjects, Louis Van Houtte, has a statue erected to his memory in one of the public squares at Gendbrugge, near Ghent. Many streets are named after botanists or horticulturists; among the latter may be mentioned the Rue Van Houtte, and the Rue Van Geert, at Ghent; Rue Van Geert, at Antwerp; and Rue Jacob Makoy, at Liège.

B. S. Williams.—How shall we best commemorate the services to Horticulture of our deceased friend? Various schemes have been proposed, and much may be said in favour of all or any of them. The best principle clearly to follow is to adopt some plan most nearly in accordance with the general tenor of his life's work, or one which would be most in harmony and sympathy with his own feelings were it possible for him to express them. But has he not expressed them? Was it not as a cultivator and a teacher of others by example and by precept that he achieved his reputation? He was not and never pretended to be a learned botanist. Others surpassed him in the introduction of novelties—but who excelled him as a cultivator? Who had greater appreciation of "good cultivation" on the part of others? Who had warmer sympathies with the practical gardeners, their trials, and difficulties? No one. Acting, we infer, on this principle, a circular is before us in which occurs the following passage:—

"It is proposed to establish a 'Williams Memorial Fund,' to provide, at horticultural exhibitions, money prizes and certificates for the encouragement of the cultivation of stove and greenhouse plants and Orchids; these prizes and certificates to be competed for in the usual way. To carry out the proposal, a committee is in course of formation, to include representatives of all horticultural interests associated with, or related to, the special sphere of activities of our late friend, who was especially distinguished as an importer, cultivator, and raiser of tender exotic plants, to which the proposed memorial prizes would especially apply."

To give effect to this proposal, or to adopt a better one, should a better one be forthcoming, a meeting of horticulturists is announced to be held at the Horticultural Club, in the Hotel Windsor, Westminster, on Tuesday next, August 12, at 2 P.M., when probably decisive steps will be taken to give form and purpose to the proposal. It is desired that communications on the subject be addressed to H. J. Veitch, Esq., 544, King's Road, Chelsea, S.W.; or Shirley Hibberd, Esq., Kew, near London.

The British Bookmaker.—Do not start, reader! We are not speaking of anything connected with race-course literature, but with a serial devoted to the interests of all those concerned in book-making—covers as well as contents. It is remarkable for the typography and general get-up. The coloured advertisement pages in the text, however, constitute an eyesore.

The Double Carpenteria.—Last week, in alluding to this, we omitted to mention its greatest peculiarity, which is the position of the ovary. In Carpenteria, as in the nearly allied Philadelphus, the ovary is, as it is called, inferior; but in the double flower the ovary was clearly superior, and the stamens given off from the axis beneath it (hypogynous). The explanation is that the axis in these flowers does not develop into a cup-shaped expansion around, and in union with the ovary. In so far it is the consequence of an arrest of development or specialisation in connection, probably, with more rapid growth.

Araucaria Cunninghami.—This tree, known as the Moreton Bay Pine, and occurring in dense forests in Queensland, has been discovered in the mountains of New Guinea at a height of from 6000 feet upwards.

Alexander von Bunge.—The death of this botanical patriarch at Dorpat in his eighty-seventh year is announced. He accompanied C. A. Meyer and Ledebour on a botanical journey in the Altai Mountains, but did not at once return thence, but settled as a physician in Barnaul. From here he went in a similar capacity to Pekin, with a diplomatic mission in 1830-1832. On his return to St. Petersburgh he was appointed Professor at Kasan, and afterwards at Dorpat. In 1857 he visited Persia. He wrote much on the plants of the countries visited by him, as well as on those collected by Lehmann in Turkestan, and was the author of a monograph of the genus Astragalus. Professor Bunge presided over one of the meetings of the Florence Botanical Congress of 1874.

Brazilian Orchids.—In the not very convenient medium of an ordinary Brazilian newspaper Vicomte de Saint Leger has published descriptions of a supposed new Lælia without a name, of Cattleya Patrocinii ×, a supposed hybrid between C. Loddigesii and C. guttata leopardina, and of a Cattleya without petals.

Flora of North Wales.—We have before us a list of the birds, wild flowers, Ferns, mosses, and grasses of Bettws-y-Coed and neighbourhood, compiled by the publisher, Mr. Darlington, of Llangollen. There are a few misprints, but on the whole the catalogue, though open to criticism, is superior to those one generally sees appended to guide-books. Why the Rushes, grasses, and Ferns, misprinted Felices, should be treated apart from the other plants, and the due sequence interfered with is not obvious.

Hybrid Streptocarpus.—The beautiful and interesting hybrids raised at Kew by Mr. Watson, form the subject of an article in the current number of the *Revue de l'Horticulture Belge*. A coloured plate is given, showing several of the forms, whilst the text, contributed by M. C. de Bosschere, gives the history of the genus from a horticultural point of view.

Horticultural Meeting at Ghent in July.—Certificates of Merit were awarded to a variety of Acineta Humboldti from Venezuela, with flowers much paler in colour than are those of the type, but still very effective. 2nd, to Odontoglossum vexillarium, with a large white lip, slightly tinged with rose; an exceedingly well-grown plant. 3rd, to O. excellens, an admirable variety, in which the purest white was a beautiful contrast to the very clear yellow of some of the parts. 4th, to another variety of O. vexillarium, well-shaped, and bearing a very dark blotch upon the lip. All these four Orchids were from M. J. Hye-Leysen. 5th, to Mormodes luxatum (Certificate unanimously awarded), well-flowered; and 6th, to a very rare and beautiful Cattleya Gaskelliana alba, from M. Van Imshoot. 7th, to a very pretty dark variety of Lælia elegans. 8th, to another variety of the same species, the sepals and petals of which were most delicately shaded with clear lilac and salmon colour, with a slight copper-coloured flush; this variety is agreeably perfumed, and, together with the two last-named specimens, were sent from Messrs. Vervaet & Co. 9th, to a very beautiful, finely-coloured variety, with

well-marked spots, of Cypripedium bellatulum, from MM. Boelens Frères. 10th, to a Phœnix Rœbellini, imported this year from the Philippines, and shown by MM. Aug. Van Geert & Jules de Cock, short and elegant in habit, foliage exceedingly feathery and graceful. 11th, to Anthurium Duvivierianum, from M. L. de Smet-Duvivier, a good variety, with a fine white spathe. 12th, to Fuchsia triphylla, shown by M. Ed. Pynaert van Geert, a reintroduction, bearing flowers about 1¼ to 1½ inch long, of a fine shade of vermilion, and growing in clusters. A Cultural Certificate was allotted by general consent to a specimen of Sobralia macrantha from M. Ed. Pynaert van Geert. This fine plant bore sixteen well-opened blooms, and sixty-three buds. The circumference of the tub in which the plant was growing was about 10 feet, the measurement round the plant itself (which was in excellent health) was over 16 feet. The slender stems were stiff and erect, forming a large dense tuft, or mass, of thick foliage, of a bright green colour, from amid which were produced the large flowers of a pinkish-violet; the lip being relieved by shaded spots of purple and violet, the inside of the throat being creamish-white. The flowers succeed each other in rapid succession; the day after the meeting we counted twenty-four flowers opened, and thirty-four buds on the point of expanding. "Honourable Mention" was made of a Latania borbonica fol. var.; a pale variety of Anthurium Rothschildianum, A. marmoratum, and of a plant of Lælia elegans alba.

Orchids for Beginners.—Mr. James Anderson is contributing some interesting articles on the culture of these plants to the columns of the *Northern Gardener*. The long-tried experience of the writer renders these articles at once historically interesting and practically valuable.

Westerham Gardeners' Society. — The members of this Society visited the nurseries of Messrs. Cannell & Sons, at Swanley, on July 10, and also the fruit-preserving establishment of Mr. Wood, and the vineries of Mr. Ladds, and were much impressed by what they saw. Mr. Cannell asks us to say, that they will be glad to receive similar visits from other societies of a like character, if due notice be given beforehand. We can only recommend, from personal experience, that gardeners should avail themselves of the offer, which they will find it to their advantage to accept.

Olive Culture at Mentone. — The Olive (Olea europæa), as grown at Mentone, forms an umbrageous tree almost as tall as a small Oak, and producing a dark-coloured, diminutive berry, from which an abundance of excellent oil is obtained. The crushing mills are water-worked, and are still universally primitive in construction and method, and are but little changed, indeed, since the time of the Romans. Consequently there is much waste, and the production of the oil is costly. Near Florence the very same quality of fruit is made to produce a superior oil, which commands a better price in the foreign markets than that produced at Mentone, and this simply from the adoption of improved machinery. The Florentine mills are worked by an English company, and it pays a good dividend.

The Royal Scottish Arboricultural Society.—The thirty-seventh general meeting of the Royal Scottish Arboricultural Society was held at Dingwall recently, in connection with the annual excursion, which this year is being made to the estates of Castle Leod, Novar, the Seaforth estate of Brahan and Fairburn. The Edinburgh members travelled north from the Waverley Station by the 5.23 A.M. train, and on the way several gentlemen joined the party. Dingwall was reached about half-past one o'clock, and the head-quarters of the Society were taken up at the National Hotel. After lunch the general meeting of the Society was held, at which there were present about fifty gentlemen from different parts of Scotland and England. Mr. D. F. Mackenzie, Morton Hall, Liberton, senior vice-president, presided. The Secretary intimated applications from twenty-three gentlemen for membership in the Society, and these were all passed. Professor Bayley Balfour, Edinburgh, was elected president for next year, and Mr. W. M'Corquodale, Scone, and Mr. Munro Ferguson, M.P., of Raith and Novar, vice-presidents.

The Fruiterers' Company in Maidstone.—On Friday, Aug. 1, Sir James Whitehead, Master, and several members of the Fruiterers' Company, visited Maidstone, for the purpose of inspecting the neighbouring fruit gardens. The party was met at Barming by Mr. G. Bunyard, who after showing the visitors over his nurseries entertained them to luncheon. The visitors then proceeded to the fruit gardens of Mr. Roger Leigh, at Barham Court, Teston, being conducted by Mr. Woodward the head gardener and by the agent Mr. Key. A break was made on the way for the purpose of allowing some of the party to inspect Mr. Allwork's typical plantations of fruit and Kent cob-nuts, near the "North Pole." Leaving Barham Court, a drive of half-an-hour brought the party to Maidstone, where Sir James Whitehead entertained them.

Scottish Horticultural Association.—This society held its ordinary monthly meeting on the 5th inst., at 5, St. Andrew's Square, Mr. Grieve, Pilrig Nurseries, in the chair, when papers were read by Mr. G. Bunyard, Maidstone, on Cherries and Raspberries, and Mr. McMillan, Trinity Cottage Gardens, on "The Gardener's Friends and Foes."

Abies Douglasii. — We understand that the Stair variety, to which we alluded in a previous number, has attained a height of 21 feet at Castle Kennedy, where it is growing in a low, damp, and sheltered situation. At Munches it is 13 feet high, and has made a good growth this season. It is a very handsome variety.

THE ORCHID EXHIBITION AT MR. W. BULL'S.

[See Supplementary Sheet.]

The month of August is not one in which a large display of Orchids in flower is to be generally looked for, but at Mr. Bull's nurseries, in the King's Road, Chelsea, there are still large numbers to be seen, and although the tenth annual exhibition closed on July 31, it is still intact, and contains examples of about 160 species, embracing over forty genera. The Cypripediums are represented by twenty-five distinct species and hybrids, while of Cattleyas there are over a dozen, including the striking C. Schofieldianum, and a fine specimen of C. gigas Reginæ, with five fully developed flowers of very rich colouring. Lycaste Skinneri, and the pure white L. S. alba, early-flowering Orchids, are to be seen, and several pieces of Catasetum Bungerothii, and bearing long racemes of large and conspicuous waxy-white flowers, and perhaps form the most noticeable feature in the house. There are about two dozen species of Odontoglossum, including some good specimens of the rare O. mirandum, rich red-brown and yellow; varieties of O. crispum abound, and show up well, while O. hastilabium, and O. Harryanum in variety, are plentiful. Masdevallias of the ignea Massangeana, Harryana, and Lindeni types lend a rich colouring to the more numerous whites and yellows, and Disa grandiflora also plays its part; while suspended from the roof are several examples of the curiously-formed Mormodes luxatum eburneum, and of Miltonia vexillaria there are some very fine varieties in flower.

Other plants worthy of note include Acineta Barkeri, Anguloa Clowesi; Cattleyas gigas, Mossiæ, Mendeli, and Eldorado; Cymbidium Lowianum, Cypripedium Hookeræ, C. tonsum, C. Stonei, C. Dayanum, and C. Parishii; Epidendrum vitellinum, Dendrochilum filiforme, Masdevallia calura, M. infracta, M. trochilus, and M. Veitchiana; Gongora Loddigesii, Narcodes Medusæ, Oncidium Gardnerianum, O. Jonesianum, and O. papilio; Peristeria elata, Phalænopsis grandiflora and amabilis, Promenæa citrina and P. stapelioides, and Dendrobium Dalhousieanum. The setting of green tends in no small degree to heighten the general effect, especially the employment of Oplismenus imbecilis intermedius as an edging to the stage. It hangs in a graceful curve, and stands rough usage. Of the larger plants a Marattia attracts notice, and also Catakidozamia Hopei, a Cycad with shiny green and large-sized fronds; Curculigo recurvata striata, a bold-growing Cyclanth; Ceratozamia mexicana, and of Palms Phœnix rupicola, a cool plant, and capable of standing rough work, is largely employed.

Our illustration (see Supplement), representing a view in the show house, is a reproduction from a photograph taken earlier in the season, among the flowers represented being Cymbidium Lowianum atropurpureum in the centre, and to the left Anguloa Ruckeri; Dendrobium Bensoniæ, and D. thyrsiflorum at the top; Cattleya Mendeli and Mossiæ on the right, and about the centre is a fine Aërides Fieldingi roseum. Dendrobium fimbriatum oculatum is seen in the lower right-hand corner, while in the foreground are Miltonia vexillaria and M. Roezli; Odontoglossum crispum, with Lælia purpurata and Cypripedium caudatum occupying the left-hand side. The foliage plants include those already mentioned.

NURSERY NOTES.

THE KNOWEFIELD NURSERIES, CARLISLE.

It is satisfactory to know that the planting of trees is making progress. There is a great deal of arable clay land in the eastern counties worth at the present time only £10 per acre, which might, I think, be profitably planted with Oak and Ash for the production of timber, and for the improvement of the climate of a level country which is at present far too open to the cold eastern winds. But besides these arable districts, which it seems impossible, with present prices, to farm profitably, there are wide tracts in the north of England which it is generally admitted should be planted. In visiting, lately, an estate of 50,000 acres not far from Carlisle, I was assured that the climate has been already considerably improved by planting, and that an extension of the existing plantations was contemplated. The same remark applies to the wide tract which extends from the point of the Solway far into Cumberland, a level, low, and at present an unsheltered country which greatly needs timber as a break wind. It is said that the Solway formerly reached as far as Netherby, where anchors have been excavated on the estate of Sir Richard Graham, and where I have recently inspected some of the best managed and most profitable woods in the country. I stayed a night at Carlisle on purpose to visit, for the second time, the well-managed woods of Netherby, and on such an occasion I of course visited the nurseries of Messrs. Little & Ballantyne, one of the greatest caterers for the planters in this country. It seems that timber planting is best accomplished by means of a division of labour. Netherby is supplied with Larch, Scotch Fir, Spruce, Birch, and other plants, by the firm just named, and several large planters have assured me that Messrs. Little & Ballantyne are supplying them with "stuff" for planting, at rates lower than those for which they could grow it at home. But, however this may be, it is certain that this firm does an enormous business in forest trees and general nursery stock, which is distributed not only in this country but in America, Canada, and the Colonies.

I am able to state that the opinion of this eminent firm is, that the demand for trees for planting is likely still further to increase, and they have prepared themselves accordingly for an additional output of plants. Their enlarged and still extending nursery, half a mile from Carlisle, consists of 150 to 200 acres; their stock of one and two years' seedling Larch—more than 2,000,000 of which are planted out in nursery lines annually—consists of 11,000,000 plants; Scotch Fir — same age, and 2,000,000 to 3,000,000 planted out annually, 7,000,000 plants; Spruce, same age, and 1,000,000 planted out annually, 5,000,000; Corsican and Austrian Pine, 1,000,000 each; Douglas Fir, 100,000; millions of Thorns, Beech, Sycamore, Ash, and other hard woods. There are large quantities of hardwoods of all kinds, and many beds of seedlings

peeping out of the ground, with troops of women weeding them. One would say that timber planting is assured of sufficient supplies of plants for some time to come, and the rest of the business must depend on the foresight, enterprise and capital of landowners. It seems to me that home-grown timber is likely to be in great demand, as agriculture advances, for the erection of cheap sheds and farm buildings for the shelter of stock, and to cover and preserve manure, hay, and straw, especially in isolated districts.

In making the tour of the nurseries, I observed a new house 100 feet long, filled with Pot Roses, Hybrid Perpetual Roses, the stock of which is over 100,000, grown in the open ground. There are large quantities of all kinds of ornamental shrubs, and of alpine and herbaceous plants; and I had the opportunity of seeing John Ruskin, the Strawberry commended in the *Gardeners' Chronicle*, June 7, p. 719. It appears there is a great demand for Ivies, which are here in large quantities, and for Clematis of all kinds, which are largely sent to America. There is a house full of the Japanese Ampelopsis in pots, and another house of Pelargoniums, including many new forms, some having blossoms which, on measurement, proved to be 2½ inches across. Blossoms are difficult to measure with the eye, and look less than they really are. A Begonia blossom may well be 6 inches across, but it would probably be guessed by the inexperienced at an inch or two less. I suppose it will not be improper to mention that Mr. Greig, the manager here, is exceedingly proud of a new Holly, which he thinks will set the Thames on fire when it comes into commerce by and by, and quits its present site on the banks of the Eden. It is a sport from Hodgins' Holly, and is certainly a most brilliant and beautiful golden-variegated specimen, well named Golden King. The herbaceous gardens are well hedged, and protected with Beech. They are numerous, and well stocked. A boy visiting here was astonished at the number of these separate gardens, and guessed them at a thousand. I did not count them, but I noticed some of the plants that most caught the eye at the time of my visit, such as Delphinium nudicaule, a pure red; Lychnis viscaria florepleno, which was very full indeed of handsome rose-coloured blossoms; Erinus alpinus, a free-flowering, pretty alpine, spreading here in the garden wherever the seed happened to fall. True to the habit of its tribe, it flourishes with little soil, and blossoms quite at home on the tops of walls. I think Aquilegia glandulosa should be mentioned as a thing to grow, and Aubrietia Leichtlini as a great improvement on the more common variety.

The Yews present a curious divergence, and a great tendency to variegation. There is an upright Golden Yew here, whose young foliage is brown on first appearing, and remains brown in June, but afterwards assumes the true golden tint. It was growing on the now filled up vallum of the Roman wall which crossed this part of the country from the Solway to the Tyne, passing through the Knowefield Nurseries, whose modern culture contrasts strangely with the old-world work of the Roman period. During our walk and talk we passed some specimens of that handsome shrub, the Japanese Yew, Podocarpus koriana, and as we passed some Laurels, too, I would beg to say to any who are not posted up on this point, that they should avoid the old common sort, and plant the Colchic Laurel and the round-leaved sort, as being much hardier and more ornamental.

Among the Conifers a plant of great interest grows here, Pinus Balfouriana, from Oregon, named after Professor Balfour. It is 11 feet high, full of foliage, and a very handsome tree, prized as the sole remaining plant derived from three seeds sent over by Mr. Jeffrey, the botanical collector. Pinus pyrenaica is growing very luxuriantly here, and at 30 feet high has not yet produced seeds. It is a handsome tree, with longer leaves than P. austriaca, and very superior to it. A pyramidal Scotch Fir is one of the novelties here, and it is coming true from seed. The Albert Spruce, from Oregon, claimed our notice as we passed it, and although there is much else worth attention, I must stop with this specimen, and postpone further remarks on the contents of these grounds. The Albert Spruce does not differ greatly botanically from the Hemlock Spruce, which holds the position of a very useful tree in another part of the same wide continent, but it differs from it in habit. It is a natural reflection on completing an inspection of a great collection of plants that Nature's variations are never likely to be exhausted. *H. E.*

Carnations and Picotees.

At the Chelsea nurseries of Messrs. J. Veitch & Sons some excellent beds of the above-named plants may yet be found displaying a large amount of bloom. The novelties are but few for the present season, but the flowering plants being arranged in contiguous beds, they can be readily compared one with the other.

The collection is both large and select, and contains the best of the show and border kinds. One of the prettiest of selfs is a Clove-scented Carnation, passing under the name of the Rose-coloured Clove—a nice flower, plant of medium height when in flower, the colour a soft shade of rose. Carnation Rose Celestial is a dwarf plant of a long-continued habit of flowering; C. Gloire de Nancy, and C. R. H. Pomeroy, the latter a rich carnation colour, are desirable varieties. C. Crimson Pet is, as its name denotes, a bright-coloured flower, of tall growth, and good for the flower border. C. William Toby, named after a Chelsea Carnation fancier, is a good thing; colour deep crimson.

C. Mrs. Frank Watt, a seedling raised by Mr. Ware, Tottenham, has a dwarf compact habit, good flowers, which are white, and is an abundant bloomer.

C. Thalia (Douglas), a crimson flake, was in good condition. It is a fine bloomer, rather tall, and as good for the border as for pot culture. C. Walter Ware and C. Royal, both selfs of different shades of purple, are excellent for beds or borders; as also C. Alice Ayres, a good bloom and abundant—white and rose, a fancy Carnation that is like many of the finest flowers; it is cast out by the florist by reason of its want of the true characteristic of a florist's Carnation.

C. Virgo is a choice white with very neat, rosette-like blooms, well adapted for a button-hole flower, and much to be preferred to the overgrown Malmaisons now too commonly employed for the purpose. C. Germania (Benary), shown by the firm in '87, is canary-yellow, habit excellent, and a profuse bloomer. C. Elsie is a flower of the palest shade of yellow with rosy flakes—a very pretty bloom. The coppery-salmon C. Mrs. Reynolds Hole was in good bloom. It is still a great favourite with the ladies.

C. Raby is a bright cerise, a fine showy bloom, and very free; but not good enough for a florist's self, because of the serrated edges of the petals. Where cut flowers are much required it is a fine variety to plant in quantity. C. Elaine (Douglas) is an opaque white, very free, and of medium height; C. Souvenir Hans Makart, is a good border variety, free, and of strong constitution; C. grandiflora is a fancy, white ground, crimson flake and suffusion; another fancy is Countess of Ellesmere; C. Coroner is the best of the scarlet-flowered Carnations; and C. Comtesse de Paris, of the palest flesh tint, is a very early bloomer, that brings flowers of a large size at the beginning of the season. The Picotees form a full collection, and we mention Mrs. Little, a good purple-edged flower; Baroness Burdett-Coutts, a fine white and purple-edged flower.

Philadelphus.—A curious difference has been noted in the flowers of this shrub when gathered and placed in water. Some of the flowers on one side of the branch wither almost directly, whilst others on the other side of the same branch, placed under exactly the same circumstances as far as can be seen, remain fresh for a day or two. It is no question of fertilisation, for in this respect there is no difference between the flowers. We have watched the appearances frequently this summer, but without being able to understand the reasons for it.

Orchid Notes and Gleanings.

Orchids at Burford Lodge, Dorking.

It is for rare things that the visitor to Sir Trevor Lawrence's famed collection looks, and he never turns away disappointed. At the present time, a number of very interesting and beautiful species are in bloom, notably in the collection of Sobralias, which embraces all the known species in cultivation; the pretty S. sessilis, and S. Warscewiczii are just over, but a fine specimen of the yellow-flowered S. xantholeuca, with its large Cattleya-like blooms, and a new form of it, if not a distinct species, with flowers similar in regard to size, but of an Apricot-tinted cream colour. Some large specimens of S. macrantha were also found in flower. These plants are, at Burford, found to keep in better health and flower more abundantly if they are placed in an airy vinery or greenhouse after flowering in the summer.

The Cypripediums are always to be observed in fine condition here, C. Lawrenceanum and others of the handsome-leaved species being grown to such perfection, that the plants are beautiful objects even when not in bloom. Some interesting seedlings were in flower, and also some fine examples of C. Curtisii, C. Stonei, C. superciliare×, C. superbum, C. euryandrum×, the ruby-tinted C. selligerum rubrum, and most of the species comprised in the C. concolor, C. Godefroyæ, and C. bellatulum sections.

In the warm houses, the noteworthy species in bloom consisted of Calanthe gigantea, Aërides Picotianum, a showy species allied to A. Houlletianum, Phalænopsis grandiflora, and a curious form of P. amabilis or P. gloriosa, with spotted lower sepals; Thunia alba, and the quite pure white T. candidissima; Platyclinis filiformis, with fifty or sixty of its sprays of elegant golden flowers; Dendrobium rhodostoma×, D. revolutum, D. Dearei, D. endocharis×, and the handsome D. MacCarthiæ.

The intermediate-houses have besides the plants usually found in bloom at this time of the year, a superb form of C. labiata Gaskelliana — the best that we have observed; C. Loddigesii, C. Schofieldiana, true, and not the form of C. granulosa that usually bears the former name; the white C. Eldorado Wallisii, and the allied but larger and stronger-growing C. crocata rosea; a light form of L. elegans Turneri, with a fine spike of eight flowers; and a number of Miltonia vexillaria, still in bloom. The handsome orange-scarlet Lælia monophylla, with fifteen well advanced flower-spikes, bids fair to be the gem of the cool-houses. This fine species which, when grown in heat, used to be thought a certain failure, Mr. White finds no trouble with when grown in the cool, shady Odontoglossum-house. Suspended in the same house were the numerous plants of Chamæroid Masdevallias, vigorous of growth, and some of them in bloom; also Odontoglossum Uro-Skinneri, excellent examples; O. bictonense album, several O. Harryanum, one with ten flowers on a spike; Trichosma suavis, some Epidendrum vitellinum majus, Anguloa uniflora Turneri, and various other species.

In the Masdevallia house, along with the showier species, were many of the small-growing, curious species, which always attract so much attention from beholders, as M. simula, M. muscosa, with its mossy scape and sensitive-lipped flowers; M. gemmata, M. tridactylites, &c., and Pleurothallis macroblepharis, and other curious Pleurothallids. Among rare plants specially well flowered were the brilliant scarlet Habenaria militaris, which here grows very freely; the golden-sprayed Oncidium chrysoraphis, the pretty rose and white Saccolabium Hendersonianum, the curious little Angræcum distichum, the rare Dendrobium monophyllum, the extraordinary and beautiful Bulbophyllum grandiflorum, and a very handsome dark-spotted form of Peristeria guttata.

In the greenhouses the double and single Begonias are fine, the old Tweedieа cœrulea very pretty, and outdoors the stately rows of Crinum Powellii and C. Mooreanum are sights to linger over, while the

general arrangement of the garden with Gladioli, showy perennials and annuals is very effective, the beauty of the whole being heightened by the rugged side of Box Hill, which rises behind.

IVY-LEAVED AND ZONAL PELARGONIUMS AT CHISWICK.

There is a well-grown and flowered collection of these here just now, giving the old Paxton House, in which they are located, quite a gay and attractive appearance. Amongst the double-flowered Ivies (Pelargonium peltatum) we may mention a few of the best. One of the finest in this section is Souvenir de Charles Turner, of the richest rosy-carmine, heavily marked on the upper petals; General Brière de l'Isle is a magnificent carmine, slightly tinted, very double, most profuse bloomer, and very dwarf in habit; Abel Carrière, beautiful soft magenta; De Quatrefages is of a bright shade of violet-magenta, large open flowers; Le Printemps, a very beautiful and effective variety, flowers rosy-pink; a good "trailing" kind is Isidore Feral, large, very double, rose-coloured flowers. As seen here, trained pyramid shape, Madame Crousse, cerise, is a beautiful free-flowering variety. Madame Thibaut is still fine, with its deep rose flowers: a plant of splendid habit. Galilee is a charming soft lilac flower, large and well-formed. Emile Lemoine, orange-scarlet pips: very large.

Amongst the singles, Innocence—an old, but good and now seldom seen variety—was a perfect sheet of its flesh-coloured flowers, very free and beautiful. Lucie Lemoine, white, with rose centre. Masterpiece, large trusses of a beautiful rich magenta-crimson, one raised by Mr. George, who was one of the earliest and foremost improvers of the Ivy-leaved Pelargonium.

In the zonals, we remarked as specially fine, Sissy, salmon, the upper petals shaded with orange and pink; Eclair, a very fine scarlet flower; Mrs. D. Saunders, pale-lilac pink, very large flowers; Mr. W. Bealby, rosy-scarlet, of splendid habit; Edith Strachan, clear salmon, fine shape and substance, dwarf free habit; International, very delicate blush-white—a good pot plant; Amy Amphlett, a beautiful white, flowers of good size and substance, very free.

THE FLOWER GARDEN.

The late spell of brilliant weather has changed the look of the flower garden for the better, heightening the colours of the fine foliage plants, and causing the flowering plants to flower freely; and should the fine weather last for some time longer, the beds and borders will be in great beauty. Drought in the beds must be guarded against by timely waterings, and any neglect of this needful work will cause the plants to go rapidly out of bloom. Mulching the beds should have been done ere this, but it is yet not too late to do it. Remove decayed foliage and flowers at frequent intervals, and keep down weeds. The lawn should be neatly kept and regularly mown, and everything done to preserve as trim an appearance as possible.

Dahlias.—These plants have grown rapidly, and should be well attended to as regards tying and staking, as they are easily damaged by strong winds. Earwigs are very destructive to Dahlia flowers and foliage, and should be trapped, either by placing inverted flower-pots on the ends of the stakes, or stalks of Beans, or anything else that is hollow, may be tied to the stems, taken off every day, well shaken, and the insects destroyed.

Propagation.—Prepare for the propagation of bedding plants forthwith, as the earlier the plants are struck the better they will pass through the winter and bloom next year. Verbenas are often troublesome to keep in health during the winter, and should be taken off first, and if potted off or planted out in boxes or pans as soon as they are fit to move, a good stock may be secured for providing the spring cuttings. Boxes about 4 inches deep and 2 feet long, and 1 foot wide, are good for striking and harbouring Pelargoniums, and a good stock of them should be got in readiness for the work. When the garden has attained the height of its perfection for the season is the time to go, note-book in hand, and note defects in arrangement to be remedied, and desirable alterations carried out next season.

Where annuals have been used for embellishing the flower garden, they will just now be very effective. Godetias, Candytufts, Phlox Drummondi, Asters, Chrysanthemums, and others; Calendulas, Collinsia, Linarias; also borderings of Nemophila, Virginia Stock, Limnanthes Douglasi, Venus' Looking-glass, &c. With a knowledge of the heights and colours of the various annuals, an effect may be secured equal if not surpassing anything that can be produced by the use of ordinary bedding plants, and certainly with far less trouble and expense.

The layering of Carnations and Picotees now demands attention, employing sandy loam and leaf-mould as a compost in which to sink the layers. When layered, daily sprinkling the layers helps their rooting, and water should be freely applied in dry weather. Old plants may be freely layered, scooping out basins and filling them with compost where the layers are situated; by this means great masses of bloom may be obtained about the old stations. *D. C. Powell, Powerham, Devon.*

FRUITS UNDER GLASS.

Tomatos.—Cuttings of Hackwood Park or other good selection from the old red variety having a good constitution should now be struck, to supply fruit during winter and spring; 12 or 14-inch pots are best for winter Tomatos, and an open but not very rich soil, but which should be free from fresh manure, the object being to produce hard, wiry growth, which sets its fruits well. The pots should be well drained. If the plants from which the cuttings are taken are infested with white fly, it would be well to dip the cuttings in an insecticide before putting them in to strike. Calvert's carbolic soft soap is a good one,

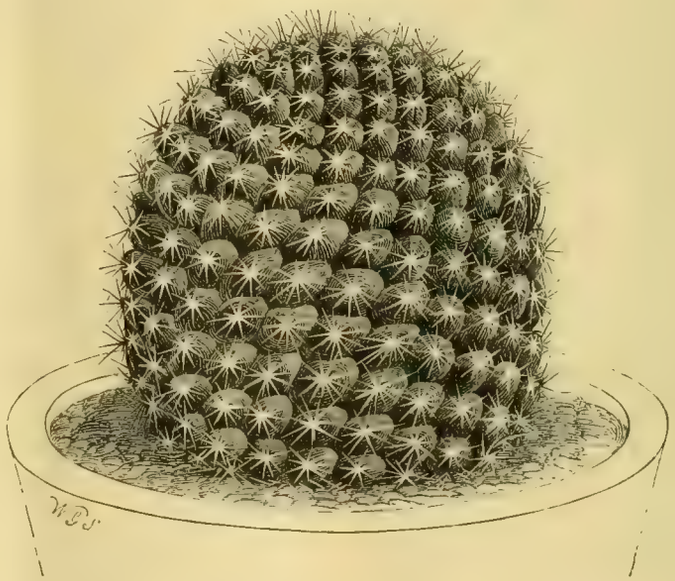


Fig. 26.—A hardy echinocactus, E. simpsoni. (see p. 161.)

THE ORCHID HOUSES.

The Cattleya House.—The earliest growths of Cattleya Trianæ will be fast maturing. Care must be taken to secure them by putting slings of soft bast round those and the old pseudobulbs. It is better to do this than crowd a quantity of stakes into the pots to break numbers of the roots, evil consequences of which being out of sight they are not at once noticed. Lælias of the L. E. Turnerii and Prasiata sections now finishing their growth for the season and sending up their flower-spikes are fine plants in late summer and autumn, and they are also plants of strong constitution; they grow freely with other Cattleyas, and in a compost of three parts peat and one of sphagnum moss. A good supply of water should be afforded them the whole year, any stinting of water causing loss of colour in the leaves. Another good Cattleya to flower at this season is C. bicolor, one of the freest growing of Cattleyas, but one which, if allowed to become dry even in its resting season, will shrivel badly, and the young growths that follow will not be so large as the previous ones. Cattleya Skinneri which may be backward in growth will be benefited by being placed in a warm stove, as it finishes its growth earlier in strong heat and much moisture, and thus secures a long rest, itself of great advantage, the flowers of Cattleya Skinneri being rather difficult to get up, unless the plants are well matured. With a change to warmer weather a freer circulation of air should be afforded this house, or the skin of the new-made pseudobulbs will be injured by damp, and unless the matter gets timely attention, rotting of the pseudobulbs will result. The temperature of this house should not be allowed to fall below 68° at night, with air at the top and the bottom. *A. G. Catt, Parkfield Gardens, Hallow.*

used at the rate of 1 oz. to a gallon of water. As soon as rooted in a little bottom-heat, remove the cuttings to cooler quarters, and ventilate liberally. Keep the plants slowly growing, and finally pot them in 12 or 14-inch pots, and give the house sufficient fire-heat to keep the atmosphere buoyant, 55° to 60° at night. Mid-season plants in full bearing, if growing in small borders, should receive manure-water, and a rich mulch. Thin out the laterals severely, and reduce the size of some of the leaves periodically, so as to admit direct sunlight to the fruits. Some growers for market cut the fruit when it is half ripe, and place it on shelves to finish colouring, with the view of relieving the plants—a practice which cannot be commended, seeing that fruits thus treated are poor in flavour, and sometimes even they are sour and unwholesome.

Figs.—Trees from which a second crop has been gathered must be kept cool, and their wood, by full exposure to sunlight, ripened thoroughly. Red spider on the leaves may be kept from doing much harm by an occasional syringing. Less water will be required as the wood ripens; but it should never be quite withheld. Where the fruits are ripening the atmosphere should be kept comparatively dry, and the ventilation sufficient, or the fruits will be insipid. Later trees swelling off their fruit will require manure-water at the root occasionally, and a growing atmos-

phere maintained, syringing frequently being necessary to keep the foliage healthy.

Strawberries.—All plants intended for forcing should now be in their fruiting-pots, and must be well attended to with water, and occasionally weak liquid-manure—the great point being to secure well-ripened single crowns and plenty of white roots. Do not crowd the plants together, but place them at wider distances apart from time to time. If they root through the hole in the pot, shifting the pots will prevent the roots descending into the cinder-bed. Some varieties are more prone than others to form branching crowns, notably Vicomtesse Hericart de Thury, which may partly account for its generally small fruits; while La Grosse Sucrée seldom makes more than a single crown. All side growths should be removed with the end of a budding-knife as soon as noticed. In dry weather the plants will be benefited by a good syringing overhead just about sunset, but beware of watering the foliage during bright sunshine, or pouring liquid manure over the crowns at any time—a practice that will kill the plants if persisted in. House sewage is an excellent stimulant for Strawberries, and by its use good, stout crowns are built up. *W. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

Orchard Trees.—The young shoots of such Apples as are not required to form the head should be cut in, and weak ones removed entirely. The fruit trees of all kinds are making strong growth on account of the poorness of the crop of fruits, and the grossest shoots should be stopped by having the soft tips cut off. The gathering of early varieties of the Apple should now be done, but not before the pips are matured, for if gathered too early the fruits shrivel. On the other hand if left on the trees too long some varieties instead of having crisp flesh become mealy. Striped Juneating is the first to come in. I gathered a few on the 1st inst., then Early Harvest, Irish Peach, and Oslin, all of which are good dessert fruits. Look over all kinds of grafted fruits and support the young shoots wherever necessary, loosening the bandages where the scions are growing fast. Bud Plums and other stone fruits when well developed buds are obtainable. In the case of weak-growing varieties of Plums, such as the Mirabelle, it is better to allow the stock to grow up, and bud it when at standard height. In budding, care must be taken that wood-buds and not blossom-buds are chosen. Currants are sometimes grown in the orchard as standards, with stems 3 feet high, and the heads not allowed to become very large, but just so that they may be readily covered with nets, and, for late use, with mats.

Peach and Nectarine Trees.—Stop all the strong shoots, and neatly train in all shoots. The rains of June and July thoroughly soaked the borders, and the trees are making healthy growth that is free from insects, and the fruits promise to ripen well. Late Peaches may be syringed with water at a temperature of 80° on the mornings of fine days, and watered at the root with tepid water, two operations which tell advantageously on the size and quality of the fruit. In late districts spare lights may be placed in front of trees of late varieties, if it is suspected that fruit ripening will be unduly late. *A. Evans, Lythe Hill, Haslemere.*



Fig. 27.—Echinocactus cylindraceus. (see p. 161.)

Double Clarkia.—We have received from Messrs. J. Carter & Co., Seedsmen, High Holborn, London, a new variety of Clarkia, with double mauve and white flowers. The habit is compact, and the plant one that is likely to make a good subject for pots or beds.

Home Correspondence.

THE FRUIT CROPS AT HOME.—The general complaints about the poverty of fruit crops which appeared in the last issue of the *Gardeners' Chronicle* show how greatly dependent we are as fruit growers on the weather, for notwithstanding the very general use of protective means in regard to wall trees and bushes and espaliers, crops are returned as meagre or none at all, the lack of sunshine last year being the cause of fruitlessness. Bearing in mind that much of this misfortune befalls those trees which were infested with caterpillars last year, and made midsummer growth (the earlier being destroyed), and which ripened imperfectly, and consequently with imperfectly formed flowers, it is no wonder that the trees which looked like sheets of snow in the spring failed to set much fruit. In case we may get such another season, we should pay close attention to stopping rampant shoots, and cutting out weak unfruitful shoots so as to let sunlight into the trees, an aid to proper ripening of the wood. *A. Evans.*

LICHENS.—It must have often struck visitors to the Scilly Isles why no great novelist had ever made these islands the scene and background for his characters, as Brett and Hamilton MacCallum have done for some of their finest pictures. This has now been done by Mr. Besant, and the picture he presents is so accurate, appreciative, and faithful, that any reader of *Armorel of Lyonesse* will not lose a chance of betaking himself thither. Anyone interested in horticulture should certainly not lose an opportunity, and also anyone who cares about or collects Lichens. The way in which they girt, and feather, and channel the weather-worn rocks there is full of wonder. George Eliot, who stayed in the islands some time with Mr. Lewis, writes in her life that she has never seen rocks so splendidly coloured elsewhere. Indeed, Ruskin's words that "the chief use of Lichens is for silver and gold colour on rocks, while the black moss gives the precious Velasquez touches," are proved to demonstration. Some of the finest Lichen-covered rocks are situated in the smaller, seldom visited islands, such as St. Helen's, and a little islet between that and Tresco. It makes one agree with a great deal of what Ruskin declaims at in botany to have to remember the lengthy, dissonant scientific names given to the Lichens. The other day, I came across on a sandy heath a little cupped fellow, so like those drawn by Dick Doyle, that I straightway dubbed it the "Pixie's Cup," and have been since so pleased with the conceit (to use the word in its old sense), that I have since refused to look out its real name. *C. A. M. Carmichael.*

THE OWL.—I was pleased to see that some one had put in a plea for this bird on the score of its usefulness to the agriculturist. It is, I fear, but little known and appreciated by him. As one of their best friends, I am grieved to hear of their destruction, which should be treated as a crime, if it were not for mere ignorance that they are destroyed. We hear much of the plague of rats and mice, and is it to be wondered at when agriculturists and others—game-keepers especially—destroy their friends to preserve enemies? The weasel, stoat, pole-cat, magpie, jay, cuckoo, and the owl are all friendly to the farmer, and others. Now, I have never killed any of these creatures. They are, I am aware, accused of doing many things they never do, like innocent persons condemned for other's deeds. Now in reference to the bird I am writing of, I can affirm its goodness. When young I had two young ones which were taken out of a church tower, given to me, and I kept them for some years. There were, I believe, two or three more lesser ones, and some eggs, which, I believe, is not uncommon. Now I must state what presented itself to view—upwards of 100 mice, rabbits, and squirrels surrounded the young ones, showing what destruction a few of these birds would wage amongst the farmer's worst enemies if allowed to do so. These were not the white owl. I don't believe they ever touch a bird, to destroy it. I used to keep a number of fancy pigeons in a place close to where these owls were about; they never touched any of them, although they could have easily done so. Perhaps if we ever got overrun with rats, mice, and rabbits, and had to procure ferrets for their destruction, we might think very differently to what we do now. I hope my readers will remember the feathered friends we have and be more careful of their protection in the future, and then I think our enemies will decrease in numbers, and our friends receive the favour and protection they well deserve. *J. S. C.*

THE GARDENERS' ORPHAN FUND.—It must have been very gratifying to the managers of the Gardeners' Orphan Fund to have been able to place on the funds the whole of the seventeen candidates. I hope it will be an inducement to all gardeners who are not members to become so at once. I am only a 5*s.* annual subscriber myself, but if every gardener would do the same they would never miss the money, while it would be of very great benefit to the few. The point mentioned by Mr. Rust, viz., fair play and no favour (though the very mention of such a thing in connection with such large-hearted men as the managers of the Gardeners' Orphan Fund grates on my, mind) receives additional proof in my own experience. I gave my vote to a North Country boy, and he was elected, but I do not know how many votes there were to spare—sufficient for me that he was elected, and it was a first application. I mention this simply to help to show forth how impartially the Fund is managed, and also to help to dispel any feelings of distrust that may lurk in the minds of those who live in remote parts of the country. *J. Heath, Sedgwick, Kendal.*

—— I was very pleased to notice Mr. Rust's remarks about the above Fund in last week's issue of the *Gardeners' Chronicle*, and can assure my brother gardeners in England that we feel here, in Ireland, just as keen an interest in the well-being of the Orphan Fund as our friends across the Irish Channel. I have resided in this country for almost ten years, and in that part of it which Mr. Rust terms the obscure north of Ireland. We have in Ulster some very fine gardens, and many gardeners of the good old school; the gardens in the majority of the places comparing very favourably with gardens in other parts of the British Isles. Should any of your correspondents choose the north of Ireland for their holiday trip and call on me or my gardening friends, they shall receive a hearty welcome, and will obtain glimpses of scenery that is hardly surpassed in these islands. *F. Prince, Dartrey Castle, co. Monaghan.*

THE CELERY FLY.—The larvæ of the Celery fly, Tephrites onopordinis, in some seasons do much mischief to Celery, and I have found the fresh-tarred twine stretched along the rows a great preventive, as many of the flies stick on to it. When Celery is infested with the larvæ, the leaves become blistered and turn yellow, and as the grubs are underneath the skin of the leaf, it is best to crush them between the thumb and finger. The grubs, when fully grown, descend into the earth and turn into chrysalids, and remain in that state until the following spring, when the fly appears, which in due course deposits its eggs on the leaves. To lessen the numbers, all badly infested leaves should be cut off and burnt. When our plants were badly infested three years ago I made a solution with 24 gal. of water, 1 lb. of Gishurst-compound soap, 1 lb. of alum, and 1 lb. of soft-soap. After standing some twenty hours this mixture was applied with a fine-rose watering-can. The plants were examined soon afterwards, and the leaf-mining grubs were found to be dead. A later crop of Celery was similarly treated, and with the same result. If the weather be showery when this remedy has to be employed, 4 gal. less water may be put with the ingredients. *A. Evans, Lythe Hill.*

EARLY PEACHES.—In your issue for July 26, p. 105, Mr. T. Woodham Mott states that he gathered two ripe fruits of Alexander Peach on July 20. As showing the earliness of another variety, I may mention that I gathered six ripe fruits of Hale's Early Peach on July 19, from a tree on an outside wall, and have gathered a dish of the same variety every day since that time. *S. Haines, Coleshill House, Highworth.*

—— The fruits of Waterloo, Alexander, and Amsden growing side by side, ripened July 20, and were of a larger size than usual, notwithstanding the fact of the first-named kind being heavily cropped. I find very little, if any, difference in the colour of these fruits, but the Amsden is the smallest and sweetest, and Waterloo always grows larger than Alexander, and while these two varieties resemble each other, the leaves of the Waterloo have deeply cut or kidney-shaped glands, Alexander has round glands generally, though they are sometimes slightly kidney shape. Hale's Early is fully a fortnight to three weeks later to ripen than these three varieties, and Rivers' Early York, both of which seldom fail to crop well, are passable for size and good flavour. One thing I must mention as regards the first three Peaches named is that I always find them to be of much better flavour if gathered a few days before they are ripe, and placed in a cool airy place to finish, for if the fruit is left on the tree it becomes woolly and dry, and not unfrequently it will crack at the point. *H. Markham.*

—— A correspondent in your issue of last week asks if July 20 is not early for gathering Peaches out of doors; comparatively speaking it is so, although I picked four fruits of the Alexander Peach on the 17th of that month. I remember gathering this kind under glass a year or two ago, on April 26. It is a variety not very generally met with in early houses; one reason being that there is no trustworthy variety to succeed it for nearly a month, and then there is felt one of the evils of having Peaches growing in one house and ripening at wide intervals of time. An abundance of air becomes necessary for the ripening crop, and a warm moist atmosphere for the well-being of the other trees. *G. Claydon, Holbecks Park.*

DRACÆNA AUSTRALIS, LILIES, ETC., IN YORKSHIRE.—In reference to a recent paragraph in the *Gardeners' Chronicle*, I may state that we have here, in the West Riding of Yorkshire, a fine specimen of Dracæna australis now in flower. The plant, which is about 11 feet high, stands in the hard gravel walk in front of the conservatory, and has remained out for many winters without any kind of protection. About eight years ago a Dracæna of this kind both flowered and brought its seed to perfection at North Deighton Manor, two miles from here. We have now in bloom in a narrow border in front of the hot-houses the Belladonna Lily (Amaryllis belladonna). Last year we flowered the scarlet Jacobean Lily (Amaryllis formosissima). This year I have tried the Ixias, mixed sorts, but they have not done well. *T. Jones, Ribston Hall Gardens, Wetherby.*

TUBEROUS-ROOTED BEGONIAS.—Special attention should be paid to a fine lot of double-flowered varieties which are in the possession of M. Louis van Houtte, Ghent, and which I saw quite recently. The plants are dwarfer than it is usual to find them, and the flowers in size and colour unsurpassed. *R. Gülzow, Bexley.*

LARGE FRUITS OF PEACHES.—In your issue of June 21 I observed that Peaches weighing half a pound each were grown at Mereworth Castle, Kent. At Ellary, Argyleshire, where the peachery was under my charge, some fruits were gathered which turned the scale at 11¼ oz, the average weight of a fruit being 9 oz. The one which I now send is a very fine fruit, but it is a variety which I do not know by name. *W. Mauchline, Ellary, Ardrishaig, N.B.* [The fruit had been a very fine specimen, but it was badly decayed, and could not be identified. Ed.]

PEAR CITRON DES CARMES.—Of this Pear, the earliest that I am acquainted with, we have a tree here planted on a south wall, and fan-trained, which bore a good crop of medium-sized fruits, which were ripe at the middle of July. It is a fruit requiring to be eaten as soon as ripe. The tree with us is a very good grower in the yellow loam of the garden, which is 2½ feet deep, and rests on 9 inches of drainage laid on above the highest point reached by the water. *H. W. Ward.*

TROPICAL PRODUCTS IN QUEENSLAND, NATAL, &C.—With reference to the inquiries of your correspondent "N. Z.," I know of several planters who, nearly ruined through the Coffee-leaf disease, emigrated from Ceylon to Queensland in the hope of retrieving their fortunes, but they found the labour supply too deficient and expensive for practical purposes, although Coffee appeared to thrive fairly well. I also know a gentleman, an experienced Tea planter from Assam, and son of a well-known clergyman in Aberdeen, who started Tea culture in Natal, but gave it up as he found it did not pay; he told me the rainfall seldom exceeded 40 inches per annum. In the best Indian Tea districts the rainfall varies from 120 to over 300 inches per annum. Apart from the labour question, your correspondents would find New Zealand too cool for the profitable culture of the products he mentions. The labour question is a very serious one, as he would have to compete with the Ceylon and Indian coolies, who barely earn sixpence per day.

Cinchona has had its day for the present, and there are thousands of acres of mature trees in South India waiting to be cut whenever the market shows a favourable opportunity, which is not likely at present with sulphate of quinine at 1*s.* 6*d.* and 2*s.* per ounce. The *Tropical Agriculturist*, published in Ceylon, is by far the most reliable work on all matters connected with tropical planting. I have seen it advertised in your columns occasionally, notably on the back of the current year's Almanac. If "N. Z." is a novice in tropical planting, as he appears to be, I shall be happy to forward him full details on Tea, Coffee, and Cinchona planting. *S. S.*

JUSTICIA CARNEA ROSEA.—This good old plant should not be omitted from any collection of stove plants, its period of bloom extending nearly all the year round. Usually classed as a stove plant, it will grow in any greenhouse or conservatory during the summer, if, as soon as it has done blooming, it is removed to a house having a little heat, where it can make fresh wood and recommence to bloom. By this kind of treatment it can be got to flower every three months. This Justicia will flower in small pots or large, and in the latter it can be obtained of a large size if the shoots are stopped regularly, and the plant kept in a growing condition. Cuttings of young wood strike easily if put in any light sandy mould and placed in bottom-heat under a case or a handlight, or in a close frame; when rooted, they should be potted off without delay in light loamy soil, and kept in heat, where they soon make nice plants, and afford quantities of spikes of beautiful pink flowers. *Wm. Smythe, Basing Park, Alton, Hants.*

SOCIETIES.

ROYAL HORTICULTURAL.

The Floral Committee met at the Society's Gardens, Chiswick, on July 22. Present: W. Marshall, Esq., in the chair, and Messrs. Hibberd, Lowe, Druery, Walker, Herbst, Nicholson, Baines, Leach, Dean, Goldring, Paul, and Holmes. The Committee inspected the collections of Carnations, Picotees, Stocks, and Pansies growing in the gardens, when the following awards were made. *** Equivalent to First-class Certificate; ** to Award of Merit:—

Carnation ***Juliette (R.H.S.), bright rosy-purple self.
" " Mrs. Frank Watts (Ware), white self.
" " Juno (Turner) rose self.
" " Snowdrift (Fisher, Son, & Sibray), white self.
" " Horace (Dan), scarlet self.
" " Maggie Laurie (Dicksons & Co.), delicate blush self.
" " Caledonia (Dicksons & Co.), bright purple.
" " The Moor (Dean), dark crimson.
" " Rowena (Dean), bright scarlet.
" " Clown (Dodwell), yellow ground.
" " Oxonian (Dodwell), salmon self.
" ** Beatrice (Fisher, Son, & Sibray), buff self.
" " Fair Maid (Dean), blush.
Picotee " Romeo (Paul & Son).
" " Augusta "
" " Pica "
" " B. J. Bryant (R.H.S.).
" " Favourite (Turner).
Pansy ***The Bride (Dobbie), creamy-white, edged blue.
" " Duchess of Fife (Dobbie), orange, edged bronze.
" " Neptune (Dobbie), dark purple, top petals pale.
" ** Duchess of Sutherland (Dobbie), pale lavender.
" " Marchioness of Tweeddale (Dobbie), pure white.
Stocks ***Large Ten Week (Putz), brilliant rose.
" " Large Ten Week (Putz), purple.
" " Large Ten Week (Putz), white.
" " Large Ten Week (Putz), sulphur-yellow.
" " Dwarf Ten Week (Putz), lilac.

Fruit and Vegetable Committee.

Present: T. F. Rivers, Esq., in the chair; and Messrs. Cheal, Crowley, P. Veitch, Balderson, Warren, Wythes, and Hudson. The committee inspected the collections of Peas growing in the gardens, and made the following awards of merit:—The Daisy (James Carter & Co.), a dwarf wrinkled Marrow; Boston Hero (G. Bunyard & Co.), a tall white wrinkled Marrow; Ambassador (H. Eckford), a tall green wrinkled Marrow.

The Floral Committee, on July 31, again inspected the collections of Carnations and Picotees, also the Pelargoniums, growing in the gardens, and made the following awards:—

Picotee ***grandiflora (Veitch), deep rose.
" " Atalanta (Dodwell), yellow ground.
" " Diana (Dodwell), white self.
" " Ariel (Dodwell), yellow.
" " Andromeda (Dodwell), terra cotta flaked.
" **Grosken (Veitch), purple edge.
" " Alfred Grey (Dodwell), yellow ground.
" ***Alice Ayres (Veitch-Ware), white, slightly streaked.
" " Agnes Chambers (Turner), yellow ground, lilac edge.
" " Colonial Beauty (Turner), terra cotta, streaked.
" " Dorothy (Turner), terra cotta.
" " Admiration (Veitch), dark purple edge.
Carnation ***Gloire de Nancy (Veitch), white, large.
" " Mrs. Reynolds Hole (Veitch), terra cotta.
" " Germania (Veitch-Benary), yellow.
" " Raby Castle (Turner-Veitch), rose-pink, fine constitution.
" " Guiding Star (Ware), scarlet self.
" " Will Threlfall (Paul), bright yellow.
" " Edith (Fisher, Son & Sibray), pale pink, spotted scarlet.
" " Canary (Fisher, Son & Sibray), pale yellow.
" " Comtesse de Paris (Paul), pale blush.
" " Penelope (Hooper), white self.
" " Merlin (Lakin), deep crimson.
" " Boadicea (Douglas), purple-flaked.
" " Caractacus (Douglas), crimson bizarre.
" " Fireball (Benary), deep scarlet self.
" " Mirakel von Zirbst (Benary), very dark crimson.
" " Albrecht Duesser (Benary), deep rose, crimson flake.
" " Orestes (R.H.S.), pale rose.
" " Countess of Ellesmere (R.H.S.), pale flesh, spotted with crimson.
" " Scarlet Premier (Storrie), scarlet self.
" " Rose Celestial (Turner), rose self.
" " Hypatia (Paul), white self.
Double-flowered Ivy-leaved Pelargoniums—
" ***De Quatrefages (Lemoine), violet-magenta.
" " Souvenir de Charles Turner, flowers of a deep pink shade.
" " Galilee, No. 1, soft lilac.
" " " No. 2, soft rosy-pink.
" " Madame Thibaut, deep pink.
" " Le Printemps, rosy-pink.
" " Comtesse Horace de Choiseul, satiny-rose.
" " Gloire d'Orleans, bright pink.
Single-flowered, Ivy-leaved—
" ***Gem, blush white.
" " Mrs. H. Cannell, deep mauve-purple.
Zonals ***Charles Mason (Pearson), fine scarlet, of good habit.
" " Mons. Poirer (Lemoine), flowers of a beautiful purplish shade, of good habit of growth.
Stock, Large-flowering Ten Week—
" **Aurora (Putz).
Fuchsia " Dunrobin Bedder (Melville), seedling from F. Riccartoni, a dwarf, free-flowering, bedding variety.
Mimulus " Moschatus compactus (Putz), of dwarf, even growth, free-flowering, and useful for edging purposes.

WARWICK AMATEURS AND COTTAGERS' HORTICULTURAL.

July 30.—The annual exhibition of this Society took place in the grounds of Warwick Castle by permission of Lord Warwick. A more beautiful and inviting spot in which to hold a flower show could scarcely be imagined. It is only *bonâ fide* amateurs (one who does not employ a regular gardener, but who may have occasional help), cottagers, and allotment holders who are allowed to compete, and the result is an exhibition of considerable magnitude, and of high quality. Contributions of plants were sent by Mr. Kitley, from the Castle Gardens; by Mr. R. Greenfield, of the Priory Gardens, and others; while contributions in the form of groups, &c., were also sent in. Foremost among these were some boxes of very fine cut Roses, and a beautiful bouquet, presented to Lady Brooke, who distributed the prizes to the successful exhibitors. From Messrs. Perkins & Sons, Coventry, an interesting collection of Peas; from Messrs. E. Webb & Sons, Stourbridge, a large collection of fruit plants, and cut flowers from Mr. C. Wilson, Warwick; from Mr. W. Astell, Portland Road, Leamington, a fine collection of Begonias; from Mr. W. B. Child, florist, Warwick, cut flowers, &c.; from Mr. John Kitley, Castle Gardens, Grapes and cut flowers; from Mr. J. Horne, Warwick, cut flowers, Tomatos, &c.; and two boxes of cut blooms of superb Roses, from Messrs. Dicksons (Limited), Chester. In connection with the show was an industrial exhibition of needlework, &c.

BEDDINGTON, CARSHALTON AND WALLINGTON.

The first exhibition of this newly-formed Society took place on Monday, August 4, in the grounds of Beddington Park, by permission of Canon Bridges, and there was an especially good competition for vegetables amongst the cottagers of the district. Wild flowers were shown in abundance and beautiful variety by children—the surrounding districts appearing to offer good facilities for gathering wild flowers. Good groups of plants, etc., not for competition, which added to the attractions of the show, were shown by Mr. G. W. Cummins, gr. to A. H. Smee, Esq.; Messrs. John Peed & Sons, Roupell Park Nurseries; Mr. J. King, Florist, Wallington; Mr. Glover, gr. to E. Ellis, Esq., Wallington, and Mr. J. Thackray, Oxford Road, Wallington. It being a Bank Holiday the show was very well attended, and the success achieved will induce the committee to extend their list of prizes another year so as to encourage competition amongst the gardeners of the neighbourhood.

ST. NEOT'S HORTICULTURAL.

August 4.—The exhibition of this Society was held in the grounds of Priory Park, in the Huntingdon Road, and was an attractive one, though the entries were not so numerous as usual. With his usual good fortune, Mr. Redman, gr. to G. H. Goodgames, Esq., Eynesbury, St. Neot's, was the leading exhibitor of plants, being closely followed by Mr. Smith, gr. to Miss Cheeve, Papworth Hall, St. Ives. Some very good stove and greenhouse and foliaged plants were staged, and the tuberous-rooted Begonias were very fine—here, as at other flower shows, a greatly improving feature.

Cut flowers were well shown by Mr. B. Lindsell, Hitchin, a very successful amateur, this season his blooms being excellent. He took the 1st prizes in all the classes in which he exhibited.

Bunches of hardy cut flowers were a great feature, fine and striking bunches of good subjects being staged by Messrs. Wood & Hunt, of Gortford, and J. Henson, of Sandy. Bunches of half-hardy annuals were an interesting feature, and some of the best-coloured and finished blooms of African Marigolds we have seen for a long time were to be seen.

Fruit was sparingly shown, but there were some remarkably good vegetables; and farmers' and market garden produce was in plenty, and generally of good quality.

THE CARNATION AND PICOTEE UNION.

The annual exhibition of the above took place in Mr. E. S. Dodwell's garden in the Stanley Road, Oxford, on the 5th inst., the flowers being numerously produced and very fine; indeed the superb quality of many of the blooms came as a great surprise. A much larger tent than usual had been provided by Mr. Dodwell, and a smaller one for the table decorations; even then additional tabling had to be provided. The Exhibition during the afternoon was visited by large numbers. The usual luncheon took place in the afternoon, Mr. Alderman Buckell in the chair, and a large number of ladies were also present.

Carnations, Flakes, and Bizarres.—In the class for twelve dissimilar varieties there were nine competitors,

Mr. Martin Rowan, Manor Street, Clapham; Mr. Read, Stanley Road, Oxford; and Messrs. Thomson & Co., Birmingham, being respectively 1, 2, and 3, other prizes of lesser merit being likewise accorded. For 6 dissimilar blooms the competitors were numerous. Mr. Tom Lord was 1st, Mr. J. S. Hedderly 2nd, and S. Barlow, Esq, Stake Hills, Manchester, 3rd. In the class for twelve Carnations, Picotee-edged, the competition was heavy, and the quality of the flowers good. 1, Rev. E. Brunneth; 2, Mr. K. Sydenham, Birmingham. Mr. A. W. Jones took the 1st prize for six blooms, twenty stands being shown, and competition severe.

The best single bloom was shown by Messrs. Thomson & Co., and the 2nd best by Mr. W. Read, Mr. G. Chaundy getting the 3rd for a seedling. Mr. Rowan was 1st and 2nd in the Crimson Bizarre class, and Mr. Lord and Mr. Sydenham in that for Purple Bizarres. Mr. Rowan was 1st and 2nd for Purple Flakes, and he was 1st for Scarlet Flakes.

Selfs, fancies, and yellow grounds.—It is impossible to praise too highly the many beautiful varieties of almost all shades of colour shown under this heading. Some were brilliant in the extreme, others soft and delicate, with many intermediate tints. The best stand of twelve blooms came from Mr. Read; 2nd, Mr. G. Chaundy; 3rd, Mr. R. Sydenham.

Mr. Tom Lord had the best six blooms out of a number of competing stands.

Specimen blooms of Picotees.—The winners in the various classes were Messrs. Rowan, A. W. Jones, G. Chaundy, Messrs. Thomson & Co., R. Sydenham, and W. L. Walker. The premier bizarre or flaked bloom was S.B.C.H. Herbert, shown by Messrs. Thomson & Co. The premier Picotee was Heavy Rose-edge Little Phil, shown by Mr. Read. The premier Self was Germania, shown by Mr. F. Nutt: the premier Fancy was Dodwell's 167; and the premier Yellow ground was Patricia, shown by Mr. Read.

NORTHAMPTONSHIRE HORTICULTURAL.

August 4, 5.—The annual exhibition this year was held in the Park of Delapré Abbey by permission of J. A. S. Bouverie, Esq. A better spot for a flower show could hardly be chosen, the weather was all that one could desire, and this year's meeting proved a great success. The inhabitants of Northampton testified their appreciation of the attractions provided for them by thronging the show tent in thousands. Mr. Cypher, of Cheltenham, took the lead, winning easily with a grand lot of plants in the class for twelve Stove and Greenhouse (six in flower and six fine foliage). His best flowering plants were Ixora salicifolia, with some fifty fine trusses of bloom in the best possible condition; I. regina; Statice profusa, very bright and fresh; two good Ericas, Irbyana and Austiniana, the latter in fine condition; the best for foliage plants were Cordyline indivisa, a magnificent specimen; Crotons, Queen Victoria and angustifolius, the latter a very beautiful plant, and two large Palms and a Cycad. Mr. Finch, gr. to J. Marriott, Esq., Coventry, was 2nd, his best being Erica Lindleyana, a very fine, fresh plant; a good Stephanotis floribunda and Sobralia macrantha, both well flowered; his best foliaged plants consisted of Croton Mortii and two good Palms.

Six Stove and Greenhouse plants, three to be in flower.—Mr. Sainsbury, gr. to C. Watkin, Esq., was awarded the 1st prize, showing Encephalartos Vroomii, a noble specimen well furnished with foliage, and Ixora Duffii. Mr. Finch was well ahead in the Open Class for a group covering 240 square feet, well arranged, facing all sides, which has a far better effect than one-sided groups. In another class of groups of the above size, Mr. Holland, gr. to W. Jeffery, Esq., Northampton, was 1st with a lightly arranged lot of plants; Mr. Martin, gr. to H. W. East, Esq., being a good 2nd, but was lacking plants that gave good effects. Mr. Dovey, gr. to Mrs. Simson, Broom Hill, showed both single and double-flowered varieties of Zonal Pelargoniums, remarkably well-flowered and with little artificial training. He was deservedly placed 1st in each class. Mr. Holland was 1st with medium-sized examples of table plants in healthy condition. Cut flowers were staged in quantity, and in most cases they were fresh and bright-looking; but in the case of Roses only particularly so. Messrs. Perkins & Son, Coventry, 1st for a box of twenty-four blooms of Roses; Mr. Bennett, gr. to Rev. W. H. Jackson, Stagsden Vicarage, Bedford, taking 2nd, with fresh examples, and 1st for a good box of twelve Teas, he being followed by Messrs. John Perkins & Son, Kingsthorpe Nursery. The Coventry firm of the same name were 1st with a Bouquet, in this instance somewhat bolder than usual, and with fewer colours—the blooms of Pancratium and Oncidium macranthum predominating. Hardy herbaceous flowers were shown well, and consisted of the best things in season, Mr. Bennett taking the 1st prize, Echinops Retro and Eryngium amethystinum being the most striking flowers.

Fruit, although not shown in great quantity, was of general excellence throughout; particularly the collections respectively from Mr. Cole, gr. to Rt. Hon. Earl Spencer, Althorp, the Muscat of Alexandria Grapes being well finished; Black Hamburgh, Figs, and Peaches, were very fine and good. In the class for white Grapes the same exhibitor was easily 1st with three good and well-coloured bunches of Muscats. Mr. Tims, gr. to W. H. Foster, Esq., Spratton Grange, was 1st with black Grapes, staging Hamburgh, slightly lacking colour, but of good size. Mr. Reeve, gr. to W. Coulson, Esq., Cliftonville, was 2nd in both of the foregoing classes, with Foster's Seedling and Hamburgh. Mr. Cole was 1st for Peaches and Nectarines.

Vegetables of excellent quality were staged, and the first prize in the two big classes was awarded to Mr. J. Underwood, gr. Delapré Abbey, with very even collections; in that for Messrs. Sutton's special prizes he showed very superior Sutton's Perfection Tomatos, Scarlet Runner Beans and Sutton's Gem Carrots. In his other winning collection the Abundance Potato and "Queen" Peas were alike good. In a smaller collection of dishes, Mr. Collins of Berry Wood, stood first amongst several exhibitors. Potatos were shown in remarkably good condition, and the prizes were well contested in each case of the four classes. Non-competing exhibits were staged in a liberal manner by local growers. Mr. Fyfe, gr. to Rt. Hon. Lord Wantage, Overstone, put up Lockie's Perfection Cucumber, a very even sample; Dwarf Champion Tomato, similar to Acme but said to be superior in flavour and of better habit, and Autocrat Peas (Veitch) with medium-sized pods of a dark green colour; this was a good exhibit. Messrs. John Perkins & Son, Billing Road Nurseries, Northampton, had a large number of very finely grown Tuberous Begonias; Rose blooms, Phloxes and Pentstemons. Messrs. John Perkins & Son, Kingsthorpe Nurseries, were strong in flowers of hardy herbaceous plants and Begonias. Messrs. Denton and Blunden showed well-ripened fine fruits of Trophy Tomato. *J. H.*

THE ABBEY PARK FLOWER SHOW, LEICESTER.

August 6.—This, the fifth annual flower show promoted by the Parks Committee of the Leicester Corporation, was held on the above date in the Abbey Park, and proved the most successful one yet held. The weather was beautifully fine, and the number of visitors enormous.

The exhibits filled five large tents, one, an immense circular tent, being devoted to groups of plants arranged for effect, which were set up in a semi-circular form of 100 square feet each, amongst them a handsome group of foliage and flowering plants, not for competition, sent by Messrs. B. S. Williams & Son, Holloway, London. The competing groups were very similar in arrangement and composition, being massive and brightly coloured, too closely packed, and lacking in much of the artistic arrangement seen in groups in London and at Manchester. The prizes were awarded as follows:—1st, Mr. W. Billson, Barkby; 2nd, Mr. Barry, gr. to H. Snow, Esq., Stoneygate, Leicester; 3rd, Mr. J. Mawley, florist, Leicester. A number of specimen Fuchsias, zonal Geraniums, and Coleus, were also very well shown in this tent by local exhibitors.

The adjoining tent—a very large one—was devoted to cut flowers, and in this there was a very fine display. The whole tent was not, however, exclusively given to cut flowers, as upon the centre table Mr. F. Sander, of St. Albans, had a fine display of Orchids, amongst which were some very fine forms of Cattleya aurea, Gaskelliana, and Sanderiana. Numerous Dendrobiums, Odontoglossums, Oncidiums, Disas, &c., were noted. One side of the tent was occupied by boxes of cut Roses—a grand display, Messrs. Harkness, of Bedale, securing the 1st prizes in most of the classes, and were closely followed by Messrs. Cocker, of Aberdeen; Merryweather, of Nottingham; Perkins, of Coventry; and the Rev. Pemberton, of Havering—a special prize offered by the Mayor of Leicester for the best Rose bloom being secured by Mr. Merryweather for a flower of Chas. Lefevre.

In the class for twelve blooms, any one variety, some good boxes of flowers were staged, Messrs. Harkness being placed 1st with Horace Vernet, and Mr. Merryweather 2nd with a fine stand of Her Majesty. On the opposite side of the tent there were displayed hardy herbaceous flowers and hardy annuals, always a strong feature at this show; also a quantity of fine roses, not for competition, from Messrs. Warner, Abbey Nurseries, Leicester; and tuberous Begonias from Mr. Davis, Yeovil Nurseries, Somerset.

The centre table, in addition to the group of Orchids above mentioned, and some fine cut flowers of tuberous Begonias from Messrs. J. Laing & Sons, Forest Hill, London, contained a display of ball-room and bridal bouquets, sprays, button-hole bouquets, and wreaths — Messrs. Perkins, of Coventry; Mr. P. Blair, Trentham Gardens; Messrs. Hewitt, of Birmingham; Thomson, of the same town; Pearson, of Chilwell; and Battenby, of Blaydon, being the chief prize-takers. Messrs. Pearson also had a fine stand of cut trusses of zonal Geraniums, consisting of new and unnamed seedlings. Another large tent was devoted to the open classes for fruit and vegetables.

The principal exhibitors in the several classes for collections of fruit, nine, six, and four dishes, were Mr. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, Derby; Mr. Edmonds, gr. to the Duke of St. Alban's, Bestwood, Notts; Mr. P. Blair, gr. to the Duke of Sutherland, Trentham, Staffs. The 1st prize in the two larger classes going to Mr. Goodacre, the other exhibitors above named following him very closely as 2nd and 3rd.

Grapes were extensively and well shown; the best examples were Black Hamburgh and Muscat of Alexandria varieties, superb in size of bunch, berry, and in finish, from Mr. A. McVinish, Lockington Hall Gardens, Derby. Mr. Lofley of South Knighton, Leicester, an amateur cultivator, also showed very fine examples of Black Hamburgh, and Mr. P. Blair had Duchess of Buccleuch in each of his collections, very fine in bunch and berry and well set, which elicited much admiration.

Peaches and Nectarines were well shown, superb examples coming from Mr. Divers, Ketton Hall Gardens, Stamford.

The classes for Melons, Pines, and most other kinds of fruit were well contested, and fine examples were staged generally. There was a good display of vegetables. One collection of twelve varieties shown by Mr. John Lambert, Onslow Hall Gardens, Shrewsbury, was exceedingly fine throughout.

Two other tents were well filled by local and amateur exhibitors, the merit of whose exhibits certainly deserved a more extended notice at our hands, but the crowding of the tents by visitors prevented such being done.

The show was most efficiently organised and arranged by the courteous Park Superintendent, Mr. John Burn. The meeting of the Fruit-growers' Association is alluded to in another column.

VARIORUM.

The "Ganja" Plant.—The progress of converting refuse into value is making great strides in our day. They are trying to utilise the Ganja plant for rope-fibre, after the extraction of the ganja. The sub-divisional officer of Nowgong has been in communication with the Agricultural Department and the Agri-Horticultural Society on the subject, but as yet to little purpose. The experiments show that the plants are enervated under encouragement to give out the drug, and simply exhausted after yielding it. The fibre of used-up Cannabis indica—popularly called Hemp—becomes weak and woody, and snaps easily. It is urged in extenuation that the curing, so to say, of the fibre was to blame. Perhaps, it occurs to us, the extraction, too, was not perfect. These causes may account for the failure; at any rate, the matter is worth a re-trial. It is implied in these experiments that good Hemp-plants in their integrity, unsubjected to special culture for the production of the drug, would yield proper fibre for good rope-making. There ought to be an explicit statement on the subject, or special experiments to test the point. Will the Agricultural Department conduct them? And if the experiments succeed, will the Publican Government allow the culture for

the purpose of the harmless industry of extracting rope-fibre? Besides, it seems to be already established that the fibre of the refuse plant—that is, the fibre of Hemp drained of the drug—is useful for paper-making. What prevents Government allowing such use? *Reis and Rayyet, Calcutta.*

Hard Names for Plants.—We are all delighted at the noble stand some folks are making at the abominably hard names which so many plants receive from those pedantic old chaps, the botanists. Several of my neighbours, fond of gardening—or perhaps I should say, more properly, horticulture—come to my house occasionally, and we talk most emphatically against the abominable nuisance. Mr. Poniatowski, who came originally from Varadjadagh, tells me they have the same warfare against the botanists in his land; and my other neighbours, Maillebois of Katzbach, and Khujeet Khang, say that in France, Germany, and even in Bombay, the same struggle against hard names is going on. Mr. Khujeet Khang, having been fed in early life on Kalo roots, a well-known plant of our gardens, is particularly violent when these hard names are mentioned. He is a famous dendrologist, arboriculturist, and sylviculturist, and is much worried when he gets a hard name for a tree. He contends that English, pure and undefiled, is good enough for all the world; far superior, in fact, to his own Asiatic mother tongue. "Observe," he remarked to me at our last meeting, "the obfuscation of the cephalic textural pigment in the pernicious eccentricity of consciousness, during the cerebral oscillations deflected under molecular depression, potentially and periodically evolved under the hypothesis presented by Hecatompybug, the celebrated læcanthropher, that the elucidation of metempsychosis approximates an anomalous complication involving an intermittent exacerbation with periodical collapse, during which the obvious corollary, so far as quantitative analysis develops in the elongated ellipsoid of the cranium in its tumid state, all tends to a paroxysm fatal to pure English." "Where," said he, with fixed fire in his eye, "can you find two who will agree to the exact pronunciation of Dahlia, Fuchsia, Clematis, and hosts of similar barbarous Latin designations?" "When," he said, "I stood on the littoral diabase of the amphitheatre in the archipelago where I could identify by the aid of petroleum in the fenestral alcoves of the castellated structures, in the period of my adolescence, as I did diurnally, nocturnally, tertianally, quotidianally, and continually; there was no Latin lingo to confuse the mind." The legumes and the follicles masticated by the heterogeneous population of his natal home need no Latin to properly engulph them. He firmly believed there would be no oidium among the French vignerons, only for Latin or Greek names. This was the primary and irremediable trouble, which needed no ophthalmoscope to discover. There was no fatiguing necromantic phantom obstructing this sensory operation. It seems to me, Mr. Editor, there is immobility in the facts he presents. Let us have good English, I say, and down with the hard unpronounceable pedantic Latin names. *Julius Rhowbotham.* P.S.—Please do not omit the *h* in the first syllable, as, though I am of English descent, our family was originally Greek. *American Garden.*

The White Rose. — This was the favourite flower of Mons. A. Dumas père, and an amusing story is told in connection with the famous story-teller's love for the flower. One day a stout gentleman, dressed in black, came in to him, carrying a fine bunch of white Roses, which he offered on the plea of being "un admirateur de votre génie." Before Dumas could say a word, the man had vanished. A month later *Monte Cristo* was out, and again the same visitor appeared with an enormous bouquet of white Roses. "Votre roman est un pur chef-d'œuvre," he said, put the Roses down, and vanished. Another fortnight passed, and *Antony* created a sensation on the stage. For the third time the man appeared with some magnificent white Roses for the dramatist, because "Votre drame est une merveille." "But who are you?" gasped Dumas, anxious not to let the mystery-man escape as before. "Oh, nobody; I am as obscure as you are illustrious," was the reply, "and my name is M. Auguste." After this the man was seen no more; but the sequel of the affair was explained three months later, when Dumas noticed above the shop of a Paris florist a signboard bearing the inscription—

AUGUSTE,
MARCHAND DE FLEURS.
Fournisseur particulier d'Alexandre Dumas.

"Que voulez-vous, dear master?" explained the owner of the shop. "I had been installed here for three years, and never made a penny, but since I have taken you on my signboard the guineas are rolling in." *Pall Mall Gazette.*

The Gray Memorial Botanical Chapter of the Agassiz Association was founded two and a half years ago, especially to aid those botanists who, remote from large libraries and herbaria, find their study often beset with difficulties which the more favoured *habitués* of school and college do not encounter. The design of this association, as stated in the constitution, is "mutual assistance in the study of botany by means of correspondence, and the exchange of specimens." Not the least of its benefits is the enthusiasm engendered, which isolated students do not always possess. Any lover of botany may become a member by making application to the President, stating briefly his progress in the study, and means for pursuing it, and thereupon receiving the unanimous consent of the executive council, which includes the officers and two directors elected annually. The annual fee is fifty cents, but amendments are now pending to make it one dollar. Members are required to report quarterly, either recounting their progress during that time, or describing some collecting trip, the flora of some region visited by them, or a plant studied. At present there are forty-five members in twenty-two states and territories. President, G. H. Hicks, Owosso, Michigan; secretary, E. L. Byington, Boulder, Colorado. *American Garden.*

The Weather.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending Aug. 2.	Accumulated. Above 42° for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	0 av.	92	0	+ 68	— 72	0 av.	152	28.5	19	25
2	1 +	109	0	— 49	— 58	2 —	129	17.3	26	30
3	2 +	132	0	— 12	— 93	1 —	108	12.9	34	28
4	1 —	138	0	— 55	— 39	3 —	114	14.8	29	35
5	0 av.	132	0	— 74	— 26	1 —	107	13.2	27	31
6	0 av.	138	0	— 57	— 68	3 —	108	16.6	31	33
7	0 av.	106	0	— 20	— 73	0 av.	131	28.6	31	31
8	1 —	119	0	0	— 81	1 —	123	18.3	29	29
9	2 —	121	0	— 61	+ 12	4 +	127	22.1	34	34
10	1 —	110	0	— 24	— 56	0 av.	143	18.4	28	31
11	1 —	116	0	— 12	— 15	1 —	138	24.6	25	32
12	0 av.	134	0	+ 36	— 22	1 +	129	20.9	62	40

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

The Past Week.

The following summary record of the weather for the week ending August 2, is furnished from the Meteorological Office:—

"The *weather* has continued rather showery and unsettled in the western and northern parts of the kingdom: Over the greater part of England, however, the fair conditions experienced during the previous week again prevailed generally, although at the close of the period rain occurred at nearly all stations with thunderstorms in the south.

"The *temperature* has been slightly above the mean in 'Scotland, E.,' and 'England, N.E.,' but in the other districts it has either just equalled or been a little below the normal. The highest of the maxima, which were recorded on August 1st. in England, and on irregular dates in Ireland and Scotland, ranged from 68° in 'Scotland N. and W.,' to 77° in 'England S.,' and the 'Channel Islands.' The lowest of the minima, which were registered at most stations on July 29th, varied from 43° in 'Scotland, N.,' to 49° in 'England N.E.' and 52° in the 'Channel Islands.'

"*Rainfall* has been rather more than the mean in 'England, S.W.,' and the 'Channel Islands,' and just equal to it in 'Scotland, N. and W.,' and 'Ireland, N.;' in all other districts, however, a deficit is shown.

"*Bright Sunshine* has been less prevalent than it was last week in most districts, but shows an increase in Ireland, the south-west of England, and the 'Channel Islands.' The percentage of the possible amount of duration varied from 19 in 'Scotland, N.,' to 34 in 'England, N.E. and S.W.,' and to 62 in the 'Channel Islands.'"

Markets.

COVENT GARDEN, August 7.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

Trade has been quiet throughout the week, owing to the holidays, but sieve-fruit has sold well, prices being higher all round. London goods heavy, at lower rates. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples, ½-sieve	3 6- 5 0	Melons, each	1 6- 3 0
Cherries, ½-sieve	2 0- 9 0	Peaches, dozen.	2 0-10 0
Currants, red, ½-sieve	3 6- 4 6	Pine-apples, St. Michael, each	2 0- 6 0
— black, ½-sieve	5 0- 6 6	Plums, ½-sieve	7 0- 9 0
Grapes, lb.	0 9- 3 0		
Lemons, per case	12 0-20 0		

Vegetables.—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichs., Globe, each	0 4- ...	Mustard and Cress, punnet	0 4- ...
Beans, French, lb.	8 0- ...	Onions, per bunch	0 5- ...
Beet, red, per dozen	1 0- 2 0	Peas, per quart	1 0- ...
Carrots, per bunch	0 6- ...	Parsley, per bunch	0 6- ...
Cauliflowers, each	0 3- ...	Shallots, per lb.	0 6- ...
Celery, per bundle	1 6- 2 0	Spinach, per bushel	3 0- ...
Cucumbers, each	0 6- 1 0	Sprue, per bundle	1 6- ...
Endive, per dozen	2 0- ...	Tomatos, per lb.	1 0- ...
Herbs, per bunch	0 4- ...	Turnips, per bunch, new	0 4- ...
Lettuces, per dozen	1 6- ...		
Mushrooms, punnet	1 6- ...		

Potatos.—The trade generally is very dull. Holidays interfere very much; although supplies are not so heavy, yet prices rule lower. *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Fuchsia, per doz.	4 0- 9 0
Aspidistra, doz.	18 0-42 0	Heliotrope, per doz.	4 0- 6 0
— speci. plants, each	7 6-10 6	Hydrangeas, doz.	6 0-18 0
Begonias, per doz.	6 0-18 0	Ivy Pelargonium, per dozen	3 0- 6 0
Cactus, per doz.	4 0-12 0	Liliums, various, per dozen	18 0-36 0
Calceolaria, p. doz.	4 0- 6 0	Lobelia, per doz.	3 0- 6 0
Cyperus, per dozen	4 0-12 0	Marguerites, doz.	6 0-12 0
Dracæna terminalis, per dozen	30 0-60 0	Mignonette, per doz.	3 0- 6 0
— viridis, per doz.	12 0 24 0	Musk, per dozen	1 6- 3 0
Euonymus, in var., per dozen	6 0 18 0	Nasturtiums, p. doz.	4 0- 6 0
Evergreens, in var., per dozen	6 0-24 0	Palms in variety, each	2 6-21 0
Ericas, various, doz.	8 0-24 0	Pelargoniums, scarlet, per dozen	3 0- 6 0
Ferns, in var., doz	4 0-18 0	— per doz.	6 0-12 0
Ficus elastica, each	1 6- 7 0	Petunias, per doz.	6 0- 9 0
Foliage plants, various, each	2 0-10 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0–	4 0	Pelargoniums, scarlet, 12 spr.	0 3–	0 6
Bouvardias, per bun.	0 6–	1 0	— dozen sprays	0 6–	1 0
Callæthiopica, 12 bl.	3 0–	5 0	Primulas, double, 12 sprays	0 6–	1 0
Carnations, 12 blms.	1 0–	2 0	Pansy, or Heartsease, 12 bunches	1 0–	2 0
— 12 bunches	4 0–	6 0	Poppies, various, doz. bunches	1 0–	2 6
Cornflower, 12 bun.	1 6–	3 0	Pyrethrum, 12 bun.	2 0–	4 0
Eschscholtzia, 12 bn.	2 0–	3 0	Roses, Tea, per doz.	0 6–	1 6
Eucharis, per dozen	3 0–	6 0	— coloured, dozen	1 0–	1 6
Gardenias, 12 blooms	2 0–	4 0	— red, per 12 bun.	2 0–	6 0
Heliotropes, 12 spr.	0 6–	1 0	— Safrano, dozen	1 0–	2 0
Lilium, var., 12 bl.	0 6–	4 0	— outdoor, 12 bun.	1 0–	3 0
Maiden Hair Fern, do	4 0–	9 0	Stephanotis, 12 spr.	1 6–	3 0
Marguerites, 12 bun.	3 0–	6 0	Sultan, 12 bunches	3 0–	4 0
Mignonette, 12 bun.	2 0–	4 0	Tuberoses, 12 blms.	0 3–	0 6
Myosotis or Forget-me-nots, 12 bun.	2 0–	4 0			
Pinks, various, 12 bn.	3 0–	6 0			

ORCHID-BLOOM in variety.

SEEDS.

LONDON: *Aug.* 6.—Messrs. John Shaw & Sons, of 37, Mark Lane, London, report to-day's market quite of a holiday character. Quotations all round, in the absence of transactions, show no change. Some fine new English trifolium now offers at exceedingly moderate rates. Mustard and rapeseed realise former terms. For birdseeds the sale is slow.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending August 2, and for the corresponding period last year:—1890, Wheat, 35*s.* 10*d.*; Barley, 23*s.* 4*d.*; Oats, 20*s.* 4*d.* 1889, Wheat, 30*s.* 8*d.*; Barley, 19*s.* 11*d.*; Oats, 20*s.* 6*d.*

FRUIT AND VEGETABLES.

SPITALFIELDS: *August* 6.—Fairly good supplies of all kinds of fresh vegetables, fruit, &c.; demand very dull at prices as follows:—Fruit: Black Currants, 4*s.* 6*d.* to 5*s.* 6*d.* per half-sieve; Red Currants, 4*s.* to 5*s.* do.; Raspberries, 22*s.* to 27*s.* per cwt.; Gooseberries, 2*s.* 6*d.* to 3*s.* per half-sieve; English Walnuts for pickling, 5*s.* to 5*s.* 6*d.* per bushel; English Apples, 3*s.* 6*d.* to 8*s.* do.; English Tomatos, 4*s.* to 6*s.* per peck; foreign ditto, 6*d.* to 1*s.* per box. Vegetables: Cabbages, 3*s.* to 4*s.* 6*d.* per tally; Vegetable Marrows, 2*s.* 6*d.* to 3*s.* 6*d.* do.; Radishes, 3*s.* to 5*s.* do.; Greens, 1*s.* 6*d.* to 2*s.* per dozen bunches; Seakale, 1*s.* to 1*s.* 3*d.* per punnet; Turnips, 2*s.* to 2*s.* 9*d.* per dozen bunches; Carrots, 2*s.* 6*d.* to 3*s.* do.; Onions, 2*s.* to 3*s.* 6*d.* do.; Parsley, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Mint, 1*s.* 6*d.* to 2*s.* do.; Horseradish, 1*s.* 2*d.* to 1*s.* 4*d.* per bundle; frame Cucumbers, 1*s.* 6*d.* to 2*s.* 6*d.* per doz.; natural do., 8*d.* to 1*s.* do.; Cauliflowers, 1*s.* 6*d.* to 3*s.* do.; French Beans, 2*s.* 6*d.* to 3*s.* per bushel; Scarlet Beans, 3*s.* to 4*s.* do.; Broad Beans, 1*s.* to 1*s.* 6*d.* do.; do., 2*s.* to 3*s.* per sack; Peas, 1*s.* 6*d.* to 3*s.* per bushel; do., 2*s.* 6*d.* to 4*s.* per sack; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Cos Lettuce, 6*d.* to 8*d.* per score; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; Leeks, 1*s.* 6*d.* to 2*s.* per dozen; Spanish Onions, 8*s.* to 8*s.* 6*d.* per case; Malta Onions, 5*s.* to 6*s.* per cwt.; Beetroots, 4*d.* to 8*d.* per dozen.

POTATOS.

BOROUGH AND SPITALFIELDS: *August* 5.—Quotations:—Myatt's home grown, 20*s.* to 100*s.*; Hebrons, 40*s.* to 80*s.*; Early Regents, 50*s.* to 80*s.* per ton.

SPITALFIELDS: *August* 6.—Quotations:—New; English Early Rose, 35*s.* to 40*s.*; Magnums, 60*s.* to 65*s.*; Myatt's kidneys, 40*s.* to 60*s.*; Regents, 50*s.* to 65*s.*; Imperators, 60*s.* to 70*s.*; Hebrons, 40*s.* to 50*s.* per ton.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80*s.* to 102*s.* 6*d.*; do., inferior, 46*s.* to 75*s.*; hay, best, 60*s.* to 95*s.*; inferior do., 26*s.* to 50*s.*; and straw, 24*s.* to 42*s.* per load.

NOTICES TO CORRESPONDENTS.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

AZALEA INDICA: *J. H.* The browning of the tips of the leaves may be due to errors in treatment, as, for instance, putting the plants whilst the foliage is still tender, and not hardened off, in positions where it becomes burned by the sun's rays, or injured by cold. Sometimes insecticides, if not washed off, will injure the tips of the leaves of plants. Too much water afforded the Azalea after growth is completed destroys many of the hair-like roots, the foliage in consequence showing a variety of injuries.

CARNATIONS: *W. G. S.* The flower-buds have been bitten off by mice.

CHRYSANTHEMUM CARINATUM: *Hurst & Son.* A beautiful strain of this plant and in great variety of colour. It only requires to be known to be appreciated as a summer blooming plant for beds and borders.

CUCUMBER AND MELON: *A. G. C.* There are probably eelworms at the roots of your plants. Examine the roots or send to us a portion for inspection. If these be present the plants cannot prosper.

DECORATIONS AT THE SAVOY HOTEL: *Enquirer.* Write to the Hotel Proprietor or the Manager.

EUCHARIS: *J. I.* The appearance is caused by the union of two flowers when in a very young stage. The occurrence is not uncommon on very vigorous bulbs.

FUCHSIAS, &C.: *P. L.* There is no fungus to be found on these, and we have no record of any fungi upon Fuchsias. The disease does not look like a fungus disease, but we will examine more carefully. The fungus on the Dracæna is probably Diplodia, described as fatal to Dracænas by Berkeley. Phyllosticta belongs to same order of fungi.

HAMPTON COURT VINE: *A Reader.* There is an account of the Vine in pamphlet form. Write to Mr. Grahame, the head gardener at Hampton Court, who may be able to tell you where it may be obtained.

MELON: *E. H.* A good variety, but not first-class. It is too like Blenheim Orange to deserve a separate name.

NAME OF FRUIT: *S. Burton.* The so-called Cape Gooseberry, Physalis edulis. The fruits are edible.

NAMES OF PLANTS: *A. B.* 1, Leycesteria formosa; 2, Potentilla fruticosa; 3, Spiræa callosa; 4, S. ariæfolia. Erica stricta. Thank you for sending good specimens, such a contrast to the withered carelessly-packed specimens we usually receive. —*G. S.* 1 to 3, seedling Veronicas which we cannot name; 4, Spiræa callosa; 5, Spiræa Douglasi; 6, Spiræa sp.; 7, Bocconia cordata (no leaf); 8, Spiræa filipendula; 9, not recognised.—*E. J. A.* A hybrid Passion flower, probably either the one known as Princess Giuglini or that called Impératrice Eugénie.—*E. M. A.* Ceanothus azureus.—*M. S. & Sons.* Scolymus hispanicus.—*R. H. L.* 1, Galega officinalis; 2, Buphthalmium cordifolium; 3, Polemonium cœruleum; 4, Spiræa callosa; 5, Veronica longifolia; 6, Coreopsis lanceolata.—*J. Carter & Co.* Loasa, species undeterminable, as all parts excepting the ovary arrived in a decayed state.—*W. S. L.* Veronica salicifolia.—*A. C.* Marasmius rotula.—*W. P.* Lathyrus tingitanus.—*G. M. L.* 1, Saccolabium Blumei; 2, Adiantum Mariesii; 3, Lastræa serra; 4, Lychnis chalcedonica; 5, Tradescantia virginica; 6, Pteris quadriaurita.—*L. H. W.* Oncidium tigratum.—*G. Abbey.* 1, Oncidium longipes (=janeirense); 2, O. incurvum.—*E. W.* Spiræa ulmaria.—*W. D.* 1, Solidago virga-aurea; 2, next week; 3, Hypericum pulchrum.—*H. M., Camberley.* Spiræa Lindleyana.

NECTARINES: *R. P.* Fruits of certain varieties of the Nectarine when exposed to the sun in full summer weather get scorched, and eventually they decay.

NOTICE TO LEAVE EMPLOYMENT: *J. H. B.* In the absence of any agreement one month's notice on either side, unless there are grounds for instant dismissal. The gardener is a yearly servant—usually engaged, with house and other privileges allowed, at a certain wage per annum. In England, yes.—A domestic.

NYMPHEAS: *J. F.* Assuming that your species are tropical, they will require a temperature in summer time of from 60°—70° at night, and a rise of 15°—20°, according to the season, the lower degree of heat at the beginning and end, and the higher in the middle of summer. Plant the tubers in large pots of rough loam and manure, with a good portion of coarse sand; place the pots on some bricks, and let the rim of the pots be at a depth of 10 or 12 inches below the water level of the tank. The tank of water should be slightly higher in temperature than the air of the house. When the leaves decay lower the temperatures of water and house, but leave the tubers in the pots until repotted in March, or the pots and tubers may be taken out of the tank and partially dried, or they may be kept—pots and all—in deep saucers holding water. The drying-off method sometimes practised is not to be recommended.

PTERIS TO ATTRACT MEALY BUG: *Orchid.* Probably P. tremula, or P. serrulata. Certainly no valuable variety, the plants being eventually thrown away.

RATING OF NURSERIES: *W. C.* In the case of Purser *v.* The Worthing Local Board (Queen's Bench Division), March 19, 1887, Mr. Justice Day and Mr. Justice Wills decided that a piece of land used for gardening purposes, even if covered with glass, was still a garden; and in the case before them it was a market-garden, and came under Subsection 1 (*b*) of Section 211 of the Public Health Act, 1875, which provides, *inter alia*, "that market gardens, or nursery garden," shall be assessed in one-fourth part only of the nett annual value.

SHANKED MUSCATS: *Old Subscriber.* It may come from one cause only, or from several; and which it is in your case we cannot say. The apparent cause may be over-cropping, loss of foliage by red spider or other insect, the roots getting into bad material, or to too great a distance from the surface; want of due caution in regulating the temperature of the vinery, sudden falls of temperature being very hurtful; improper soil, and excessive watering after periods of drought.

STRAWBERRY PLANTS DYING OFF: *J. S.* The plants appear to be suffering from the excessive lightness and poverty of the soil. Soil of the quality of the sample sent would require a liberal quantity of heavy loam and cow manure added to it, before it would grow the Strawberry well, and the mulching to be put on the land in April.

TOMATOS: *Subscriber.* One of the forms of Tomato disease, Cladosporium lycopersici, so often figured and described in our columns. Burn the plants.

VINE LEAVES: *Mrs. N.* A. Warts—due probably to insufficient ventilation—the heat and moisture are too great in proportion to the evaporation. It will do no harm. B. Natural hairs, not red spider. C. Warts and web, see A. and B.

CATALOGUES RECEIVED.

JAMES BACKHOUSE & SON, York—Flowering Roots, Strawberries, &c.

L. DELARUE-CARDON, 90, Chaussée de Bruxelles, Ledeberg, Ghent, Belgium—Palms, Azaleas, Clivias, &c.

COOPER, TABER & Co., 90, Southwark Street, London, E.—Bulbs.

B. S. WILLIAMS & SON, Victoria and Paradise Nurseries, Upper Holloway, N.—Bulbs, Fruit Trees, Roses, &c.

ROOZEN BROTHERS, Overveen, near Haarlem, Holland—Dutch and Cape Bulbs and Plants.

J. CARTER & Co., 237 and 238, High Holborn, London, W.C.—Bulbs.

ALEX. DICKSON & SONS, 55, Royal Avenue, Belfast—Bulbs.

JOHN HOOD, West Parade, Newcastle-on-Tyne—Bulbs and Flower Roots.

JAMES DICKSON & SONS, 32, Hanover Street, Edinburgh, N.B.—Dutch Flower Roots.

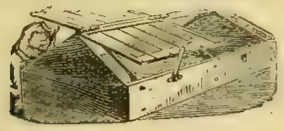
A. DESSERT, Chenonceaux, Indre-et-Loire, France—Pæonies.

BROWN & WILSON, 10, Market Place, Manchester—Bulbs and Flower Roots.

COMMUNICATIONS RECEIVED.—J. O'B.—A. D.—W. H. D.—R. D.—E. Gibbs.—R. H. S.—L. and B.—O. K.—R. B.—J. C. & Co.—H. J. V.—H. N. E.—J. C.—B. D. J.—A. C. B.—J. M. Rashleigh (many thanks).—H. Correvon, Geneva.—U. B.—H. H. D'O.—J. B.—S. H.—Lucien Linden.—Heath & Son (many thanks).—C. W. D.—Munches.—W. C.—Prof. Newton.—J. M.—C. W. D.—H. W. W.—J. Harding.—W. Sutherland.—W. A. C.—A. D.—W. H.—P. W.—Wild Rose.—J. G. Baker.—J. B.—W. E.—R. P. (shortly).

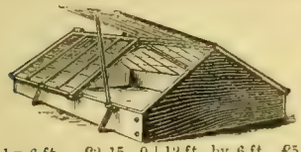
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12 ft. by 3 ft. 3 3 0 | 12 ft. by 4 ft. 3 19 0

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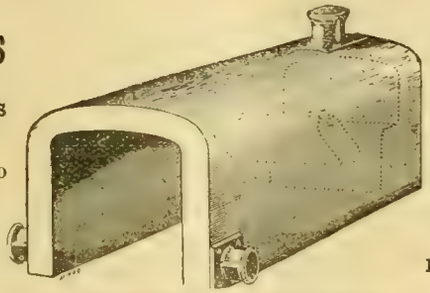
4 ft. by 6 ft. £2 15 0 | 12 ft. by 6 ft. £5 17 6
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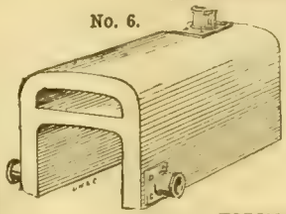
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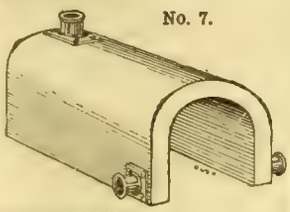
Our Celebrated No. 4 Check-end Boiler.

No. 6.



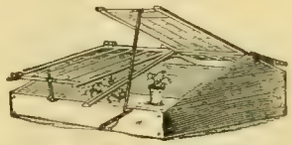
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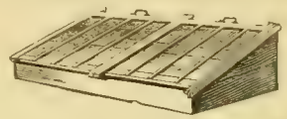
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No. 74.—THREE-QUARTER SPAN GARDEN FRAME.



4 ft. by 6 ft. £2 15 0 | 12 ft. by 6 ft. £6 0 0
8 ft. by 6 ft. 4 7 6 | 16 ft. by 6 ft. 7 12 6

No. 75.—MELON and CUCUMBER FRAME.

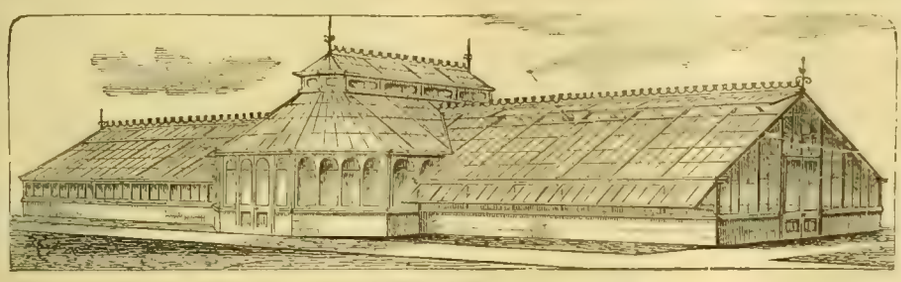


4 ft. by 6 ft. £2 0 0 | 12 ft. by 6 ft. £4 5 0
8 ft. by 6 ft. 3 0 0 | 16 ft. by 6 ft. 5 10 0

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SPECIAL for Orchids, Choice Plants, Hardwooded and Fern do., and Rhododendrons. Excellent LEAF-MOULD, SAND, Rich LOAM, PEAT-MOULD, CHARCOAL, COCOA FIBRE, SPHAGNUM, and all GARDEN SUNDRIES. PEAT MOSS LITTER.—**EPPS & CO.,** The Peat Dépôt, Ringwood, Hants.

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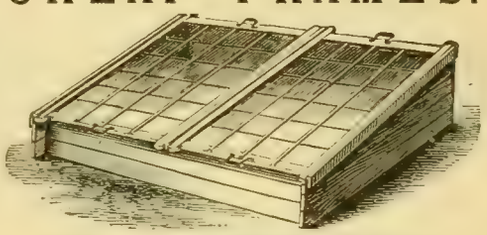
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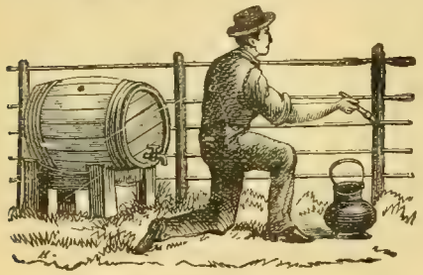
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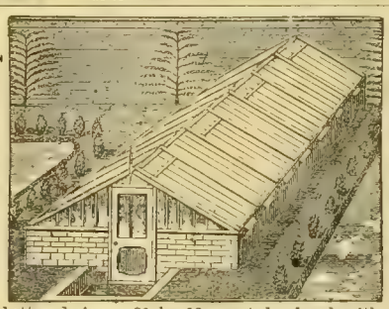
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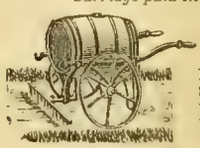
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CRYSTAL PALACE.
THE FRUIT EXHIBITION,
WITH THE
NATIONAL DAHLIA SOCIETY'S GRAND SHOW.
FRIDAY and SATURDAY, September 5 and 6.
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EVERY MONDAY, WEDNESDAY, and SATURDAY.
FIRST SALE, MONDAY, AUGUST 25.

MR. J. C. STEVENS begs to announce that his FIRST SALE of DUTCH BULBS for the coming season will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, August 25, at half-past 12 o'Clock precisely, and will comprise several hundred lots of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, and other BULBS, from some of the best known farms in Holland, and lotted specially to suit the Trade and other Large Buyers. Also Early White Roman HYACINTHS, Paper White and Double Roman NARCISSUS for Forcing, &c.

On view mornings of Sale, and Catalogues had.

Cut Flowers, Plants, and Bulbs.

We hold Sales, several each week. Reference to senders of years standing. Particulars on application.

MESSRS. POPE AND SONS, Sale Rooms, 6, Phillips Street, adjoining Market Hall, Birmingham.

Monday and Thursday Next.

DUTCH BULBS.—SPECIAL TRADE SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY and THURSDAY NEXT, at half-past 11 o'Clock, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, received direct for Unreserved Sale.

These Early Auctions have been specially arranged in Lots to suit the Trade and other Large Buyers.

The Auctioneers are now preparing their permanent Lists for the coming season, and will be pleased to enter the Names of intending Purchasers who may desire a regular supply of Catalogues for these Sales.

Auction Rooms and Offices, 67 and 68, Cheapside, London, E.C.

Bow, E.

EXPIRATION of LEASE. CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Culley to SELL by AUCTION on the Premises, The Nursery, Eleanor Street, Campbell Road, Bow, E. (near the Bow Station), on TUESDAY NEXT, August 19, at 1 o'Clock, without reserve, the erections of 10 GREENHOUSES, several with Lights; 700 feet of Hotwater-piping, 3 Boilers, Brickwork, 45 two and three light Boxes, useful Timber, Flower-pots, Sheets of Corrugated Iron, and other effects.

On view day prior and morning of Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

Acton, W.—Notice of Withdrawal of Sale.

MESSRS. PROTHEROE AND MORRIS desire to announce that the SALE of STOVE and GREENHOUSE PLANTS advertised to take place on the Premises, Edendale, Creswick Road, Springfield Park, Acton, on Wednesday next, August 20, IS WITHDRAWN.

Auction and Estate Offices, 67 and 68, Cheapside, E.C.

Hornsey, N.

Expiration of Lease. Absolute clearance.
Sale entirely without reserve.

MESSRS. PROTHEROE AND MORRIS, are instructed by Mr. J. Page to SELL by AUCTION on the premises, the Hornsey Nursery, Hornsey, N., near Hornsey Station, on THURSDAY NEXT, August 21, at 12 o'Clock, the erections of 18 GREENHOUSES, containing a superficial area of about 17,000 feet of glass and woodwork, slate, and other staging, 4,000 feet of hot-water piping, mostly 4-inch, 3 boilers, 100,000 sound Bricks, a quantity of movable lights, and other effects.

May be viewed one week prior to sale. Catalogues had on the premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Friday Next.

CATTLEYA AUREA,
" GIGAS.
ODONTOGLOSSUM ROEZLI.
" VEXILLARIUM.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Charlesworth, Shuttleworth & Co., of Heaton, Bradford, and 191, Park Road, Clapham, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 22, at half-past 12 o'Clock precisely, the above ORCHIDS, all in the finest possible condition of health. The vendors may safely assert there has never been such a fine lot of plants offered by Auction. The Cattleyas are well-leaved, and furnished with sound plant-eyes, and sure to give satisfaction to purchasers.

The Sale will also include ONCIDIUM KRAMERIANUM, O. VARICOSUM ROGERSII, and ODONTOGLOSSUM SCEPTRUM.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will include in their ORCHID SALE on FRIDAY NEXT, August 22, by order of Messrs. Seeger & Tropp, a fine lot of SATYRIUM tubers, embracing only the best and most easily grown varieties, such as were shown at the meeting of the Royal Horticultural Society on Tuesday, August 12, 1890, when a Silver Banksian Medal was awarded the exhibit. For system of cultivation, see the *Garden* for August 9, 1890, p. 138. Also many rare and choice CYPRIPEDIUMS, LÆLIA ELEGANS DAYANA (in the way of Turneri), in Bud or Flower, and other ORCHIDS of value.

On view morning of Sale, and Catalogues had.

Wilmington, near Dartford.

With possession. About a mile and a half from Dartford Station, in the midst of the Fruit growing station.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on WEDNESDAY, September 3, in five lots, the important FREEHOLD ESTATE and MARKET GARDEN, situate on the Main Road from Dartford to Swanley, comprising a total area of about 20 acres, planted with young, thriving, and well-established Fruit Trees and Bushes, the detached brick-built Dwelling House, known as Eagle House, Wilmington, 9 capital Greenhouses, 4-roomed Cottage, Stabling, and other Trade Buildings, the whole at present in the occupation of the Vendor, also the brick-built Beerhouse and Shop adjoining, let on Lease at £45 per annum.

The property may be viewed. Particulars and plans had on the Premises; of Messrs. LEWIN AND CO., Solicitors, 32, Southampton Street, Strand, W.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Bedfont.

About 20 minutes walk from Feltham Station on the Main London Road.
To Fruit Growers.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E C., on WEDNESDAY, September 3, at 2 o'Clock, in one Lot, the valuable and very productive FREEHOLD FRUIT GARDEN, situate on the Main Road at Bedfont, Middlesex, containing an area of about 35 Acres of excellent Land, fully stocked with well-established Fruit Trees and Bushes, capital detached brick-built Dwelling-house, Stabling, and Outbuildings, at present let; but the tenancy expires at Michaelmas next, when vacant possession will be given.

Particulars and Plans may be had at the Mart, of Messrs. RUSTON, CLARK, AND RUSTON, Solicitors, Brentford, and 29, Essex Street, Strand, W.C.; and of the Auctioneers, 67 & 68, Cheapside, London, E.C.

TO BE SOLD, as going concern, a capital NURSERY, SEED, and FLORIST BUSINESS, Midland. Established 12 years. Seven Greenhouses, also Frames; 3½ acres Ground, Dwelling-house and Offices, Cottage, Stable, Sheds, and Store-rooms. Shop near principal thoroughfare, in excellent working order. Stock at valuation. Income, £600 per year.

GARDENIA, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, a NURSERY, within 10 miles of Covent Garden, containing about 2 acres, 700 feet run of Glass, Pits, Potting Shed, Stable, Cart Shed, &c. New River water laid on all houses and ground.
Apply, F. H., 3, Irene Villas, Fairfield Road, Upper Edmonton.

FOR SALE, a FLORIST'S BUSINESS, at Woodford. Rent £52 per annum. Dwelling-house, 7 Greenhouses, 3 Sheds, &c. About 17 years of lease to run. Price for lease, goodwill, fixtures, and stock, £150.
Apply, R. M., Ann's Villa, Stanley Road, Woodford.

TO LET, or valuable Lease SOLD of SMALL NURSERY at Acton, with good local trade, five Glass houses (one Vinery), well fruited. Some open ground. Satisfactory reason for selling.
For particulars, apply to A. C., 1, Berrymead Road, Acton Green.

TO BE LET, NURSERY GROUND, in the Northern district, about 4 miles from Charing Cross. About 2 acres in extent. Convenient Dwelling-house and Shop. Frontage to a main road.—Apply to T. BARNES-WILLIAMS, 11, Clement's Lane, Lombard Street, E.C.

TO LET, a SMALL NURSERY, 1 Acre, situated in the Isle of Thanet. Capital chance for a pushing man to work a Coast Trade, being within reach of all towns from Herne Bay to Ramsgate. Ingoing low.
Particulars of LONGLEY, Mall Nursery, Faversham, Kent.

TO LET, a well-established NURSERY, about 12 acres in extent, well stocked and in fine condition, situated near a large city.—Full particulars on application to A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO LET, a NURSERY, about 1½ acres, good Dwelling-house, 3 Glass-houses. Sea-side place. Stock at valuation. Possession September 29.
Apply, E. WEBB, Birchington-on-Sea.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

DAILY PARCELS EXPRESS SERVICE to the CONTINENT, *viâ* Queenborough, Flushing, Kaldenkirchen.

This Parcels Service, in direct connection with the German and Austro-Hungarian Posts, is specially adapted for the rapid and regular despatch of Plants, Bulbs, &c. No Certificate required for Germany. Tariffs free on application. Goods also accepted for Conveyance by *Petite and Grande Vitesse*.
BEST, RYLEY AND CO., 88, Bishopsgate Street, London, E.C.
Receiving Office at Holborn Viaduct Station.

STRAWBERRIES.—Laxton's Noble, earliest and heaviest cropper in cultivation. In pots, 10*s.* per 100; strong Runners, 5*s.* per 100.
HARRISON BROS., St. Mary's, King's Lynn, Norfolk.

SPECIAL OFFER.—25,000 FERNS.—Pteris tremula, Pteris cretica cristata, two best market Ferns. Good stuff, in large thumbs, ready for potting on, 12*s.* per 100, packed free for cash with order. A LIST of other sorts on application.—GOWERS AND EMBERSON, Comely Bank Nursery, Walthamstow.

GRAND EXHIBITION
OF
HOME-GROWN HARDY FRUITS
IN THE
GUILDHALL, LONDON,
OCTOBER 6, 7, and 8, 1890.

THE WORSHIPFUL COMPANY OF FRUITERERS

being desirous of Promoting the Cultivation of **USEFUL HARDY FRUITS** in the **HOMESTEADS** and **COTTAGE GARDENS** of Great Britain, have organised an Exhibition to be held as above, when they will offer for competition:—

MONEY PRIZES amounting to over £200, GOLD, SILVER-GILT, and SILVER MEDALS, and FRAMED CERTIFICATES of the Company.

The above Prizes will be offered for Exhibits of Fruit by COTTAGERS, TENANT FARMERS, AMATEURS, and GARDENERS in three geographical divisions in England and Wales.

The Framed Certificates of the Company will be given for exhibits by Trade Growers and Nurserymen.

Prizes will also be offered for exhibits of Jams and Preserves by Manufacturers, and also, in a separate class, for home-made Jams and Preserves.

It is hoped that all who are interested in Fruit Culture will make this Exhibition known in their districts.

For Schedules and all other particulars, apply to the Clerk to the Company,

Mr. O. C. T. EAGLETON,
40, Chancery Lane, London, W.C.

FOR SALE, Six Large Plants, CAMELLIAS. No reasonable offer refused, they being too large for House.
Apply to CHARLES BURLEY, The Nurseries, Brentwood.

FERNS! FERNS!! FERNS!!!—Trade offer. Great Annual Sale of Surplus Stock; 100,000, in 25 sorts, Greenhouse and Stove, Pteris, Adiantums, Polypodiums, Cyrtomiums, Polystichums, &c.; 30,000 Pteris cretica cristata, fine bushy stuff, soon make 48 if potted at once; 10,000 Adiantum cuneatum, bushy stuff, all at 12*s.* per 100; store Ferns, variety, 6*s.* per 100, 50*s.* per 1000. Packed free, cash with order.
J. SMITH, The London Fern Nursery, Loughboro' Road, S.W.

The Best Present for a Gardener.

VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5*s.*, post-free 5*s.* 6*d.*
A. F. BARRON, Royal Horticultural Society, Chiswick.

Fritillaria Walujewi.

C. G. VAN TUBERGEN, Haarlem, Holland, is expecting an importation of this extremely rare Bulb, unquestionably the finest and most distinct of all Fritillarias. Its flowers are large, silvery-grey without, the inside of a peculiar deep red colour. Imported bulbs are offered at the following prices: 4*s.* each, 44*s.* per dozen. Apply either direct, or to—
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

STRAWBERRY PLANTS.—Paxton, James Veitch, President, and Elton Pine, price 3*s.* per 100; cheaper by the 1000.
WANTED, GERANIUM CUTTINGS of H. Jacoby, McMahon, Vesuvius, Flower of Spring, Sophie Dumaresque, Master Christine. Price per 1000 to H. LONGFORD, Sherburn, South Milford, Yorks.

IMMENSE STOCK of ORCHIDS.—Best Value in the Trade. Must be cleared to make room for Importations. Great opportunity. Established but unflowered plants. Very valuable varieties are certainly to be obtained, and great bargains. Summer Special Offer now ready, affording a paying investment to any one with glass at command, which should not be overlooked—such plants may never again be offered to the public and the trade.
IMMENSE IMPORTATION of that most lovely, free-flowering Orchid, CATTLEYA GASKELLIANA, just to hand. Plump bulbs, leaves green, and dormant eyes; really in splendid condition. Collector states many white ones are to be found in the consignment.
ORCHID PEAT, best in the Trade, 8*s.* per sack, carriage forward. SPHAGNUM MOSS, 7*s.* per sack; per bushel bag, 2*s.*
Apply to WM. GORDON, The Nurseries, Twickenham, Middlesex.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well-grown stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, ADIANTUM CUNEATUM, and other FERNS; PALMS in variety; GARDENIAS, STEPHANOTIS, FICUS ELASTICA, CROTONS, GREVILLEAS, TEA ROSES (in pots), BORONIA MEGASTIGMA, VINES (in pots), &c. An inspection is invited. Trade CATALOGUES forwarded on application.
The ANNUAL SALE by AUCTION will be held on THURSDAY, September 16.
Burnt Ash Lane Nurseries, Lee, S.E.

PALM SEEDS.—Cocos Weddeliana, Kentias, Areca lutescens, and Bacularia monostachya, 5*s.* per 100, cash, post-free.—F. ROSS, Bletchingley, Red Hill, Surrey.

Fruit Trees a Specialty.

STRAWBERRIES.—One of the best collections in the Trade, including Noble and other new sorts, and the best for Garden or Market. Descriptive LIST free.
FRUIT TREES of all sorts. CATALOGUES free. Full Descriptive LIST, giving much valuable information, 6*d.*
JOHN WATKINS, Fruit Tree Grower, Pomona Farm Nurseries, Withington, Hereford.

GARDENERS' ORPHAN FUND.

PROPOSED MEMORIAL TO THE LATE MR. GEORGE DEAL.

AT THE ANNUAL GENERAL MEETING of the supporters of this Institution, held at the Cannon Street Hotel, on Friday, July 18, it was unanimously resolved to specially commemorate the services rendered to the Fund by the late chairman of the Executive Committee, by granting the benefits of the Fund to the seven orphan children who had that day failed to secure election.

To enable the Committee to put these seven children on the Fund, the sum of £598 is required; and the chairman, Mr. Sherwood, on behalf of Mr. Harry J. Veitch and himself, made the munificent offer that, if a minimum sum of £250 was raised among the subscribers, they would jointly undertake to provide the remainder.

At the Annual Dinner, the chairman, Mr. Shirley Hibberd, strongly urged that the most generous offer of Mr. Sherwood and Mr. Veitch should be promptly and heartily acknowledged by a special effort to raise the sum required in order to pay a graceful tribute to the memory of their late friend.

The appeal thus made was readily responded to, among other subscriptions announced being :—

	£	s.	d.
Sir JULIAN GOLDSMID, Bart., M.P.	10	10	0
Messrs. J. WEEKS & CO.	50	0	0
Baron SCHRODER	10	10	0
A. H. SMEE, Esq.	10	10	0
P. CROWLEY, Esq.	10	10	0
Messrs. LAING & SONS...	10	10	0
J. WILLS, Esq.	10	10	0
J. SHIRLEY HIBBERD, Esq.	10	0	0
T. MANNING, Esq.	10	10	0
G. W. BAKER, Esq.	10	10	0
H. M. POLLETT, Esq.	5	5	0
M. C. MITCHELL, Esq.	5	5	0
H. J. PEARSON, Esq.	5	0	0
WM. BULL, Esq.	5	5	0
Dr. MASTERS, F.R.S.	3	3	0
Mr. F. C. BAUSE...	3	3	0
Mr. G. PAUL	2	2	0
Mr. H. HERBST	2	2	0
Mr. H. TURNER	2	2	0
Mr. F. Q. LANE	2	2	0
Mr. G. BUNYARD	2	2	0
Messrs. J. & J. ROCHFORD	2	2	0
W. H. THOMAS, Esq.	2	2	0
Mr. T. A. DICKSON	1	1	0
B. HARDY, Esq.	1	1	0
Mr. J. WEEKES	1	1	0
Mr. J. ASSBEE	1	1	0
Mr. G. MONRO	1	1	0
Mr. PETER KAY	1	1	0
Mr. J. WALKER	1	1	0
Mr. W. G. GREGORY	1	1	0
Mr. A. McKENZIE	1	1	0
Messrs. FEATHERBY AND SON	1	1	0
Mr. G. MAY	1	1	0
Mr. H. B. MAY	1	1	0
Mr. E. ROCHFORD	1	1	0
Mr. T. ROCHFORD	1	1	0
W. FURZE, Esq.	1	1	0
Mr. G. NICHOLSON	1	1	0
Mr. C. H. SHARMAN	1	1	0
Mr. W. GOLDRING	1	1	0
R. B. GILSON, Esq.	1	1	0
Mr. B. WYNNE	1	1	0
W. J. BREWER, Esq.	1	1	0
T. C. WARD, Esq.	1	1	0
Mr. A. F. BARRON	1	1	0
Rev. W. WILKS	1	1	0
D. MORRIS, Esq.	1	1	0
W. MARSHALL	1	1	0
J. WRIGHT	1	1	0
M. DUNN	1	1	0
W. RICHARDS	1	1	0
Smaller amounts	19	4	0

The Committee acknowledge with gratitude the hearty manner in which the proposition to found a "George Deal Memorial" has been received, and heartily appeal to the many whom the Committee feel there are who would like to subscribe to this tribute of respect to the memory of Mr. Deal, to send their contributions at once to the Honorary Secretary,

A. F. BARRON,
Royal Horticultural Society, Chiswick.

FOR SALE, a few thousand GENISTAS in small 60's, at 9s. per 100; in 5-inch pots from £1 5s. per 100. PRIMULAS in thumbs for potting on, at 8s. per 100, for cash with order. Post-office Orders payable at High Street, Leyton.—T. BALDWIN AND SON, Edith Nursery, Burchall Road, Leyton.





CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON, Nurserymen and Seed Merchants, Highgate Nurseries, N.

DANIELS' RELIABLE SEEDS

SOW NOW.

DANIELS' DEFIANCE GIANT EARLY MARROW CABBAGE. The finest variety in cultivation, per pkt. 6d., per oz. 1s. 6d.

DANIELS' LITTLE QUEEN CABBAGE. Exceedingly dwarf and early. per pkt. 6d., per oz. 1s. 6d.

DANIELS' GOLDEN ROCCA ONION. Grand exhibition variety. per pkt. 6d., per oz. 1s. 6d.

DANIELS' GIANT ROCCA ONION. Weight 2 to 3 lb., per oz. 1s.

DANIELS' WHITE ELEPHANT TRIPOLI ONION. Weight 3 to 4 lb., per pkt. 6d., per oz. 1s. 6d.

DANIELS' CONTINUITY CABBAGE LETTUCE. The finest in cultivation, per pkt. 6d., per oz. 1s. 6d.

DANIELS BROS., NORWICH.

ASPIDISTRA LURIDA, green and variegated. As they stand. From 30 guineas, 40 guineas, to 60 guineas per 1000. ADIANTUM CUNEATUM, smart stuff, bright and hard, 48's, 3 guineas per 100. ARAUCARIA EXCELSA, 3 guineas per dozen.—W. HOWARD, Southgate, N.

PLANTS in Pots, that can be planted all through the summer.
CLEMATIS, all hardy, in great variety.
ROSES, Tea-scented, &c.
CREEPERS for Walls. N.B.—By planting what is suitable, an ugly object may easily be made beautiful. LISTS and advice free.

RICHARD SMITH & CO.,
NURSERYMEN AND SEED MERCHANTS,
WORCESTER.

DAVIS'S WASP DESTROYER, will rid any place of Wasps and Flies. "It is the only thing to prevent them spoiling a house of Grapes, and this it will do effectually." Post-free, 1s. 9d. and 2s. 9d., with directions.

CINERARIAS GRANDIFLORA and PRIMULA, extra choice, and very strong plants, 2s. 6d. per dozen, post-free.
B. R. DAVIS, Yeovil Nurseries, Yeovil.

LEMON OIL INSECTICIDE

For certainty in action, every insect it touches being killed, easy of application, for safety, and for cost, it is the finest preparation for Dipping or Syringing Plants. Post-free—Pints, 1s. 10d.; Quarts, 3s. 3d.; Half-gallons, 5s. 9d.

EUCHARIS MITE KILLER

has saved thousands of Bulbs from destruction. If your Bulbous Plants are unhealthy, try this. Post-free—Half-pints, 1s. 9d.; Pints, 2s. 9d.; Quarts, 4s. 9d.; Half-gallons, 8s.

OR FROM YOUR SEEDSMAN.

CLIBRAN'S, Oldfield Nurseries, ALTRINCHAM;
Also 10 and 12, Market Street, Manchester.

BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each, or 1 cwt. Bags, sealed, 13s. By all Seedsmen, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

Tobacco Paper is often Useless and Ineffectual, BUT

CAMPBELL'S FUMIGATING INSECTICIDE

is simple to use and free from unpleasant smell.

From Mr. G. WYTHES, *Syon Gardens, Brentford.*—"I am pleased with the Fumigating Insecticide. For Orchids I think it will be a great boon."

From Mr. W. TUNNINGTON, *The Gardens, Calderstone.*—"We have again used your Fumigating Insecticide, and have not the least doubt about its efficacy."

From Mr. W. BENNETT, *The Gardens, Rangemore, Burton-on-Trent.*—"I am much obliged for your Fumigating Insecticide, and cannot do any other than report favourably. We tried it upon a lot of miscellaneous things, and they are now, a week after, quite clean and uninjured."

From Messrs. J. BACKHOUSE & SON, *Nurseries, York.*—"We have tried Campbell's Fumigating Insecticide, and found it very efficacious, and also pleasant in using."

From Mr. JOHN ROBERTS, *The Gardens, Tan-y-Bwlch.*—"Thanks for Fumigating Insecticide. I have given it a fair trial. It seems to be a great boon, not requiring any attention after being lighted, and is perfectly harmless to delicate flowers and leaves."

In rolls, post-free, for houses having a capacity of—
100 cubic ft., 8d. 500 cubic ft., 1/-. 1000 cubic ft., 1/3. 2000 cubic ft., 2/3. 3000 cubic ft., 2/9. 4000 cubic ft. 3/3.

CLIBRAN'S, Oldfield Nurseries, ALTRINCHAM;
Also 10 and 12, Market Street, Manchester.

GENUINE GARDEN REQUISITES,
as supplied to the Royal Gardens.

RUSSIA MATS—New Archangel, 9 ft. 4 ins. by 4 ft. 6 ins., 2s. doz.; Heavy Petersburg, 7 ft. by 3 ft. 8 ins., 12s. doz. SPECIALITE TOBACCO PAPER, 10d. per lb., 28 lb. for 21s. TOBACCO CLOTH, 1s. per lb., 28 lb. for 26s. ORCHID PEAT, 8s. per sack. PEAT, LOAM, SAND, MANURES, and SUNDRIES. Price List free.—W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

THE "PERFECT" WEED KILLER

TRADE MARK. SWIFT & SURE.

TRIAL SAMPLE post-free. Without which none is genuine.

Maintains its Superiority over all Rivals

for permanently destroying vegetation on Walks, Carriage Drives, Ash Tennis Courts, Stonework grown green, &c.

Used at Kew Gardens, Royal Horticultural Gardens, &c., &c.

COMPLETE SATISFACTION GUARANTEED

to all using WEED KILLER bearing our Trade Mark, without which none is genuine. *Refuse Imitations.*

PRICE—Gallon, 2 -; 5 gal., 1/9 per gal.; 10 gal. 1/6 per gal.; 40 gal. 1/4 per gal. SPECIAL QUOTATIONS FOR QUANTITIES.
Carriage paid on 10 gallons and upwards.



DISTRIBUTOR for "Perfect" Weed Killer.

Holds 40 gallons. Wrought-iron frame-work neatly painted. Galvanized tubes with tap to regulate flow. Gives spray 36 ins. wide. Price £4 net on rail Glasgow.

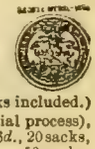
SOLE MANUFACTURERS: THE
HORTICULTURAL & AGRICULTURAL CHEMICAL COY.
Works: 97, Milton Street, Glasgow.
Principal Agents: BLACKLEY, YOUNG AND CO., 103, Holm Street, Glasgow.

NOTICE.—*We originally had our Works at Tonbridge, Kent, but removed them to* GLASGOW *in January*, 1887, *since which time our* ONLY ADDRESS *has been* GLASGOW.

London Wholesale Agents, HURST & SON, 152, Houndsditch.
SOLD by SEEDSMEN and FLORISTS.



GARDEN REQUISITES.



TWO PRIZE MEDALS.

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THE
Gardeners' Chronicle.

SATURDAY, AUGUST 16, 1890.

THE AMERICAN LOCUST TREE.

THERE is not in Europe a more interesting tree for Americans to visit than the venerable Locust in the garden of the Museum of Paris (Robinia pseudacacia). The first of its race to grow in the soil of Europe, it has survived for more than two centuries and a-half the wars of the elements and the social cyclones which have swept over it. The seed from which it sprung was planted in 1635, by Vespacien Robin, gardener of Louis XII., in the Jardin du Roi, now called the Jardin des Plantes. Vespacien Robin was the son of a gardener more famous than himself, Jean Robin, who had charge of the Royal Gardens under Henry of Navarre; and it was for the elder Robin that Linnæus, more than a century after his death, named the genus Robinia, to which our Locust tree belongs. Little is left of the old tree but the shell of the trunk and a few feeble branches, which clothe themselves year after year with leaves and flowers, testifying to the wonderful vitality of the Locust tree, and to the care which has been bestowed upon this specimen by the authorities of the garden—the most interesting in the world, perhaps, in its historical associations with men famous in the annals of botany.

The Locust tree (Robinia pseudacacia) has excited, from a cultural point of view, more interest than any other inhabitant of the American forests. There is no other North American tree about which whole volumes have been written, and no other of our trees has been so enthusiastically praised or so widely scattered by cutivation.

The earliest account of the Locust tree was published in 1640 by Parkinson in his classical *Theatrum Botanicum*, it having been cultivated in England about that time by the Dutchman, John Tradescant, a great traveller and botanist, who held the position of gardener to Charles I. Evelyn, in his *Sylva*, published in 1664, records the fact that the Virginia Acacia thrives in the King's new plantation in St. James's Park; while his great French contemporary,

Duhamel, gave, a few years earlier, specific directions for its cultivation. A hundred years later the Locust had so grown in esteem in Europe that something was said about it by nearly every writer who discussed rural economy or the possibility of increasing national wealth through the cultivation of exotic trees. The first book devoted entirely to the Locust was published in Paris in 1803. It is a small octavo of 314 pages, and is entitled *Lettre sur le Robinier connu sur le nom impropre de faux Acacia.* It was written by M. N. François de Neufchâteau, a Senator and member of the Institute. This work contains the essence of all that had been previously published about the tree in France, and a great deal of information relative to its culture and uses. A translation of portions of Monsieur François' essay is published in an English book on the Locust, which appeared from the pen of W. Withers, of Holt, in Norfolk, in 1842, under the title of *The Acacia Tree: Its Growth, Qualities and Uses.* William Cobbett, however, better known perhaps as the vituperative political essayist, Peter Pindar, than as an enthusiastic and successful planter of trees, did more by his writing and example than any other man to make known the value, and spread the cultivation of the Locust-tree.

Cobbett, during a forced residence in the United States from 1817 to 1819, occupied himself in farming on Long Island, where he established a small nursery for the propagation of fruit and timber trees. It was at this time that he came to the conclusion "that nothing in the timber line could be so great a benefit as the general cultivation of the Locust." On his return to England he carried a small package of the seeds of this tree home with him, and began the systematic raising and selling of Locust trees, his total sales amounting to more than a million plants. This he tells us in his book called *The Woodlands*, which, in some respects, is the best book on tree-planting which has been written in the English language. The author in his preface gives his reasons for having written it: "Many years ago," he says, "I wished to know whether I could raise Birch trees from the seed. I looked into two French books and into two English ones, without being able to learn a word about the matter. I then looked into the great book of knowledge, the *Encyclopædia Britannica;* there I found in the general dictionary, 'Birch tree. See Betula, Botany Index.' I hastened to Betula with great eagerness; and there I found 'Betula. See Birch tree.' That was all; and this was pretty encouragement to one who wanted to get, from books, knowledge about the propagating and rearing of trees. There are tree planters of the present generation who turn to the literature on the subject with results which are hardly more satisfactory. Cobbett's book has long been out of print, but no other work gives such clear and specific direction for rearing and planting trees, and there are portions of it which might well be reprinted for general circulation.

Cobbett's enthusiasm for the Locust tree, and his zeal in propagating it, caused it to be planted generally in England in his time, and the fashion, as is often the case with English fashions, crossed the Atlantic, and fifty or sixty years ago no tree was so often planted in this country. Remnants of these old plantations may be seen up and down the Hudson River, and in the neighbourhood of all our seaboard cities; and the Locust is now fairly naturalised in a large part of the country east of the great plains, although originally its range was a comparatively restricted one, it being found only in the forests of the Alleghany Mountains, from Pennsylvania to northern Georgia, and, doubtfully, in a few isolated stations west of the Mississippi River. So far as the United States is concerned, however, the Locust tree has not fulfilled the hopes of the early planters. It is preyed upon in this country by a horde of insects, who bore into the trunk and destroy the trees or the value of their timber; and the prophecy of the younger Michaux, that the Locust tree would become more common in Europe than in its native country, has probably been fulfilled.

It is, however, one of the few American trees, if not the only one, which has become really naturalised in Europe, and there is no other exotic tree which travellers in central Europe see more frequently. This is due, in part, to the fact that it has been planted everywhere along the lines of railroads to hold the soil on the embankments, and because it is the favourite tree for the embellishment of the grounds surrounding the stations.

Long cultivation of this tree has given birth to many varieties, and of these the one known as the Parasol Acacia, with a dwarf, compact, spherical head, usually grafted as a tall standard, is one of the most popular ornamental trees in Europe, where it lines countless miles of roadside, and adorns innumerable villa-gardens.

The great value of the Locust-tree is found in the wood which it produces. This is heavy, exceedingly hard and strong, very close-grained, and capable of withstanding for a long time the effects of decay when placed in contact with the ground. This makes it one of the best woods known for fence-posts; it has many uses in shipbuilding, and is preferred to the wood of all other trees for tree-nails, for which purpose it is largely used. It grows rapidly from seed, which is produced in the greatest profusion, and it will adapt itself to almost every kind of soil. The rapidity of its growth is great, and, thanks to the lightness of the shade cast by its compound leaves, it does less injury than most other trees to crops growing beneath its branches. The Locust is a good hedge plant, too, and the fragrant white flowers are very beautiful. These are the qualities which have made the Locust popular, and were it not that it is so liable to the attacks of insects, the planters of the present day would be able to endorse all that Cobbett claimed for it. *Garden and Forest, June* 25, 1890.



Fig. 28.—Musa Seemannii. From a photograph of His Excellence Sir John Thurston, Governor of the Fiji Island.

MUSA SEEMANNI.

A musa bearing its fruits erect at the top of its stem is decidedly unusual. Generally the great weight of the fruit causes the stem to bend downwards, but in this Fijian species such is the stiffness of the stem that the fruits are borne erect, whence, probably, the name Uranoscopa—heaven regarding—which was applied to a similar species by Rumphius, and to this particular plant by Seemann, under the erroneous impression that his plant was the same as Rumpf's. Baron Von Mueller, K.C.M.G., however, recognised the difference, and in his *Fragmenta*, ix., 190, has given the name M. Seemanni to this species. The photograph whence our illustration was taken

was sent to us by Baron Von Mueller, who received it from H.E. Sir John Thurston, the Governor of the Fiji Islands (see fig. 28).

ONIONS, AND THE ONION MAGGOT.

There has been much complaint this year—as indeed there is in most years—of the injury to, and sometimes the total loss of, the Onion crop by the white maggot, Anthomyia ceparum (fig. 29). This creature attacks the plants in a young state, causing the roots and bulbs to decay; and the first intimation of anything being amiss is, the leaves becoming yellowish before the plants die. Many means for the destruction of the maggot have been recommended; but so far all has been in vain. Where the injury has began, the only thing that can be done, is to pull up the damaged Onions, when it will be found that the maggot will sometimes go with the Onion, and in others it remains in the hole; therefore, it is a good plan to make sure by letting a few drops of paraffin or a pinch of gas-lime into the hole; lime-water will also kill anything in the way of maggots or worms. Strewing soot amongst the healthy plants after those infested with the maggot are removed, seems to have a good effect in stopping its ravages. The Onion-fly, as well as the Celery-fly, seems to object to the smell of soot, and goes somewhere else to deposit its eggs. The life-history of the fly consists in its emerging from the ground in April or May, where the pupa has laid dormant throughout the winter. In May the fly deposits its eggs on the leaves of the young Onion plants; they are soon hatched, and the young maggots drop to the ground close to the roots, and instinctively make for the Onion, which they penetrate close to the surface of the ground. The difficulty of destroying burrowing maggots is very great, when they have once attacked the crops; it is, therefore, much better to consider whether some means cannot be discovered, whereby the depredators can be destroyed in the pupa state. My own experience suggests as a deterrent, sprinkling the ground rather thickly with soot previous to drawing the drills for sowing the seeds. It may not, perhaps, prevent the flies from emerging out of the soil, but it is very probable that it drives them away to the Onion-beds of somebody else who dose not use soot—it may also be offensive to the maggots when they emerge from the eggs. There is no doubt that the best thing to do, if possible, is to destroy the pupa when it is dormant in the ground. Some writers have recommended rotation of crops, but it has been found that excellent crops of Onions can be grown on the same piece of ground for at least twenty years, by merely giving the ground a dressing of manure annually. I fancy the right preparation of the ground would insure good crops of Onions free from the maggot, whereas careless culture will give unsatisfactory results. The system of vegetable culture followed very generally, at least by market growers, is to get one crop into the ground as soon as another is removed. The rule seems to be to get in "green stuff" early or late; as one crop is removed they follow up with another, hoping to make something out of it, but it may be a question whether it is not better to have one really good crop of superior rather than two half crops of inferior produce. Covent Garden and other markets are glutted with inferior vegetables unsaleable at any price, while high-class produce finds a ready sale at good prices. I had some conversation with an old market grower who has happily made a fortune at the business. "I never," said he, "troubled myself much about the sale of my goods, but I did take infinite pains to grow my produce well, and it sold itself." It is with gardening as in everything else in this world, the best wins. So with the Onion crop, I believe we should not hear much of failures in any way, if the following system of culture were pursued. First as to preparation of the soil: This is a matter that all good gardeners consider of primary importance; but there is no chance to prepare the soil, when one crop is put in immediately after another without allowing time for the ground to be exposed to the action of the atmosphere. There is generally most difficulty to get a good crop of Onions in light soils; I like to prepare the ground by digging it deeply in October, laying it up roughly so as to expose as much of it as possible to the weather. During the first severe frost after Christmas, I wheel on to the ground a good dressing of farm-yard manure, which is spread evenly over the surface. No other preparation of the ground is required except to rake off the loose part of the manure, and the process of raking this off will usually level the ground. My earliest experience with Onion sowing was to sow the seeds broadcast in beds about 4 feet wide, with alleys between them of about 1 foot in width. When the seeds were sown, a little of the soil in the alleys was thrown over the bed, and the ground was made level by the rake. By this method of culture, the bulbs came quite on the surface of the ground. The beds were first made, and the soil was rendered firm by treading. I now sow Onion seed in drills in the open quarter, these being 1 foot apart, which gives the crop when thinned out ample space for growth. Growers for market sow the seed broadcast in the fields, and although little trouble is taken to prepare the ground, a good deal of expense is incurred in weeding the crop, and a crop of Onions pays as well as most other crops. The best growers have found out that soot has considerable manurial value. It is good practice to heavily dress with soot the ground intended for Onions,

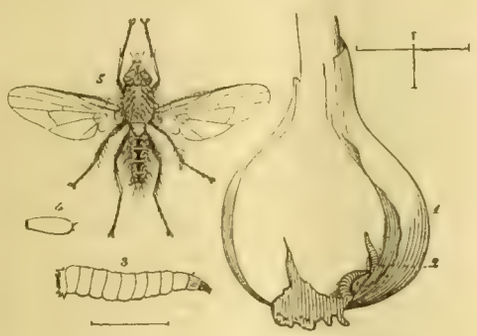


Fig. 29.—The onion-fly.

raking it in before sowing the seed. Gas lime is used for the same purpose, but as it is uncertain in its effects—sometimes doing more mischief to the crops than maggots or wireworms—it is better not to make use of it at all. *J. Douglas, Great Gearies, Ilford.*

New or Noteworthy Plants.

BILLBERGIA VEXILLARIA×, *André in "Rev. Hort.,"* 1889, *p.* 467, *fig.* 118, *and coloured figure.**

The special marks of this new hybrid Billbergia are its broad, obtuse, horny leaves; its large, compact head of flowers; its numerous, bright red, persistent, large, broad leaves; its white-mealy calyx and rachis, and its dark lilac corolla. Purple-flowered Billbergias are very few in number. It keeps in flower for a long time, and will be found to be one of the finest forms known in cultivation. It was raised by M. André by fertilising B. thyrsoidea splendida with the pollen of B. Moreli. *J. G. Baker.*

Lilium Henryi.

This new Chinese Lily has been introduced to Kew, and has just flowered for the first time. It has broad leaves like L. speciosum, and sub-erect bright yellow flowers about 3 inches in diameter with narrow reflexing segments, which have a few small red-brown dots and very conspicuous concolorous papillæ near the base. It was discovered by Dr. Henry in the mountains of Western China, and introduced into England through Mr. Chas. Ford, of the Hong Kong Botanic Garden. A drawing has been made for the *Botanical Magazine*. A full description of it by Mr. J. G. Baker will be found in our issue of December 8, 1888.

Masdevallia costaricensis, *Rolfe, n. sp.**

This pretty little Masdevallia was introduced from Costa Rica by Messrs. F. Sander & Co., of St. Albans, from whom specimens have been received at Kew. It has also been sent by S. Courtauld, Esq., of Bocking Place, Braintree, the plant having been received from Messrs. Sander. It is allied to M. Reichenbachiana, Endres, but the flowers are white with yellow tails, and the nerves of the lateral sepals of the same colour. The peduncles bear two or three flowers in succession, as in the species just named. *R. A. Rolfe.*

Cypripedium × Youngianum, *n. hyb.*†

The above handsome hybrid was exhibited at a meeting of the Royal Horticultural Society, on July 8, by Messrs. F. Sander & Co., the raisers, who received an Award of Merit for it. A flower and leaf have now been sent to Kew, by R. H. Measures, Esq., of Streatham, into whose collection the plant has passed. It was obtained by crossing C. superbiens with the pollen of C. Rœbelenii, which is really a variety of C. philippinense.

Nidularium striatum, *Hort. Bull.*‡

This is a very distinct new species of Nidularium, which Mr. Bull has imported from South Brazil, and which has just flowered at Kew for the first time, It is noticed in his Catalogue for 1888 and figured in a flowerless state, and by this time, no doubt,

* *Billbergia vexillaria*×, *André in "Rev. Hort.,"* 1889, *p.* 467, *fig.* 118, *and coloured figure.*—The following description is made from two living plants, which M. André has kindly sent:—Acaulescent. Leaves about twenty, in a dense rosette, lorate, horny, green, with a few faint bands of white on the back, 1½ to 2 feet long, 3 to 3½ inches broad at the middle, 4 inches at the base, rounded at the apex to a minute cusp; marginal teeth small. Peduncle much shorter than the leaves; bract-leaves bright crimson, lanceolate, 3 to 4 inches long, the lower adpressed to the stem, six or eight of the upper crowded at the base of the inflorescence, hiding the lower flowers. Raceme dense, ½ foot long, erect or slightly cernuous; rachis white-mealy. Calyx with ovary above an inch long, covered with white meal; ovary shallowly sulcate; sepals oblong, obtuse, ⅓ inch long. Petals dark lilac, ligulate, about an inch longer than the calyx, ¼ inch broad. Stamens as long as the petals; anthers linear, yellow. Style dark lilac, longer than the petals. *J. G. Baker.*

* *Masdevallia costaricensis*, n. sp.—Plant small and densely tufted. Leaves obovate-spatulate, subobtuse, 3-nerved, attenuate to petiole, which is a third as long as the blade. Peduncles a little exceeding the leaves, bearing two or three flowers in succession. Bracts lanceolate, acute, ½ inch long, sheathing below. Ovary six-angled, bright green. Perianth tube ½ inch long, laterally subcompressed, with three yellow keels, and with blunt mentum. Dorsal sepal shortly triangular, the deflexed yellow tail an inch long. Lateral sepals broadly and obliquely triangular, the tails resembling that of the dorsal sepal. Petals translucent white, semiovate, subobtuse, 3 to 4 lin. long, with short and board claw. Lip translucent white, ligulate, minutely tridenticulate, 4 lin. long, apex and upper margins reflexed. Column white, apiculate, angles acute, a little shorter than petals. Native of Costa Rica. *R. A. Rolfe.*

† *Cypripedium* × *Youngianum*, n. hyb.—The leaf is nearly 1 foot long by 2½ inches wide, bright green, reticulated with darker green nerves. The flower is very elegant and quite intermediate in character. The dorsal sepal is ovate, acute, over 2½ inches long, with about twenty-seven purple-brown nerves on a very light ground. Most of the nerves are yellowish-green at the base. The drooping petals are 4½ inches long, ciliate, copiously spotted with light maroon spots on a light ground, passing into yellowish-green at the base. The lip is large and pale in colour, somewhat resembling that of C. superbiens, the veins scarcely darker in colour, while on the side lobes and inside on the disc are numerous small light purple spots. The staminode is broadly rounded, the apex with three minute teeth, the base and concave sides pubescent, reticulated with green on a pale ground. The lower sepal is ovate, very acute, veined with pale green on a light ground. The scape is two-flowered. It is very distinct from C. × selligerum and C. × euryandrum, with which it can best be compared. *R. A. Rolfe.*

‡ *Nidularium striatum*, Baker ex Hort. Bull.—Acaulis; foliis rosulatis loratis obtusis medio striis multis verticalibus ornatis aculeis marginalibus parvis; foliis floralibus multo minoribus apice rubro maculatis; floribus in foliorum multorum axillis dispositis; calycis segmentis obtusis; corollæ tubo viridulo, calyce longiori, segmentis ovatis albis; genitalibus inclusis.

it is widely dispersed in gardens. Its peculiarities are its broad obtuse leaves, striped down the central third with green ribs on a yellowish ground, the red spots that ornament the tip of its shortened inner leaves and its pure white flowers, which are not aggregated into a single central nest, but placed also in the axils of several of the red-tipped reduced leaves. By Bentham Nidularium is merged in Karatas, and I have followed him in my *Handbook of Bromeliaceæ*. It does not fit into any of the groups defined at p. 1 of that volume.

Acaulescent. Tuft about 2 feet in diameter. Leaves lorate, 1 foot long, 2 inches broad at the middle, 3 inches at the dilated base, moderately firm in texture, obtuse, green, vertically striped down the central third with green ribs on a yellowish-green ground, not spotted; marginal teeth minute. Inner reduced leaves ten to twelve, ovate, 3 to 4 inches long, striped like the proper leaves, and, in addition, ornamented with a large bright red spot at the tip. Flowers forming not only a central cluster, but placed also several in a row in the axils of several of reduced leaves. Ovary whitish, oblong-trigonous, ½ inch long. Calyx-segments green, linear-oblong, obtuse, a little longer than the ovary. Corolla-tube green, ¼ inch longer than the calyx-segments; segments obtuse, pure white, ⅓ inch long. Stamens shorter than the corolla-segments; filaments very short. *J. G. Baker.*

Nepenthes Burkeii Mast. var. prolifica.

Nearly a year ago we had the opportunity of figuring and describing what we considered to be a new species of Nepenthes, introduced by Messrs Veitch from Borneo, where it was collected by Mr. Burke. It is distinguished, *inter alia*, by the lobed margin of the pitcher, the lobes raised and projecting beyond the finely-ribbed red rim, and by the nearly complete absence of the vertical wings, which constitute so marked a feature in most species of the genus. The present variety is remarkable for its narrow leaves, tapering at both ends. We have now to note the appearance of a very distinct variety of more slender habit, with narrower leaves, and smaller, less highly coloured pitchers, which are produced in such profusion as to give the plant a striking appearance, and to suggest the name under which Messrs. Veitch exhibited the plant at the meeting of the Royal Horticultural Society on Tuesday last. *M. T. M.*

REPORTS ON THE POTATO CROP, UP TO JULY 23.

SCOTLAND.

Aberdeen.—The crops in this district are rather irregular—in low-lying, damp situations they were a good deal cut down by frost on June 8 and 15, but on dry ground, where the frost did little damage, there is a promise of a good average crop. Early sorts are of good quality, and show no disease. *John Forrest, The Gardens, Haddo House.*

—— Potatos are about three weeks later this year than last. Some of the haulms were blackened on the morning of June 8, when we had 2° of frost. *Francis Duncan, The Gardens, Dunecht House.*

—— Garden Potatos are a good crop, and of splendid quality. Field Potatos look well on some farms, and on others very poor; but all would be greatly benefited by more sunshine. *Whitehouse.*

Ayr.—The bulk of the Potato crop for early use is lifted. The yield has been a heavy one, about 9 tons to the acre. Late crops are looking well, but require sunshine and dry weather to keep them healthy. *David Murray, Culzean Castle, Maybole.*

—— The crops are not turning out very well, so much rain and cold nights making the tubers soft and flavourless; we have not seen any disease in the gardens as yet, but I hear of it being seen in the fields. *William Priest, Eglinton Gardens, Irvine.*

Banff.—The Potato crop is looking well generally. Should heat follow upon the recent heavy rains, I am afraid of disease, but as yet there are no signs of it n this neighbourhood. Sharpe's Victor still maintains its reputation of earliness, although we were quite a fortnight later this year than last. *James F. Smith, Cullen House Gardens.*

East Lothian.—Early Potatos are an excellent crop, of good quality, and free from disease. Field Potatos are strong and healthy, with every promise of a heavy crop. *James Morrison, Archerfield, Drem.*

—— The garden Potatos are looking very healthy in this district, and I have not seen or heard of any disease. Myatt's Kidney is a fine crop, and only needs dry weather to make it good in quality. Field Potatos are looking very promising at present. *L. Dow, Newbyth, Prestonkirk.*

—— Earlies have been ready sooner than usual; the crop is not large, but the quality fairly good. Second earlies appear later, and do not look so promising as the former; nor, indeed, as the late varieties, which are very strong and healthy. A dry autumn will ensure an abundant crop of field breadths. *R. P. Brotherston, Tyninghame, Prestonkirk, East Lothian.*

Fife.—In this district the Potato crops are looking very healthy, but are not so regular as last year. There is no appearance of disease. *G. Ramsey, Fordell Gardens, Inverkeithing.*

Forfar.—A fine crop, with no appearance of disease. The quality was not good at first, but has been improving since the advent of dry and warmer weather. *William McDowall, Brechin Castle Gardens, Brechin.*

Kincardine.—We have disease in the locality. I have seen none in the open ground, but had plenty of it among Potatos grown in a slightly heated bed three weeks ago. Unless the weather gets much drier, I fear we shall have disease. *J. M. Gavins, Arbuthnot Gardens, Fordoun.*

Midlothian.—The low temperature and unusually heavy rainfall in June has been rather against the Potato crops, which are scarcely so forward as usual in the middle of July. The plants are fairly healthy and vigorous, and, with drier and warmer weather, they promise to produce a good crop. Early Potatos are generally a fine crop, but are soft and deficient in flavour from the superabundant moisture. Ash-leaf kidneys are much the best in quality up to this date. Of round varieties, Coldstream is the best in quality, but a poor cropper. Sutton's Early Regent is a great cropper, of good flavour, but still soft. It is too early for any disease, but it has not been at all virulent in this district of late years. *M. Dunn, Dalkeith.*

Nairn.—Potatos in gardens are very good; Puritan, Maggie, and kidneys have good crops, and are very large for the season. Field varieties, which are improving since the rain, are irregular, and not so vigorous as usual; some of the fields were frosted in June. *James Maitland, Cawder Castle.*

Renfrew.—Early Potatos are a heavy crop and free from disease; but owing to the heavy rains we have had, the tubers are very soft. Late sorts are also free from disease, but they cannot long remain so if this cool, wet weather continue. The tops look well, and should prove a good crop if we get sunshine. *Andrew Rae, Eastwood Park Gardens, Giffnock.*

—— The Potato crop in this district, from a farmer's point of view, is not at all promising, so much rain and want of sunshine has retarded growth very much, especially those in low-lying ground. They have a very stunted appearance, although in some places looking fairly well. *H. Maxwell, Ralston, Paisley.*

Roxburghshire.—Potatos, ifsomewhat late, are promising fairly well in this district. Early sorts are good in size and quality. Disease is appearing in several gardens; a continuance of wet and sunless weather experienced of late will be favourable to its development, especially with the extra luxuriant and soft growth the tops of most varieties have made. *R. G. Milne, The Gardens, Minto, Hawick.*

Stirling.—Potatos, especially late kinds, have suffered from the heavy rains and cold nights of June. Kidneys are generally plentiful and moderate in quality; Drummond's Early is the earliest white round kind, but inferior in crop compared with last year. Cobbler, Fortyfold, Regent, Magnum Bonum, and Schoolmaster find greatest favour here—where many kinds have had impartial trial. Our land is heavy; on the light lands the crops are more promising. *M. Temple, Carron House, Falkirk.*

Wigton.—I have never seen the Potato crop so badly diseased at such an early date. It commenced as early as the middle of June in the gardens here. I blame the cold, dry season after they were planted, and then so much rain and cold when they should have had dry, warm, sunny weather. *W. Cruden, Castle Kennedy, Stranraer.*

—— Potatos look well at present, and late varieties are free from disease; but some of the early kinds have a few tubers affected. Crops generally are very good, and dry weather is now wanted to ensure heavy crops of late varieties. Magnum Bonum and Champion are the sorts relied upon for field crops. *James Day, Galloway House, Garliestown.*

ENGLAND.—NORTHERN COUNTIES.

Northumberland.—The Potato crop in this county never looked better. The weather having been so wet of late, the quality of the early varieties is rather disappointing, but we have excellent large tubers, and happily there is no disease as yet. I find Duke of Albany the best, and Sutton's Ringleader next. The field crops look well, but it is difficult to say what the produce will be. *David Inglis, Howick Gardens, Lesbury.*

Durham.—The crops never looked better, and there is no appearance of disease. *Rd. Westcott, Raby Gardens, Darlington.*

York.—Of early kinds, Carter's First and Best, Sutton's Ringleader, Veitch's Early Ashleaf, and of second early, Covent Garden Perfection, are all badly diseased. Of the first-named kinds, one-half of the tubers are not useable. Late kinds (Imperator and Magnum Bonum) are looking healthy and promising. *R. C. Kingston, Brantingham Thorpe, Brough.*

—— The Potato crops in this district look very promising, but sun is much needed to bring the crop to perfection. I have not seen or heard of any disease so far. The varieties most in favour here are Myatt's Prolific, Veitch's Ashleaf, Imperator, and Magnum Bonum. *R. Cock, Edenthorpe, Doncaster.*

—— Early Potatos are good everywhere, and free from disease; crops abundant. Late varieties promise well in the fields; the haulm is especially strong and healthy. *W. Culverwell, Thorpe Perrow, Bedale.*

Lancashire.—Potatos are good, and turning up with very few small ones. For six weeks we have not had two days in succession without more or less rain, and the tops of two or three sorts are affected with the disease. *W. P. Roberts, Cuerden Hall, Preston.*

—— The Potato crops will be heavy here, but the disease is showing on the haulm, especially in early kinds. *Jas. Hathaway, Lathom House, Ormskirk.*

ENGLAND.—EASTERN COUNTIES.

Lincoln.—The Potato crops are likely to be very good. In some situations there are slight traces of disease, but everywhere they are yielding well. *A. S. Elder, Highfield, Gainsborough.*

—— Potato crops are looking fairly well, and free from disease. Early varieties lifted clean, and showed no signs of disease; but the tubers are rather smaller than usual, the dry cold weather in June being the cause. *David Lumsden, Bloxholm Hall.*

—— Early Potatos are very good crops in this district, and quite free from disease. Myatt's Ash-leaf out in the open have been quite a fortnight earlier this year than last. Late field crop looks very promising, especially the Magnum Bonums. *J. Rowlands, Bardney Manor Gardens.*

Norfolk.—It is treading on dangerous ground to say anything about Potatos, for although they look healthy and well at present, a week or ten days will tell a different tale, for on looking over them to-

day, I could discern several places where the disease had attacked them. *H. Batchelor, Catton Park, Norwich.*

Suffolk.—In this district the crops of early Potatos have turned out well, the tubers being larger in size than usual, and the quality mostly very good. Up to a recent date the crops have looked remarkably well, as large breadths do even now, but there are signs of disease. *John Wallis, Orwell Park, near Ipswich.*

—— Early Potatos are later, and more watery than usual. Mid-season and late crops give great promise; length of haulm excessive. Disease is much dreaded through the cold and wet of the first half of July; I have heard of, but not yet seen it. *D. T. Fish, Hardwicke, Bury St. Edmunds.*

—— Potatos look remarkably well, and all early kinds have been good; and, if we get a continuance of the present fine warm weather, late crops will be fine. The first patch of disease showed itself here on the 10th, but there has not been any great spread of it since, nor is it prevalent in cottage gardens, or about this part as yet. *J. Sheppard, Woolverstone Park, Ipswich.*

Essex.—Up to the present time Potatos have been very good indeed. We have only lifted three sorts as yet—viz., Veitch's Ashleaf, Sutton's Early Regent, and Snowdrop—each of which have turned out well. Very little disease has come under my notice. The field crops are looking strong—but much beaten down by the late heavy rains. Large growers predict heavy crops, providing we have a fine autumn. *Arthur Ocock, Havering Park, Romford.*

—— Early Potatos are plenty to the hill, but small to medium-sized, and of poor quality. There is not yet any trace of disease. The field crop is not sufficiently advanced to say much about it, but the haulm is healthy looking, and not curled up, as we sometimes see it. *J. Douglas, Great Gearies, Ilford.*

—— Potatos, generally, have done exceptionally well. Late varieties, such as Magnum Bonum, Imperator, &c., are robust and promising. Beauty of Hebron and similar early kinds, are ripening. I had all mine dug about St. Swithin's Day, and found a few thoroughly diseased. *William Early.*

MIDLAND.

Notts.—Early Potatos are very good, and, so far, free from disease. We grow Radford, Veitch's Improved Ashleaf, Myatt's Birmingham Prizetaker, and Prince Arthur. I find the above good kinds for this locality. Late varieties are looking remarkably well. *Alfred Hamshere, Beaumanor Park Gardens, Loughborough.*

—— The Potato crop in this district, so far, looks very promising; all the early kinds which have been taken up have nice clean tubers of good size and up to the present no trace of disease has been observed. The late crops are looking extremely well. *S. A. Woods, Osberton Gardens, Worksop.*

Leicester.—Early Potatos are bearing well; the quality is good, and tubers free from disease. Growth of late sorts stimulated by rain, which was much required in this district. The fall from February to June was only 6·88 inches. *William Ingram, Belvoir Castle Gardens, Grantham.*

—— Potatos are looking very well, and have no signs of disease at present; early varieties are lifting well. I have taken up Sharpe's Victor for seed. I find it the earliest. It is a good cropper, and the quality is first-rate. *G. Maynard, Cole Orton Gardens, Ashby-de-la-Zouch.*

Warwick.—Potatos so far present a very healthy appearance. My Magnums are now in flower, and they look the picture of health. Warwickshire has become a thorough Potato-growing county. *Wm. Miller, Combe Abbey Gardens, Coventry.*

—— Potatos are looking remarkably well, both early and late. We have had very little rain in this neighbourhood until July, the weather being generally cold and dull. *J. Bowler, Caldecot Gardens, Nuneaton.*

Staffordshire.—Early Potatos are not good here, either as regards crop or quality, and are already showing signs of disease, owing, I presume, in both cases to the great amount of rain and very cold weather we have had of late. Late varieties are so far looking well. *J. Wallis, Keele Gardens, Newcastle.*

—— Potatos after planting came up very irregularly, many gaps where they did not get above the surface. Early and second early are good, no trace of disease has been seen yet. *H. G. Wilks, Sandon Hall Gardens, Stone.*

Northampton.—Early varieties yield very well, but the quality is bad. General crops are looking well on heavy soils, but weak on the lighter. *Henry Turner, Fineshade Abbey Gardens, Stamford.*

Bedford.—The Potato crops are looking well at the present time. The disease is making its appearance on the cold, heavy land, and a dry time would now be very beneficial for ripening. *Geo. Ford, Wrest Park, Ampthill.*

—— Our Potatos are very fine this year. We have been digging from the open since the middle of May. The tubers are of good size, and the crop is above the average, and up to the present I have not seen any disease, but I hear it has made its appearance about the lower reaches of the river Lee. Late Potatos are very promising, and with the superabundance of wet the yield will be much above the average. Fine, dry, breezy weather is now much needed. *Wm. M. Baillie, Luton Hoo Park, Luton.*

Bucks.—We have lifted an early south border of Myatt's Ashleaf Kidney, which yielded an abundance of large and well-developed tubers of excellent quality, and entirely free from disease. Later kinds are also looking exceedingly well in every respect. The weather of late has been such as to cause some apprehension of disease, but a beneficial change has come. *G. T. Miles, Wycombe Abbey, High Wycombe.*

—— Potatos are looking very well, and so far no disease has been seen. Our earliest out-of-doors has been Early Puritan, which we began digging on June 14, and Veitch's Early Ashleaf on June 20. Clark's Maincrop is one of our best late varieties, and always produces tubers of uniform size. Snowdrop is the best in quality of any variety grown here. *J. Smith, Mentmore, Leighton Buzzard.*

—— The Potato crops, both in garden and field, are very promising, Veitch's Ashleaf and Myatt's taking the lead, both giving good yields. Our field crops consist of Magnum Bonum, Victorias, Schoolmaster, and Hebrons, all in robust health, and free from disease. *Giles Bloxham, Brickhill Manor, Bletchley.*

—— As yet Potatos have turned out very well, and are free from disease; but what the result may be as to the later varieties is doubtful—the weather is bad for them. At present they look remarkably well, and with fine weather there is every promise for a very abundant crop. *C. Herrin, Dropmore, Maidenhead.*

Herts.—This is a little too early to say what the Potato crop will be. The only varieties we are using are Ashleaf and Sharpe's Victor, both of which yield well, but the tubers are a little watery. The haulm of all sorts is very gross, requiring warm sunny weather, or the tubers will suffer. I am told that the disease has appeared in the neighbourhood; I have not seen it. *J. C. Mundell, Moor Park Gardens, Rickmansworth.*

—— Early and second early crops are now being lifted, and are good, clean samples. For a first early kidney Potato Sharpe's Victor is hard to beat; we have given up all others in its favour. Late kinds are looking well, and promise fine crops, if sunny weather would only take the place of these constant rainy days. No disease as yet reported. *J. Kiplin, Knebworth, Stevenage.*

WESTERN COUNTIES.

Gloucester.—Early Potatos all turning up well, plentiful, and of good size. Late ones looking well, and are much earlier than previous years. Disease is reported in the neighbourhood, but I have not yet discovered any on this estate. *A. Chapman, Weston Birt, Tetbury.*

Monmouth.—No trace of disease has yet been noticed, although the present state of the weather is favourable to its development. Ashleaf and other early sorts are good in crop, their tubers being fairly large, beautifully clean coated, and of excellent quality when cooked. Late garden crops look promising to be good, the haulm is robust, and firm in growth, and the foliage perfect. Field crops that were planted in good season also look healthy, and should the weather prove to be satisfactory, the crops will doubtless be excellent. *T. Coomber, The Hendre Gardens, Monmouth.*

Hereford.—Potato crops are looking well, but are sadly in need of a good heavy rain. Should the drought continue much longer, the tubers will be very small, and in the case of main crop varieties, they will ripen up prematurely. Early varieties are lifting well as far as regards crop; the tubers are rather undersized, but are of excellent quality when cooked. *A. Ward, Stoke Edith Gardens.*

Worcester.—The crops of all sorts give the greatest promise up to date, with no signs of disease in root or branch. Sharpe's Victor is an excellent first early, short-topped, and of good edible qualities. Field kinds are looking exceedingly well. Chancellor will ultimately become a favourite, having a robust constitution, and is an enormous cropper. *W. Crump, Madresfield Court, Malvern.*

—— So far there is no trace of disease in the crop we are lifting, which is above the average in quantity and of excellent quality; second earlies show signs of ripening off, but while the present stormy weather continues, they will be left in the ground, as they will be sure to swell; late kinds look remarkably good, and clean too. *Walter Child, Croome Court, Severn Stoke.*

Shropshire.—Earlies are a magnificent crop, and of fine quality. Sutton's King of the Earlies this year with me is grand in every way, while later ones are in the most robust health, and so far I have heard of no disease, although the weather is anything but detrimental to its advance. *James Louden, The Quinta, Chirk.*

Cheshire.—The Potato crops in this neighbourhood are looking extremely well, Sutton's Early, Regent, Ringleader, &c., are grown extensively for the Lancashire markets, all later varieties are growing vigorously, and I do not hear of any trace of the disease having been seen up to the present time. *Jno. V. Smith, Arley Hall, Northwich.*

SOUTHERN COUNTIES.

Middlesex.—Potato breadths generally looked very well prior to the 17th June, when the heavy flood of rain so saturated the soil that the disease has shown its presence in a marked degree, and many breadths of the earlier kinds look blackened and sickly. The later robust growers yet have a green healthy appearance, and with continued fine weather may yield a good clean crop of tubers. Generally there is good reason to believe that the breadth of early varieties will give a large percentage of diseased tubers. *Alex. Dean, Bedfont.*

—— Early Potatos have done remarkably well; such kinds as Veitch's Ashleaf, Myatt's Prolific, have been sound and free from disease; Covent Garden Perfection, Duke of Albany, and Gloucestershire Kidney have given abundant crops of large tubers. It is early to write of the later kinds, but they look very promising, and so far are free from the disease, but I am doubtful if we shall be free long after the excessive moisture of the last few weeks, and little sunshine. *Geo. Wythes, Syon House, Brentford.*

—— The early crops have been very fine, and free from disease. The main crop has made an abnormal amount of haulm, but at present there is no disease. Our field crop of Magnums and Beauty of Hebron is looking very well, with short haulm; they follow Cabbage and Rabbi in the rotation. Potatos in all the allotment grounds are diseased. *John W. Odell, The Grove, Stanmore.*

Surrey.—The early crops have been very fine, and excellent in flavour. Owing to the dull, late season

I have only lifted one quarter, consisting of Myatt's Ashleaf and Sharpe's Victoria—the latter has not done so well this season; the other kidneys promise to be equally good. Later varieties look promising up to the present, and there is no complaint of disease. Chiswick Favourite is the best Potato grown for late keeping. We have some now, which are excellent. *A. Evans, Lythe Hill, Haslemere.*

—— No disease at the present time has been observed, and excellent crops of the Ashleaf and early varieties have been dug. A little spot is showing on the later sorts; and, unless the weather keeps very fine, I fear the disease will spread. *James Gold, High Ashurst Gardens, Dorking.*

Kent.—The early Potato crop this season is good, fine tubers, and of excellent flavour. I am greatly in favour of Early Puritan, which I consider the earliest of all. Main crops at present look well; no disease as yet perceptible. In this district Imperator is considered the best late variety. *F. Moore, The Gardens, Blendon Hall, Bexley.*

—— Potatos have looked well up to the present time, but the blight is making its appearance now; and should the wet weather continue, I am afraid it will prove disastrous in late crops. Early kidneys have been a splendid crop, and good in quality. *Wm. Craik, Hothfield Place, Ashford.*

—— Potatos are looking well at present. We are now lifting good crops of Veitch's Ashleaf, which is our best early variety. Beauty of Hebron we rely upon for second early and later use. Slight traces of disease were found on July 16. *C. Sutton, Chevening Park, Sevenoaks.*

—— Early sorts good in quality and bulk. Later kinds growing much to haulm, and, if weather is favourable, likely to yield well. Small patches of disease showing themselves at places. *G. Don, Bedgebury, Hawkhurst.*

Sussex.—The Potato crop in light soil is excellent, but in heavy land the disease has made its appearance. Should the weather clear up, and we get more sun, all will be well; but if the heavy rainfall continues, the consequences will be serious. *J. Rust, Eridge Castle, near Tunbridge Wells.*

—— Potatos are yielding good crops, and the disease has not as yet appeared in the tubers, but the haulm in some places is completely black with it. *Alex. Reid, Jr., Possingworth Gardens, Cross-in-Hand.*

Hampshire.—Early varieties are good in yield and in quality, and second earlies are a good crop also. Disease has put in its appearance both in foliage and tubers. Late varieties are not looking well. *T. D. Myles, Appley Towers, Ryde.*

—— Potatos in this district promise well, very little disease presenting itself at the present time (July 18). Early varieties are good, and should a spell of dry weather be afforded us, an abundant harvest should be the result. The haulm of late varieties is strong and free from disease, but if the wet and cold weather continues, I am afraid the disease will do much damage. *A. Maxim, Heckfield Place, Winchfield.*

—— Myatt's Prolific was again our best early Potato, Sutton's Seedling the best second early for cropping and flavour. White Beauty of Hebron, a capital winter variety, is now largely grown in this neighbourhood in the place of White Elephant. Disease has made its appearance in nearly all gardens in this neighbourhood. *E. Molyneux, Swanmore Park Gardens, Bishop's Waltham.*

—— All early kinds are good, both in quality and quantity, and have no signs of disease; late kinds look well, and are very promising. I hear of two or three cases of disease in cottage gardens about a mile from here. *William Smythe, The Gardens, Basing Park, Alton.*

Berks.—Potatos good generally; early crops have turned out well. Just recently I have heard complaints of disease. In some places it is, I fear, owing to the heavy rains coming on rapidly. *Geo. Stanton, Park Place, Henley-on-Thames.*

Wilts.—The crop of early Potatos (kidneys) is good in every respect, the tubers being plentiful, of good size and quality, notwithstanding the fall of so much rain. The general crops in the fields and allotments are, as might be expected in a season like this, showing signs of the disease. This, unless we get a spell of fine weather at once, is sure to spread rapidly. *H. W. Ward, Longford Castle, Salisbury.*

—— The Potato crop is generally good, though some kinds have made a little more haulm than may be good for them, and often at the cost of the Potatos. Some complaints have come to our knowledge of the appearance of the dreaded disease, but anything like wholesale destruction is not heard of at present. Dry warm weather is much needed. *C. Warden, Clarendon Gardens, Salisbury.*

SOUTH-WESTERN COUNTIES.

Devon.—The Potato crop promised well until recently. The heavy and frequent rains, fog, and low temperature, however, have made the disease manifest itself most alarmingly. Scarcely a green leaf remains among the early sorts. Late ones have so far withstood it, and should more seasonable weather succeed soon, there is yet much to hope for. *James Enstone, Wear, near Exeter.*

—— The early Potatos are very good. Unusual vigour is seen in the Potato haulm, which is blackened by disease. I have never before seen them go off so rapidly. I have to-day (June 21) tried many sorts, both early and late varieties; and although the tops are nearly rotted away, there was very little disease in the tubers. Beauty of Hebron showed the greatest percentage of disease. The crops are very heavy. *Geo. Baker, Membland.*

Cornwall.—Potatos in garden and fields made fine growth, and the early crops were very good, but even these have not escaped the disease here this year; both tops and roots have been diseased for weeks past. *James Murton, Pencalennick, Truro.*

—— The early Potato crop in this neighbourhood has been fairly good, but the tubers smaller than usual, and the disease set in a month earlier, viz., the middle of June, owing to the wet and cold season. The late Potatos in the fields have made excellent growth, and if fine weather would set in, a full average crop would be stored. The Champion is still the favourite in this soil, which is black peat. Rooks have been very troublesome. *C. Lee, Boconnoc, Lostwithiel.*

WALES.

Glamorganshire.—Potatos were very prolific, and good in some parts, but disease began to affect them early in July, and is now rampant. All things point to a very bad Potato season. *J. Muir, Morgan Park.*

—— First and second early varieties of Potatos in this district are very badly affected by disease. I first noticed the disease here on July 2; but in many of the cottage gardens it was very prevalent in the middle of the month of June. In many instances, at the present date, the whole of the haulm is quite dead. Late varieties are looking well up to the present time; but should we not soon have a favourable change in the weather, the outlook for this year's crop is very disheartening. *R. Milner, Penrice Castle Gardens, Swansea.*

Pembrokeshire.—The early sorts were a good crop. Second earliest are below the average, and the tops infested with disease. Late crops are looking well, but there is rather too much haulm. The first disease spots were observed on June 27, and on July 1 we had to remove the haulm from a patch of second earlies, and it is now general throughout the district. *Geo. Griffin, Slebeck Park, Haverfordwest.*

IRELAND.

Since the following reports were sent us, the disease has made great havoc with the Potatos in Ireland, and fears are expressed that in some parts of the country there will be a Potato famine. Ed.

Armagh.—The early Potato crops is a very good one. We began taking up about three weeks sooner than usual on a warm border. There are no signs of the Potato disease at present. *Thomas Sheasby, Castle Dillon.*

Dublin.—The Potato crops are looking well in this neighbourhood, and give promise of an abundant yield. I have not seen any appearance of disease yet, and if the weather turn out favourable there will no doubt be a plentiful crop. *G. Smith, Viceregal Gardens.*

Kilkenny.—Owing to the cold and wet season early Potatos are very bad in quality; late varieties are very promising so far, and should the present fine weather continue there will be a good crop. There is very little blight around here, so far, but there are very bad reports from other parts of the country. *William Gray, Woodstock Park, Inistioge.*

Tyrone.—Potatos, as regards the tops, look well all round, probably too well, unless we should have a dry autumn to mature them. Early kinds are lifting well; but the quality is inferior owing to our having had so much rain. The tops of late varieties are, for the most part, too strong on rich land. *Robert Bell, Baron's Court.*

CHANNEL ISLANDS.

Jersey.—The crop of Potatos has been a fair average this season. The early spring frosts and the cold nights during the months of May and June were not counterbalanced by the hot sun during the days, which produced abundance of haulm without corresponding undergrowth. Under such circumstances the better varieties produced the smaller quantities, as there is not time for the assimilation of the necessary elements which constitute a good Potato. The quantities grown have been large in comparison with, and the prices better than last year, 4*s.* to 6*s.* per cwt. being realised; the largest Potatos, regardless of quality, realising the highest prices. It is not yet possible to render an account of the year's crop, as the farmers are still bringing Potatos to the weigh-bridge for sale and exportation. *Charles B. Saunders, St. Saviour's, Jersey.*

Scilly.—The early crop of tubers is a good one, but the late Potatos are badly diseased, which in a measure is due to the long continuance of wet and foggy weather. *J. Jenkins, Tresco Abbey Gardens, Scilly.*

KEW NOTES.

Catasetum naso.—All the Catasetums are what may be termed quaint looking, and C. naso is no exception. The plant in the Kew collection now flowering resembles in its habit other Catasetums, but the inflorescence is distinctly different from anything I have seen. The flower-spike carries six large flowers, the sepals and petals of which are pale-green in colour, faintly marked with tiny spots: the lip is large and cordate, the edges being slightly serrated, and in colour it is a dirty brown, and contrasts with the outer segments.

Dendrobium Findlayanum.—This variety, which should bear the varietal name of roseum, is now beautifully in flower at Kew. The plant, a good-sized one, is growing in a suspended basket, and has between forty and fifty pseudobulbs of good proportions. This particular plant is flowering quite out of its proper season, and its rosy-hued flowers are very acceptable, the bulk of the Orchid collection being now flowerless.

Cattleya superba.—The plant of this species noted was a healthy one growing in a basket. The dark crimson flowers which are produced from the later developed pseudobulbs, were borne to the number of four on one spike, and measured 4 inches in diameter.

Of other Orchids in flower, mention may be made of S. saccata, yellow, spotted here and there with crimson, Acineta chrysantha, Cypripedium Parishii, a very good variety; Vanda Roxburghii and Ornithochilus fuscus, with six spikes of flower hanging gracefully over the side of the basket in which the plant is grown. *P. W.*

FERN NOMENCLATURE AND THE FERN CONFERENCE.

The perusal of Mr. Druery's paper on this subject in your issue of August 9 (p. 155), has renewed the regret which I feel at not being able to be present at the Fern Conference; so, if you will allow me, I will make a few further remarks in your columns on the question of what it is desirable should be done at the present time under the auspices of the Royal Horticultural Society in regard to Fern nomenclature.

In the first place, I think it is very undesirable that the Society should attempt to interfere with the nomenclature of genera and species. They should leave all questions of doubt and dispute about these for the botanists to fight out amongst themselves at the botanical societies, in the botanical books and in the botanical journals. There are, broadly speaking, two different systems of Fern nomenclature. During the present century only four general handbooks of Ferns have been published—books in which all the genera and species known at the time were enumerated and characterised. These are:—Swartz, *Synopsis Filicum*, 1806; Willdenow, *Species Plantarum*, vol. v., 1810; Hooker, *Species Filicum*, five vols., 1846 to 1864; Hooker and Baker, *Synopsis Filicum*, 1868; 2nd, edition, 1874.

With the planning out of the system of classification adopted in this last, I had nothing whatever to do. The table of sub-orders and genera and the plates were printed off before my connection with the book began. In all these four books the general principle is followed, that between each different genus there must be a palpable and appreciable difference in sporange, sorus, or indusium. Presl, J. Smith, and Moore sub-divided the genera thus obtained, by making a fresh genus under each for every appreciable difference in veining. The first plan, as carried out by Hooker, gives 75 genera; the second, as carried out by J. Smith, 220. Considering how very near to another in life history, and in the structure of all the organs of fructification are all the Polypodiaceæ, which constitute three-fourths of the Ferns, I much prefer to follow the first plan, taking advantage of the work of Presl, Smith, and Moore, by keeping their groups founded on veining as sub-genera. What Mr. Lowe has done in the instances cited by Mr. Druery, is neither more or less than to follow the nomenclature of the latest general handbook of the order. But as I said before, I do not think the nomenclature of genera and species can be profitably dealt with by the Horticultural Society.

But there is a field of usefulness open to the Society in the direction of the reform of the names of garden forms; and this no one will doubt is appropriate work for them to undertake. There are about 3000 species of Ferns in the whole world; out of these about sixty species, or five per cent., grow wild within the limits of Britain. Out of these sixty, five species have proved to be excessively variable under cultivation. To the forms of these five species about 1800 Latin names have been given. Taking Fraser's Catalogue as a basis, and adding to the names there given, the unpublished names contained in Moore's herbarium now, at Kew, the names given under each species are, in round numbers, as follows:—

Athyrium Filix-fœmina	500 names
Scolopendrium vulgare	500 names*
Aspidium angulare	500 names
Nephrodium Filix-mas	150 names
Lomaria Spicant	150 names

These names are in Latin form, but a large proportion of them have never been published with descriptions, and so have no standing from a botanical point of view. If the plants are shown at a show, or come up before a committee, in the absence of a figure—for mere descriptions in such a case are of very little use—it is impossible to say whether any given name is applied wrongly or rightly. I think every one must admit that this is a very unsatisfactory condition of things.

If I had a free hand, the way I should remedy it would be as follows:—In the first place, I should attempt to subdivide these forms into varieties and monstrosities. In Scolopendrium the whole 500 names refer to monstrosities of one kind or another. In Filix-mas and angulare many of the names mean in a botanical sense varieties and sub-varieties. In Scolopendrium a large number of them would fall readily in subordinate rank under a primary monstrous from crispum, and another primary monstrous form cristatum. Under angulare a large number of them would fall in readily as sub-varieties, under var. tripinnatum, of Moore. The Society might nominate a committee to take the matter in hand, consisting, say, of Mr. E. J. Lowe, as representing age and long experience; Mr. Druery, as representing active recent work; and Professor Bower as a referee in drawing the line where varieties end, and monsters begin. I should ask them to throw out all names for which there are no figures or descriptions, or, if they take them in, to describe them in their report, and ask them to classify the leading garden forms, especially of the five species above named, under four groups:—

1st. Well-marked varieties.
2nd. Sub-varieties.
3rd. Leading monstrous types.
4th. Subordinate monstrous types.

If this were done, it would bring what is now a chaos into order, and this is just the kind of work with which the Horticultural Society may profitably employ itself. *J. G. Baker, Kew.*

—— In reply to your article in last week's *Gardeners' Chronicle*, I fail to see that it is very dreadful to adopt the acknowledged botanical names of the species. It is true that in 1867, in *Our Native Ferns*, I had not adopted Nephrodium for Lastrea, Aspidium for Polystichum, or Asplenium for Athyrium; but it is equally true that Hooker and Baker's Catalogue had not then been published. However, in order to prevent confusion, the old names have been appended as subsections, and in this, botanical usage has been also followed. This has, however, nothing to do with varieties. What is complained of is the cumbersome names of some of the varietal forms. I do not see what more could have been done at the first Fern Conference as regards nomenclature, beyond pointing out, as was done in Mr. Baker's introductory letter, that sooner or later an alteration must be made. It cannot be supposed that the names of more than a thousand varieties could have been discussed on one afternoon.

As regards my handbook, in a short time it will be in the hands of those who are anxious to condemn it before it appears; but it may at once be stated that the only alterations that have been made are in those cases where two or more varieties have been known under one name; and even in these cases I have not taken the liberty of renaming beyond simply adopting the name of the discoverer. However, the object of the handbook is to give an alphabetical record of the varieties, and also a distinctive number. The list will be useful even to those who may object to its arrangement.

As regards Athyrium and its deciduous character being a reason for not calling it an Asplenium, the evergreen Asplenium fontanum is botanically a near ally, and the deciduous feature has too much to do with temperature to allow its adoption as a proof of distinctness. It cannot be denied that a name is simply a symbol by which it may be recognised. There are names even longer than divisilobum plumosum densum but taking this, if classed in sections, as in the case of Narcissi, much of the objection will disappear; densum, cristatum, imbricatum, &c., may be contained in a section, plumoso-divisilobum.

No hard or fast line can be drawn as to what should be kept or what thrown away; there are forms that are botanically interesting, if not horticulturally beautiful. The botanist recognises changes in structure, whilst the horticulturist aims at beauty of form; but why should the former be nameless? The changes required are those where the names are unwieldy, and against the acknowledged rules of botany; a weeding out of inferior varieties, and the adoption in future of names as short as possible, even if they do not describe the various characters. Acrocladon was coined by myself many years ago (1856), and given to a Scolopendrium, found at Ambleside, that was finger-ended, and this is what the name implies. It has since been used to denote excessive branching, but we have, nevertheless, not been misled by its use, as the (branched) acrocladon of the Lady Fern. Mr. Druery's suggestion of a collection of pressed fronds is good; in fact, this is being done, in order that specimens may be deposited in the Kew Herbaria for future reference. *E. J. Lowe.*

* In Lowe's *Native Ferns*, 185 of these are figured, and nearly 400 described.

ROYDON HALL, MAIDSTONE.

This charming residence of Lady G. Lennox, with its Tudor gatehouse and quadrangle still intact, is, as far as the gardens surrounding it are concerned, undergoing considerable additions and alterations in the form of new glasshouses, gardeners' lodgings, store-tanks for water, from designs furnished by Mr. F. Jeffery, the gardener and bailiff to Lady Lennox. The house is situated some little distance up a steep slope, and, behind, the gardens stretch up the hill in a series of terraces and slopes. Springs abound on the hill-sides, rendering terrace-making rather uncertain and difficult of accomplishment, as made earth is readily removed by trickling water, and subsidences occur despite every precaution.

Conifers of good size, and finely proportioned, occur all about the place, also Holly, Yew, and Laurel hedges, some of which are tall and thick; entailing, as such handsome adjuncts to a garden always do, much labour with the knife and shears—more especially the knife; the attempt to trim them by more slashing methods, where labour is scarce, as is the case in most gardens, ends in spoiling their appearance, at least for a short time after the shearing is done. The entrance-lodge at Roydon is a very neat and pretty building, and between it and the house is a nice avenue of Sequoia gigantea.

FRUIT REGISTER.

STRAWBERRIES AT BURGHLEY GARDENS

A visit to these famous gardens is always both pleasant and instructive; it is doubly so when Strawberries are in season, as Mr. Gilbert makes a specialty of them. The present season has been a very favourable one for quantity of fruit, but the heavy rains we have had in this neighbourhood during the ripening period have made the flavour inferior and spoiled a portion of the crop. Some of the earlier kinds were over at the time of my visit (July 11), among them Noble still maintains its reputation as one of the heaviest croppers, giving very large deeply-coloured fruit, and swelling them off well until all are ripe; it has a fine vigorous constitution, very much like Foreman's Excelsior, but is very poor in flavour. Vicomtesse Hericart de Thury had borne a very large crop of good-flavoured fruit, rather small for dessert purposes, but a first-rate variety for preserving; the plants of this kind had been forced last year, and then planted outside. The fruits are not so large from these as from early runners of the previous season, but the crop is heavier. Burghley President is one of the best in some soils for very large, deep-coloured fruit, and is also of good flavour; it does remarkably well in the fine sandy loam at Burghley, but will not thrive in a dry limestone soil, and is of no use whatever for forcing. Aberdeen Favourite is thought highly of by Mr. Gilbert for its deep colour, strong constitution, and general good qualities; it is somewhat early, and was almost over at the time of my visit. Sir Charles Napier is still one of the best for a mid-season

variety, where the soil suits it; it is, however, rather tender, and is also objected to by some persons on account of its acidity; this is not noticed so much in a hot dry summer as it might be this season. It is still one of the best varieties for forcing, if good strong plants are obtained early, and being very firm in the flesh, is well adapted for sending long distances. La Grosse Sucrée is also a first-class variety for forcing, but is of no use whatever for outside culture at Burghley. A. F. Barron has again given some very fine fruits of a beautiful colour, and first-class quality; it is of the same type as Sir C. Napier, but not such a strong grower. The old favourite, British Queen, was bearing a grand crop of very fine fruit from plants that were forced late last season; they are now 2 feet across; its well-known good qualities, still unsurpassed, require no further comment. Commander (Laxton) had a heavy crop of fine fruit, first-rate in flavour; it belongs to the British Queen class, but is more vigorous as a rule than that variety, and looks very promising for field culture, the fruit stems being stouter and taller than any other variety that I have seen. Oxonian, generally the best late variety at Burghley, has not done quite so well this season as usual, possibly owing to late frosts; in some soils it is well not to allow this kind to fruit the first season after planting, but to encourage growth as much as possible. Eleanor had a heavy crop of fine large fruits on one-year plants. This variety is perfectly distinct in every way from Oxonian, but is often confused with it, and sometimes said to be the same thing. Jubilee (Laxton) had a grand crop of fruit, many of which were quite green, so it is evidently a late variety, and worth attention. La Monstrueuse was almost over; a few of the latest fruit that remained were fine and of very good flavour for the season. Waterloo was bearing some enormous fruit; it is one of the finest Strawberries I have seen for size, colour and flavour out-of-doors, but is a very shy cropper. and no better in this respect when grown under glass. Auguste Nicaise does not succeed so well outside as when grown in pots; it is a fine variety for a late crop under glass, and is one of the most vigorous of growers both in foliage and fruit. I gathered one fruit of it this season weighing 2⅓ oz., and measuring 3 inches by 2½ inches in diameter, and have had many others 2 oz. each. It is rather pale in colour, but of good flavour under favourable circumstances. Sir J. Paxton, a well-known standard variety, was doing well, and giving some very fine fruit, but not such a heavy crop as some of the other kinds. Last, but in no sense least, comes Mr. Gilbert's seedling, which he has named Chief Secretary. This was almost over; enough remained to taste its good flavour and note its fine size. It was easy to see a good crop had been gathered. As to constitution, it stands head and shoulders above its fellows and looks as if supports for nets will not be required where it is grown, the foliage standing up to a great height above the fruit. *W. H. Divers, Ketton Hall, Stamford.*

Laxton's Latest of All Strawberry.

Mr. Laxton is to be complimented on the introduction of this fine Strawberry. Last August I planted about 50, and this year many of them have produced fruit, turning the scale at 2 ozs. without the plants having had any special treatment. The plant is a very free grower, and when better known it will be generally grown. The flavour this year has been pronounced good by our employer, and the weather has not been favourable for imparting flavour to any fruits, so that in an ordinary season it should be excellent.—*J. Anning, Digswell House, Welwyn.*

A Large Tomato.—Mr. T. Hicks, gardener to Mr. William Porritt, at Tor Side, Helmshore, near Manchester, has this season grown a Tomato of extraordinary size. It is a Hathaway's Excelsior, and was grown in a 12-inch pot. It weighs 23 oz., and notwithstanding its great size, is perfectly sound.

Colonial Notes.

THE CEYLON BOTANIC GARDEN.

I must not omit noticing, says an ex-Governor after four years' absence, the improved condition of the Botanical Gardens, which redounds to the credit of Dr. Trimen and his assistants. The Peradeniya Gardens were always one of our show places; they are now more deserving of a visit than ever. The park sward is a model of what grass grounds should be; the nomenclature of the trees is simple and effective, and gives all necessary information to the ordinary visitor; while the scientific botanist is always sure of a hearty welcome from the Director.

The Garden of Hakgala is now one of the most beautiful spots in Ceylon, and is worth a pilgrimage, and the garden of tropical products at Henaratgoda is well kept and most valuable, by its display of various products, some of which are being cultivated, and others may possibly be cultivated with advantage in the low country. There is one disparaging remark which I am obliged to make in regard to this garden, namely the protection afforded in it to thousands of flying foxes. It is a cruel hardship to the native owners of fruit trees that these voracious bats should be protected, indeed encouraged, in a government institution. It is impossible to calculate the loss caused by the damage of these creatures, which think nothing of a journey of 20 miles at night to rob some garden. *W. H. Gregory, in Tropical Agriculturist.*

The Apiary.

THE SEASON.

The honey season may now be said to be over in all parts of England, except in those places favoured with Heather. It has been a most disappointing season—full of promises at the commencement never to be realised. Our own bees were particularly strong at the beginning of the season, and brought in some honey. The constant wet days in June and July caused them to consume large quantities for the purposes of breeding, and there will be little honey to take. In many cases a warm day has brought out many swarms in this locality. This fine day has been followed, perhaps, by a week's weather, to the utter discomfiture of the swarm, unless fed. Great care must be exercised during the month of August in examining the stocks, to see that sufficient food is left for the bees. It is probable that many stocks which have not swarmed will be found capable of taking care of themselves; but swarms certainly will not, and must be fed if they are to live through next winter. As a proof what feeding will do to a swarm, the writer had a good swarm on June 12. This was put into an immense glass hive of an octagonal shape, and fed at once. Wet days succeeded, but this swarm cared for none of these things, and went on thriving and building comb. We have looked at it to-day (July 28), and find this large hive nearly full of comb and a great deal of stored syrup. Such a swarm as this would be likely to produce an immense surplus another year, if all goes well. Hints will be given further on these matters when hives have been examined generally all over England, and the general state of things is known.

From many quarters we hear that foul brood is spreading at an alarming rate. By many it is thought that this is owing to the introduction of foreign bees. We hear of the Punic, the Carniolan, the Ligurian, Cyprian, and many others, and each fresh bee introduced is to eclipse all others that have gone before. There was once a South Sea Bubble, and we are much inclined to think that a bee bubble looms on the horizon. Every bee we hear of is the coming bee till another is introduced. We have formerly spoken favourably of the Carniolan bee, but from what we can gather, do not think very much of the others. There seems to be some truth in the statement that this great mixture of bees is not for the general benefit, and if some of the great care bestowed on the foreigners were bestowed on English bees, things would, we think, be better than they are. *Agnes.*

The Orchid Houses.

The Cool-houses.—Preparations should now be made for repotting Odontoglossum crispum and its varieties. Those who are dependent on gatherers of sphagnum moss for their supply, should order the necessary quantity at once, so that it may not be wanting when the work of potting commences. The advantages of repotting these plants now does not rest solely as some may suppose, on there being less work to be done at this season, but because these plants root faster, and make more growth during the next six months than they do between the months of March and September. Another point in favour of autumn potting is the beneficial effect of night dews on Odontoglossums, and to admit these, the top ventilators should be opened widely at night in September, but no fire-heat should be given, or no benefit will be derived. This keeping of the foliage moist by night, and the gentle dewing over that it gets by means of the syringe by day, soon cause the roots to make a start into growth. The only materials necessary to grow these plants satisfactorily are sphagnum moss, peat, leaf-soil, and silver-sand, and the leaf-soil should not be much decayed, and the more open the materials are, the better will the plants make roots and grow. I would advise that Odontoglossums be rather stinted for pot-room than be overpotted, and if the right size of pot is not in stock, then a larger quantity of potsherds should be mixed with the potting materials, if the pot used is larger than is desirable. When repotting, all the old materials should be carefully removed from the roots, not breaking any of the latter, or the growths following will be, in consequence, smaller. Do not overwater, or roots which may have been bruised in removal will be apt to decay. A good plan is to have a pailfull of rain-water at hand, into which the pots should be quickly dipped to settle the materials on the top, but not to saturate the potting materials. No water will be required at the roots, except what finds its way down the leaves from the use of the syringe. *A. G. Catt, Parkfield Gardens Hallow.*

Plants and Their Culture.

The Inmates of the Greenhouse.—The plants in this house which make late growth will by this date have become sufficiently established to warrant removal for some few weeks to the open air. Exposure to the outer air will assist in maturing the new wood, and keeping the plants clean. Indian Azaleas are subject to black thrips, and a thorough syringing with tobacco-water and soft-soap should be given them at the time of removal, the syringe being daily employed on them in the evenings of bright days. The work of repotting any of the old plants which may require to be shifted may now be done, and being mindful that these plants do not make strong roots, a large shift should not be given to them. Firm ramming of the soil, good peat, some charcoal broken fine, and a liberal quantity of coarse silver-sand is what Azaleas require, and shifting them only when it is really required.

Ericas and Epacris should get full exposure, as most of them will have made their growth, and care must be taken to protect their pots from the sun's rays. Early flowering Camellias should be put in a sheltered place in the open, plunging the pots in cocoa-fibre, clear of the drip from trees, and give them full exposure to the air. If the flower-buds are too thickly placed, the weaker ones may be broken off, thus assisting those left on the plant. A damping over in the evening should not be omitted after warm days; after this period do not let Camellias suffer for want of water at the root. Our plants do much the best that are fully exposed through August and September, few buds having dropped in the winter and spring.

Show and fancy Pelargoniums, placed in the open to ripen, will require much less water. The early lot of plants will be ready to have each shoot cut back to a couple of eyes. Cuttings may be struck from the

ripened wood; but I do not advise those with limited means to follow this old practice, but to strike young shoots in the early part of the year, and these soon make nice plants. If rainy weather should continue, the old cut backs should be placed in frames. When well broken repot into smaller pots, and place them in a cold frame. The early Cinerarias will now require a shift into 6-inch pots, which should be final; others, later, will also require repotting before getting pot-bound. Primulas require similar treatment to Cinerarias. Herbaceous Calceolarias should be potted from the seed-pans, as soon as large enough to handle conveniently. The smaller and later seedlings should not be neglected, as these are often the best plants; the strongest and earliest being generally of one colour.

Salvias should be abundantly watered with clean water, and with manure-water. Shift Bouvardias into 48's, and the larger plants into 32's, watering them sparingly for a time.

Late-flowering Fuchias may now get their last shift for the season, and their shoots stopped once when the pots are full of roots. Fuchsias in bloom require liquid-manure to prolong their season of flowering, taking care to remove faded flowers daily.

Vallotas, as they come into bloom, should be put in a dry cool place, so as to prolong their beauty, damp causing shrivelling of the flowers. The useful Plumbago capensis may now be propagated, the young shoots striking freely in sandy compost in a close warm pit. The older plants of the same may be liberally supplied with weak liquid manure. As few ties should be given as possible when this plant is used as a pillar or roof plant, it looking much better when but little confined. Chorozemas and Pimelias are liable to be infested with red-spider at this season, and a sharp look-out must be kept for these and for mildew. *Geo. Wythes, Sion House, Brentford.*

Fruits Under Glass.

Pot Vines.—Vines for starting in November next should now be out doors exposed to the sun, in order to thoroughly ripen their shoots, the pots being screened from the direct rays of the sun, and means taken to protect them from heavy rain; and the canes should be secured to a sunny wall. The plants must be well supplied with water, which should be diminished in quantity as the canes mature. Preserve all the older foliage, but cut back closely the laterals to the bud at the base near the main stem. A few laterals may be left on the stem at intervals for a short time, but the upper laterals should be removed first.

The Earliest Vineries.—The Vines in these will require to have their shoots ripened, which is best done by maintaining thorough ventilation and a dry air in the houses. Red spider must be kept down by means of the garden engine; stop all young shoots and shorten in the laterals. Borders inside will probably require to be watered and heavily mulched, to check somewhat the evaporation that is always going on, to the detriment of the roots near the surface. Borders outside may, on the contrary, require protection from heavy rains, seeing that a wet border encourages late growth. If the Grapes have shanked, and it is thought that the borders are unhealthy, a decision should be come to as to what shall be done. If a portion of the inside or outside border is to be renovated, preparations should be made for doing it early in September; and it may here be confidently stated that Vines operated upon at that time, will carry good crops the following season.

Let all who have unhealthy Vines take courage, and go boldly to work, good results being almost certain to follow if the work be properly carried out; in fact, I know of no plant that is more grateful for supplies of healthy soil than old Vines, and extremely bad must be their condition if no improvement follow. Begin at the outside of the border; fork carefully away as much old soil as possible, but preserving every root, and bundle them up in damp matting. Wheel away the old soil, relay the drainage, adding to it if necessary, and put a fresh covering of turf, grassy-side downwards, over it. The rest of the border should consist of turfy loam, gritty and calcareous as possible, and mixed with wood-ashes, old mortar, and crushed bones at the rate of one in six. Make the soil as firm as possible, laying out the roots horizontally as the work proceeds, the tips being laid so as to slightly point upward. A wall of turves may serve for the boundary. A good soaking of water should be afforded the border a few days after completion, and a mulching of old Mushroom manure may be laid over it. Sometimes the addition of bones to the compost containing undecayed herbage will cause a slight fermentation, but there is no harm to be apprehended from this, for it is helpful to root-action when not excessive; but if it should reach 80°, a few good-sized holes had better be bored in the border, and kept open for a few weeks.

Houses of Muscats and other thin-skinned varieties now ripe should have the ventilation so managed, that no condensation of moisture on the berries during cool damp nights takes place, or these will get spotted, and decay set in; keep the temperature cool and also dry, or shrivelling of the berries will commence. Keep a sharp look-out for a small species of spider, which weaves its web in the bunches, and which feigns death on being disturbed; the only remedy is to catch them.

Madresfield Court Grape should now be in perfection. It is a Grape which, if kept long after being fully ripe, is apt to lose some of its colour, and become foxy, especially the stalk-end of berries; and the Black Hamburgh suffers in the same way, still the flavour does not appear to deteriorate—only the appearance. It is a change that generally takes place when the weather is warm and dry, or the foliage has been injured, and the berries keep the plumpest and of the best colour under the shade of the foliage. [Some gardeners put paper parasols over the bunches. Ed.]

Late Grapes.—During this month and the next every means must be taken to secure the finest colour in these Grapes, the keeping and appearance of the fruit depending in a great measure on this matter. Good colour is brought about by the careful admission of fresh, warm air, day and night, and the avoidance of cutting draughts, even during sunshine, the neglect of this precaution being not unfrequently the cause of shanking. Ventilation in a season like the present requires skilful care, and it should be the rule not to open the top and bottom ventilators at the same time.

Liquid manure should be withheld from the roots during the colouring of the berries, unless the Vines are overcropped, when perhaps its application is the lesser of two evils—jet blackness not usually accompanying a too heavy crop. Gros Colmar requires the longest time of all black Grapes to finish, and it should always be kept two months or more on the Vines after colouring, during which time the skin becomes thinner and the flavour improves. During the ripening period all Grapes are benefited by a moderate amount of atmospheric moisture, and also during the final swelling, but it must be gradually diminished as ripeness proceeds.

It is not too late to inarch Vines growing in pots on to permanent Vines, and the Muscat will be found an excellent stock for other varieties. *Wm. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

The Ingathering of Pears.—Pears being scarce this year, it becomes desirable to lengthen out their seasons by gathering the fruits at intervals as they arrive at maturity. To show that periodical gathering is of great use, I may mention that Williams' Bon Chrétien, which I gathered at intervals of ten days from the same tree, kept up the supply a month longer than would have been the case if all the fruits had been gathered at once. It is the same with Jargonells, which we usually pluck when ready and place in a layer in boxes put in a warm cupboard, or if needs be over the hot water pipes. The same rule applies to all and especially to early varieties. Citron des Carmes, Summer Franc Real, and Belle de Bruxelles should be nearly ready to gather, which should be done carefully, for no matter how hard the fruits may be, the least pressure is liable to bruise the skin and set up decay.

No Pears are so good when allowed to fully ripen on the trees, as those timely gathered. Any trees heavily cropped should have the fruits thinned, the smaller, deformed and worst placed ones being taken first. Fruit trees affected with black aphis should have the shoots cut back, thus ridding the trees of many insects, and where practicable the trees should be washed with clear water, applied with considerable force by means of the garden engine or the syringe. Soap-suds may be employed on the worst-affected trees.

This year the weather conditions are such that our usual tactics will require to be changed too, the watercan and hose being laid aside where the soil is of a retentive nature, and should showery weather continue, much of the mulching over the roots of the trees must be removed, so as to afford no hindrance to the ingress of the heat. Red spider may not give cause for trouble, but mildew is likely to abound; in fact, it has already taken hold of our Gooseberry bushes, foliage and fruit on quarters somewhat shaded being affected by it. Some varieties of Peaches are subject to it, notably Royal George, and if this variety should become affected, a close watch should be kept on it and others.

Sulphur is the best antidote to mildew, and I dislike to dust flowers-of-sulphur on to the woolly skins of Peaches; but it is the safest thing to apply to fruit trees in the open, and it may be dredged freely into every part of the affected trees, or made into a kind of paste with a little water, and mixed largely with water afterwards, and applied with a syringe. *A. Evans, Haslemere.*

The Kitchen Garden.

The Summer Treatment of Cauliflowers.—Whatever may be said in favour of raising Cauliflower plants for an early crop from seed sown in heat, I still adhere to the old practice of raising a good stock at this season of the year for wintering in cold frames or hand-lights. So far as I have observed, plants raised early in heat if of the Eurfurt type, if great care be not bestowed on them are apt to get a check in some way or another, and fail to form good heads—or they button, which is worse. On the contrary, those which have been wintered in frames, if they are not deprived of air in fine weather, or not covered up, except slightly in very hard weather, seldom fail to bring fine heads in the second week of June. From the middle to the end of the present month is the time during which seed may be sown, sooner or later according as the locality is early or late. For this sowing I find that the Walcheren, the Early London, and where Cauliflowers with large heavy curds are required, Veitch's Autumn Giant are the best varieties, forming as they do a capital succession. The Early London usually turns in the first by about one week, and the Giant comes into use the last of all. The seed should be sown thinly on beds which have been well prepared, and are situated on a warm border.

Protection from loss of seeds by the birds must be given the beds, and one precaution is to roll them in powdered red lead; another, is to put nets over the beds. When the plants are large enough, they should be pricked off in their winter quarters from 6 to 8 inches apart, or put in small pots and plunged up to the rim in earth or coal ashes. In case the first lot raised should get too forward, it is advisable to make a second sowing at an interval of ten days. The ground to carry the crop should be deeply dug and well manured; and in the case of wintering them under handlights, these should stand on beds 4 feet wide, and the handlights formed in line down each bed at about 2½ feet apart. In the spring all the plants but four in each may be planted elsewhere, those remaining forming the earliest heads.

Peas.—If dry weather continues, see that the Peas do not suffer, especially those in bloom, and when applying water to the soil, do it thoroughly. Liquid manure in some form should be given plants which are in pod, so as to prolong their bearing.

Seeds that may be Sown.—The sowing of Cabbage should be made forthwith in a sheltered spot, and from this sowing many plants may be drawn for transplanting in the spring, which will succeed those that were autumn planted.

Onions.—The seeds of the different varieties of Tripolis, White Lisbon, and Welsh should be sown in drills, the larger-growing varieties at 1 foot apart, and the smaller at 8 inches, and if the soil be very dry, water the drills before sowing the seeds. Chervil, Radishes, and Mustard and Cress may still be sown at short intervals if the demand for them be constant. Lavender, Tarragon, and other herbs should now be cut and slowly dried; and if not already done, get the required winter stock bunched and hung up. *H. Markham, Mereworth Castle, Maidstone.*

EDITORIAL NOTICES.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

NEWSPAPERS. — *Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

WEDNESDAY,	Aug. 20	Jersey. Newcastle (three days). Shropshire, at Shrewsbury (two days). Wilts, at Salisbury.
THURSDAY,	Aug. 21	Royal Horticultural of Ireland, at Dublin. Royal Horticultural of Aberdeen (three days).
FRIDAY,	Aug. 22	—Devon and Exeter.
SATURDAY,	Aug. 23	—Leith.

SALES.

MONDAY,	Aug. 18	Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	Aug. 19	Greenhouses, &c., at Bow, by Protheroe & Morris.
THURSDAY,	Aug. 21	Glass Erections, &c., at the Hornsey Nursery, by Protheroe & Morris. Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Aug. 22	Imported and Established Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—61°.7.

Fruit Evaporating.

At the meeting of the Royal Horticultural Society on Tuesday last, attention was directed to an American apparatus, which has for its object the drying or evaporating of Peaches, Pears, Apples, and other fruits, so as to render them marketable commodities long after they would be so in a natural condition. These evaporated fruits are produced in vast quantities, and have become regular articles of trade in all parts of the United States, and are slowly making their way into the markets of England and the European Continent. Across the Atlantic they are in constant use, and are highly appreciated; and we are told that the cost of transforming fresh fruit into the condition of evaporated fruit as it is met with in what in this country are called Italian warehouses—the American equivalent we are unacquainted with—including packages, carriage, middleman's commission, retailer's profit, &c., is no more than admits of their use by the consumer at a reasonable price, and that the grower secures a remunerative profit. We have no reason to doubt this statement, and can only hope it is true; for if it is, we can see no reason why the English fruit-grower may not also become a fruit-evaporator, a supplier to English shopkeepers of a useful article of food, and at the same time a profit-earner for himself by means of fruit which, in plentiful seasons in its natural condition, is too often of no value whatever. If this be possible, then fruit-growers in this country will owe a debt of gratitude to Mr. Badger for drawing their attention to American fruit-evaporators.

There appear to be two typical forms of fruit-evaporators in use in the United States: one is a hot-air chamber placed perpendicularly above a stove in which either coal or wood may be burned; in the other the hot-air chamber, heated in precisely the same way, is arranged obliquely away from, instead of perpendicularly above, the stove. Each type has its advocates. But the truth seems to be that both kinds of evaporators dry the fruit efficiently, and make it a marketable commodity, which is easy of transport, saleable at a moderate price, and of almost universal use. The point which Englishmen have to consider is, whether this transatlantic apparatus is likely to be of service to them, and we gather from Mr. Badger's paper, read before the Royal Horticultural Society, that this is a point to which he has devoted attention, and that the conclusion he has arrived at is, that the American evaporator is as likely to be useful in this country—though on a smaller scale—as it has been and is in the country of its birth.

The use of evaporators in America began some twenty years ago, and originated in a felt necessity to provide some easily available method of dealing with perishable fruit. The early form of the existing evaporator was soon originated, and experience and enterprise have led to the development of numberless improved varieties; but so far as our investigations have informed us, they all seem to possess one common excellence—they enable the fruit-grower to manipulate his fresh fruit, for which he cannot find a remunerative sale, at small cost, so that he can wait one month—or twelve if need be—before he sends it to market in a form which commands a remunerative price for the raw material, plus the cost of converting it into a manufactured article.

Evaporators are made in several sizes, from small ones capable of evaporating 3 to 5 bushels of green Apples per diem, to such as will evaporate ten times the quantity. The smaller apparatus costs £5, and the larger sizes £50 and upwards. One firm makes an evaporator costing £135, which will dry 150 bushels of Apples per day. They are thus available for all classes of fruit growers, whether on the smallest or largest scale. In America, fruit evaporation is developing into a most important industry, and in one district, within a radius of 40 miles, Rochester, in New York county, being the central point, no less a sum than £297,000 was secured for evaporated fruits in the year 1888. In the same year, in California, the value of similar products amounted to £431,590. Twenty years ago, evaporated fruits were practically unknown.

It is needless to point out that the fruit production of this country is on a much smaller scale than in the States, but a method of dealing with fruit which enhances its value as a saleable commodity, and postpones the time when it must be sent to market, and thereby gives the producer some chance of selecting the most favourable time to sell it, is apparently worthy of consideration by the British fruit growers. Mr. Badger made a suggestion which we cannot but support. He suggested that some landowner in a fruit-growing county might with advantage set up one of these American evaporators, so as to give his tenants and neighbours the opportunity of testing its value. Probably, if fruit evaporation ever takes hold in this country, it will do so as an independent industry, and enterprising men who venture on it will set up the apparatus in suitable localities, and do the whole of the evaporating for the entire district—either buying up the available fruit at the lowest price on their own account, or converting the green fruit into the evaporated commodity at an agreed price per bushel on account of the grower. The subject was alluded to, and an illustration given, in our issue for September 7, 1889, p. 277.

ROSCOEA PURPUREA. — This plant, of which we give a figure at p. 191, is a good illustration of the old adage, which tells us that we "never know till we try." Who was it, we wonder, who ventured first to plant out this very tropical-looking plant? We cannot thank him as we ought, for we do not know who he was; but whoever he may have been, he has deserved well of his fellows for extending our knowledge, and all that that implies, and for adding a new adornment to the flower-border. The plant is closely allied to the Gingers, Alpinias, and Hedychiums; one of which, H. Gardneri, is nearly as hardy as the Roscoea. Up till recently, Roscoea has been grown as a stove plant, but it needs no such coddling, as in two places, so climatally different as the Thames Valley at Kew, and Canon Ellacombe's Garden in Gloucestershire, it thrives perfectly well in the open border. It is of no use for table decoration, or for cut flowers, but may the time never come when these requirements are suffered to outweigh the other interests to which the garden is capable of administering. Roscoea purpurea is a native of Nepal. It is one of the Gingerworts, and its general appearance is sufficiently shown in the sketch made for us by Mr. Allen, at Kew. The flowers, which open in succession, are of a purple colour.

THE POTATO CROP.—It appears, from the detailed reports with which we have been favoured, that in Scotland early sorts have turned out well, but the tubers are watery and flavourless in those parts that have been afflicted with much rain and unseasonable coldness. Late crops promised well, and although the haulm was of great length, it is deficient in substance. In some Scotch counties 2° of frost were experienced on June 8, doing some amount of injury to the early varieties. In Southern Scotland, the great Potato-growing district, Earlies were good of crop and quality, and there were, at the time of sending the reports, no signs of disease, although the general opinion pointed to the imminence of an attack. In Wigton the disease had then appeared with some amount of virulence. In Northern England the crops were very promising; Earlies were late in coming into use, and little disease was observed. In the Eastern Counties the crop is spoken of as good, but the quality various, and a few traces of disease have been noticed. Generally, the growers in the Midlands speak favourably of the crop, although there are exceptions, and there is a little disease. The crop in the West is above the average, and at Hereford evil results were anticipated from the then prevailing drought, now happily, we imagine, averted; and, with the rain, the disease has come—in some parts badly. In the South, we read only of good crops, and the promise of them, and occasionally of the appearance of the disease on foliage and tuber. Irish crops were of much promise, but we have since heard of the great inroad made by disease in western parts of the island, and so alarming are these becoming, that a Potato famine, it is feared, will overtake the inhabitants.

ROYAL HORTICULTURAL SOCIETY.—A national exhibition of preserved fruits will be held in the Drill Hall, James Street, Westminster, S.W., on Tuesday, October 14, and the two following days. The Society having already held Three Great Exhibitions of Apples and Pears, in 1883, 1885, and 1888, at which nearly 20,000 dishes of fruit were exhibited, and holding smaller exhibitions usually at fortnightly intervals throughout the year of the smaller and more perishable fruits, wishes now to draw attention to the great advance that has been made during the last quarter of a century in the preservation of fruit

for winter consumption, and invites the co-operation of all who are interested in the subject. For convenience in comparing the different exhibits, it is proposed to divide them into the following classes:—

Class I. Jams.—Strawberry, Green Gooseberry, Gooseberry, Currants (Black, Red, and White); Raspberry, Raspberry and Currant, Cherry, Plums (green and ripe); Greengage, and others.

Class II. Jelly.—Currant, Plum, Cherry, Greengage, Damson, Medlar, Quince, Apple, and others.

Class III. Syrup.—Strawberry, Gooseberry, Currants (White and Red), Raspberry, Cherry, and others.

Class IV. Fruit Vinegar.—Raspberry, Black Currant, Elderberry, and others.

Class V. Bottled Fruits.—Gooseberries, Currants, Raspberries, Raspberries and Currants, Cherries, Plums, Greengages, Apples, Apricots, Cherries, Morello Cherries, Cherries and Currants, Red Currants, Black Currants, White Currants, Damsons, Greengages, and others.

Class VI. Fruits Preserved Whole in Syrup.—Siberian and other Crabs, Pears, Strawberries, Cherries, Raspberries, Plums, mixed fruits.

Class VII. Fruits in Spirits.—Cherries, Mulberries, Blackberries, Black Currants, and others.

Class VIII. Crystalised and Candied Fruit.

Class IX. Dried Fruits.—Prunes, Raisins, Dates, French Plums, Figs, Nuts, and other commonly known foreign fruits, are excluded from this class, unless in some novel or unusual form or variety.

Each class is divided into British-grown, and Colonial and Foreign-grown fruit. The articles shown in Class I. must be in 2 lb. clear glass jars, those in Classes II., III., IV., VI., VII., in 1 pint bottles of clear glass; in Class V., in 1 quart bottles; and those in Classes VIII. and IX. in 1 lb. glass jars. Only three jars or bottles of any one kind can be shown. The Council of the Society retains the liberty of declining any proposed exhibit which it may consider either unsuitable or superfluous. Medals, Certificates, &c., will be granted by the Council on the recommendation of the judges. Exhibitors are invited to send everything, as far as possible, in threes, any one of which the Council (or the judges delegated by them) must have full right to open and taste at their discretion, the remaining two being left on exhibition. All intending exhibitors must give notice, in writing, to Mr. Barron, Superintendent, Society's Gardens, Chiswick, on or before Wednesday, October 8, stating the class or classes in which they intend to exhibit. Colonial and foreign exhibitors should make early arrangement, either directly, or through a London agent empowered to act on their behalf. All exhibits must be removed from the Hall on Thursday evening, the 16th, and the Council will not hold itself responsible for any damage done to any of the exhibits.

Masterly Inactivity.—Mr. Pearson's recommendation to his fellow fruit growers to pursue a policy of "Masterly Inactivity," see p. 162, in the presence of caterpillar and other blight and pests, calls for some remark. In the first place, the masterly inactivity comprises protecting the birds, and manuring the trees. Good! we approve of masterly inactivity of that kind, and wish, for the sake of progressive improvement, there were more of it. Next, the recommendation of Mr. Pearson appears to us to emphasise the necessity of public experimental stations and trial-grounds. It may be well for the business-man to stick to his business and not try experiments; indeed, men of business can hardly be expected to spend money and time over trials and experiments which may or may not benefit them. But, and herein comes our qualification, it is in the highest degree practical and business-like for commercial men to instigate and help others to make experiments, and to support trial-grounds and other similar institutions. Chis-



Fig. 30.—Roscoea purpurea. Hardy perennial: flowers purple. (see p. 190.)

wick is pre-eminently a place for such trials, and the Royal Horticultural Society pre-eminently the body to superintend them; but we want a dozen Chiswicks in various parts of the country. Take the case of the caterpillar pest: a carefully-devised and well-carried-out scheme of experiment, with a record of the cost in time, labour, and material, would, in one season, give results which would indicate whether it is financially wiser to rest and be as thankful as we can when insect and fungus are reaping the fruit of our labours, or whether it would not "pay" to avail ourselves of those resources which experiments show are at our disposal, and which our Yankee cousins say *do* pay. Having those resources, it would be wasteful not to avail ourselves of them. In the case of the Potato disease, the policy of masterly inactivity prevails, and the consequence is the loss of a much larger proportion of the crop than need be sacrificed. The do-nothing policy results in nothing but loss—a loss which is to a considerable degree preventible, and one which we well merit by our inertness and want of endeavour. If we are to be the victims of masterly inactivity, let it be of that Hibernian kind indicated by Mr. Pearson.

The Late B. S. Williams.—At the invitation of Mr. Shirley Hibberd and others, a meeting was held in the rooms of the Horticultural Club, on Tuesday last, to consider the form which the memorial to the late B. S. Williams, agreed to in principle at a former meeting, should take. Dr. Masters was called to the Chair, and amongst those present were Messrs. Veitch, Cannell, Wynne, Outram, H. Pearson, W. Bull, Laing, W. Paul, &c. The Chairman thanked Mr. Hibberd for the part he had taken in the matter, and called upon him to further explain the proposals made at a former meeting. A large number of letters and telegrams were read, all with a solitary exception expressing warm sympathy with the objects of the meeting and promising support. Mr. Shirley Hibberd also exhibited a draft design for a certificate, proposed to be awarded with medals or money to exhibitors, whose plants gave evidence of superior cultivation. The design included representations of numerous plants with which the late Mr. Williams was in some way or another connected. An animated discussion took place on points of detail, the utmost unanimity and fullest sympathy being evinced on the general principle, and eventually a resolution, which it was understood was in accordance with the feeling of the family, was submitted by Mr. Harry Veitch, seconded by Mr. Cannell, and passed unanimously. This resolution was to the following effect:—

"That this meeting desires to raise a sufficient sum to perpetuate Mr. B. S. Williams' memory by investing such an amount as will suffice to put a certain number of children on the Gardeners' Orphan Fund as Williams' Memorial Orphans; and also to give prizes in money and Williams' Memorial Certificates for excellence in the cultivation of plants."

It is expected that the contributions will be numerous. Those desirous of helping forward the work may send their subscriptions to the Treasurer, Mr. Harry Veitch, 544, King's Road, Chelsea, to whom we shall be pleased to forward any sums that may be entrusted to us for the purpose.

Botanical Magazine.—The plants figured in the August number are the following:—

Trachycarpus Khasyanus, t. 7128.—A pair of these Palms was sold by order of the "Commissioners," when that body caused the Royal Horticultural Society to vacate the Conservatory at South Kensington. It is satisfactory to know that they have found a resting-place in the temperate-house at Kew. The Palm in question is a native of Eastern Bengal and Burma, and is very closely allied to the T. Martianus of the Western Himalaya, to T. Fortunei of China, and T. excelsus of Japan; T. Khasyanus, however, differs in its slender polished trunk.

Pleurothallis platyrachis, t. 7129.—This is the plant described by Mr. Rolfe as Masdevallia platyrachis in the *Gardeners' Chronicle*, 1888, ii., 178, but the sepals are free to the base.

Aconitum Fischeri, t. 7130.—A handsome species, native of North-eastern Asia, Japan, in the Western and perhaps also in the Eastern United States of America.

Episcia maculata, t. 7131.—A scandent Gesnerad from British Guiana, with lustrous ovate-acute serrate bullate leaves, and dense clusters of trumpet-shaped flowers of a yellow colour, thickly spotted with red. Each flower is about 2 inches long, the limb nearly regularly divided into five oblong rounded lobes, one of which is bent upwards, so as to close the tube like a lid. Kew.

Pedicularis megalantha, t. 7132.—A noble and interesting species, native of the subalpine regions of the Eastern Himalaya. The stalked leaves are oblong, pinnately-lobed, the calyx tubular, leafy at the margin; the purplish corolla has a slender tube, 2 inches long, dilating upwards into an irregular hood-like limb. Hort. G. F. Wilson.

Double Orchids.—In the *Gardeners' Chronicle*, May 9, 1885, p. 597, fig. 112, we had occasion to describe a double-flowered Cypripedium sent to us from Mr. Heywood. Recently Messrs. Heath, of Cheltenham, have sent us a similar flower in some respects even more double than the one alluded to. The flower in question (C. Lawrenceanum), had no ovary, but three sepals (the two lateral ones which are usually conjoined being free), three broad flattish petals, and a column made up of five (perhaps more) petaloid pieces so curiously twisted and confused that their nature and relationship could not be exactly determined. It may be taken as certain, however, that some of them represented stamens, and perhaps some of them styles. It is curious to observe how frequently Cypripedium Lawrenceanum shows abnormal flowers, and we would ask our Orchidophilous friends whether this tendency as to irregularity does not indicate a hybrid or crossed origin for the species. Known hybrids, such as C. Sedeni × and its derivations, are notoriously apt to go astray, and this circumstance leads us to put the question as to the possible hybrid origin of C. Lawrenceanum; or are the changes simply due to an alteration of conditions of growth consequent on cultivation?

Rubus phœnicolasius. — This handsome Bramble was figured in our columns in 1886, vol. xxvi., p. 365, from a specimen in Canon Ellacombe's garden, but is so handsome that it amply deserves to have attention called to it again. The leaves resemble those of the Raspberry, being milky-white underneath. The stems and leaf-stalks and flower-clusters are covered with down, from which protrude numerous long purplish or reddish-brown gland-tipped hairs, like those on the leaves of Drosera. The hairs, from their sticky exudation, form good fly-traps, and, judging from appearances, have the power of motion, but whether or not they are sensitive to touch, and whether they secrete a digestive ferment like the Drosera, are points still to be determined. In any case, they form an effectual guard to the young fruits, which are preserved from the ravages of marauding insects, not only by the hairs just mentioned, but also by the fact that the lobes of the calyx fit tightly over them when they are ripening.

Stock-taking: July. — "Pleasure first, business afterwards," seems to be often the rule in Governmental departments, instead of the reverse, as a good many people think ought to be the reading. In the present instance, the Bank Holiday caused the delay of a day in the publication of the Trade and Navigation Returns for July. From them we learn that the imports amount to £83,082,629—a decrease of £2,820,889 compared with July last year. The exports of British and Irish produce amounted to £24,321,336—an increase of £2,196,830 compared with July of last year. The imports for the seven months ended July 31 amounted to £239,964,387—a decrease on the corresponding period of last year of £3,844,119. The exports of British and Irish produce for the seven months amounted to £151,877,301, this being an increase of £10,343,090 compared with the corresponding period last year. The following is our usual extract from the summary of imports:—

	1889.	1890.	Difference.
	£.	£.	£.
Total value of imports	35,903,518	33,082,629	—2,820,889
§II.—(A.) Articles of food and drink—duty free	12,306,213	11,963,090	—337,123
(B.) — do., dutiable	2,028,721	2,023,790	—4,931
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	5,073,477	3,407,637	—1,665,840
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	5,009,843	4,492,390	—517,453
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,064,472	945,029	—119,443
(B.)—Parcel Post ...	30,271	41,948	+11,657

The decrease in imports is in all articles save animals (living), tobacco, metals, and goods sent by parcel-post. The following figures, from the general returns, will be found to possess their usual interest:—

	1889.	1890.	Difference
§ II. Fruit:—			
Apples, raw ... ... bush.	12,968	12,453	—515
Unenumerated, raw ... ,,	345,697	402,392	+56,695
Onions ... ... ,,	200,161	191,606	—8,555
Potatos ... ... cwt.	551,090	368,049	—183,041
Vegetables, raw, unenumerated ... ... Value	£87,224	£99,594	+£12,370

As a "nation of shopkeepers," we have an intense love for facts, and the figures therewith connected. It is a pity some member of the International Peace Society, which recently held a Conference in the Westminster Town Hall, do not analyse the British Trade Returns, in the endeavour to show how far these were affected by the "shadowing" of peaceful Commerce by the black spectre of War and Rumour. We have the actualities of Guatemala, San Salvador, and Buenos Ayres—the probabilities in the East; what have all these had to do with the returns issued last week? A clear answer to this question would prove exceedingly useful to the Society above-named. It may be interesting to note that the exports of foreign and colonial produce in July amounted to £5,443,433, as against £6,178,635 in July, 1889—a decrease of £735,202; the figures for the seven months this year are £38,363,203, as compared with £40,018,545 in 1889, or a decrease of £1,655,342. A comparison with last month's returns all round would prove interesting.

Clematis Davidiana.—This is one of the comparatively new upright species, with rather coarse deep green, ternately divided foliage, and dense axillary clusters of nearly sessile, trumpet-shaped, lavender-coloured flowers, each three quarters of an inch in length. It is a hardy Chinese species, a close ally of C. tubulosa, but is superior to it in ornamental qualities (Hort. Ellacombe).

Ballota pseudodictamnus. — This is a dwarf perennial of very quaint appearance, having erect branches, which, like the leaves and calyces, are very densely covered with whitish, down-like wool, the individual hairs of which, when examined by the lens, are seen to be stellate. The leaves are orbicular, on short stalks, and so much turned up at the margins that the stem seems to bear long rows of cups. The calyx is much in advance of the corolla in development, trumpet-shaped, five-lobed, and densely

woolly. Cf. B. acetabulosa, *Gardeners' Chronicle*, November 9, 1878.

Leek Floral and Horticultural Society.—This well supported Staffordshire Society, affiliated with the Royal Horticultural Society, intends to hold its autumn exhibition on Friday and Saturday, September 5 and 6, on which occasion one Silver and two Bronze Medals of the latter Society will be offered in the open class for the best display of cut flowers.

Obtaining Plants with Intent to Defraud.—At the Middlesex Sessions Henry Stanley, 45, a hawker, was indicted for obtaining by false pretences from Thomas Softley Ware, Hale Farm Nurseries, Tottenham, N., a quantity of flowers and Ferns, value £5, with intent to defraud. He pleaded "Guilty," and several previous convictions being proved against him, the learned Chairman sentenced him to penal servitude for five years.

National School of Horticulture, Versailles.—We find in the *Revue Horticole* some details of experiments made in the garden of this establishment under the supervision of M. Hardy. For Vine mildew (Peronospora), the following mixture has been advantageously employed. It is easier to make than the ordinary Bordeaux mixture, its effects are more lasting, and it does not injure the foliage :—

Sulphate of copper	2 kilos.
Water	15 litres.
Dissolve and add—	
Carbonate of soda	3 kilos.
A precipitate of oxide of copper results, and when this is effected, add—	
Treacle	250—300 grammes.
Stir occasionally, and after twelve hours, add—	
Water	100 litres.

The mixture may be applied with a spray-pump.

Fungus Pests.

During the winter paint the stems of Vines, Peaches, and Pears with Bordeaux mixture, composed of—

Sulphate of copper	3 kilos.
Lime	3 ,,
Water	...100 litres.

During the spring apply as a matter of prevention the saccharine solution of copper above mentioned. Excellent results are stated to have followed from these practices.

Manures.

M. George Ville has provided three forms of chemical fertilisers :—

(1) Superphosphate of lime	33·34
Nitrate of potash	16·66
,, ,, soda	25·00
Sulphate of lime	25·00
	100·00

The quantities required for 1 hectare are 400 kilos superphosphate, 200 kilos nitrate of potash, 300 kilos nitrate of soda, 300 kilos sulphate of lime—equal to 1200 kilos.

	Kilos.	Per hectare.
(2) Superphosphate of lime	40	400
Nitrate of potash	30	300
Sulphate of lime	30	300
	100	1000 kilos.
(3) Superphosphate of lime	40	400
Carbonate of potash	20	300
Sulphate of lime...	40	300
	100	1000 kilos.

For experiments in greenhouses :—
2 grammes of each manure to pots of the capacity of 1 litre.
3 grammes for pots of 2 to 3 litres.
5 grammes for pots of larger size.
For plants in the open air :—
120 grammes of No. 1 per square metre ; or 100 grammes of Nos. 2 and 3.

These manures have been tried with good effect, but with varying results in different plants; thus, Marantas were most benefited by No. 2, Selaginella Mertensii was greatly stimulated by No. 3, while no effect was produced by No. 2; Begonia Rex did best with No. 1. The grass on the lawn was most advantaged by the use of No. 1. Other experiments are still in progress.

Steam *v.* Hot-water.—The last-received *Bulletin of the Agricultural College of Michigan* (*Experiment Station*) contains an elaborate account of comparative experiments made in heating a pair of span-roofed forcing houses of identical construction and dimensions, and placed side by side. We append Mr. Taft's summary :—

"In the construction of forcing houses for commercial purposes, we believe that the best results will be secured if the walls are built of grout (cement, sand, and cobble-stones) below the surface of the outside soil, with the portion above the grading of wood, with from two to four thicknesses of boards, two of building paper, and an air space. If properly built, however, a wall entirely of grout will prove almost indestructible. We should build the roof of permanent sash bars, and use glass at least 12 inches wide. The butting of the glass has given us entire satisfaction. The new method of glazing without putty (the panes rest in grooves in a bar with a cap to keep them in place), and the use of Gasser's glazing strip will make a tight roof. The tests thus far made indicate that hot-water heating is both more economical and more satisfactory than steam heating for small greenhouses, and we should certainly use that system. The use of small wrought-iron pipes from 1½ to 2 inches in diameter, according to the size of the house (a smaller size even might be preferable for the returns in a small house), will be found desirable for the reasons given. For most purposes the combined overhead and under bench system seems better suited, than to have the pipes either all overhead or under the benches. We have not made a test of overhead piping, but for houses for forcing Cucumbers, &c., this system has given general satisfaction. As the houses were built for experimental purposes, we shall be glad to utilise them in testing any new methods of glazing, or glazing materials. They also afford an opportunity of testing ventilating and other greenhouse machinery, heaters, methods of piping, &c."

How to Cook Quamash.—In a recent number of *Garden and Forest*, an interesting account is given by Mr. Macoun of a method of cooking the bulbs of Camassia esculenta, practised by the Indians of North-west America. The bulbs are collected in large quantities just before the seed is ripe, and are baked as it were between two fires. These fires are prepared from the branches of various trees, which are allowed to smoulder but not to burst out into an open flame. When, after some days, all is cool, most of the bulbs are reduced to a fine powder or flour, from which bread can be made, but some of them which had been placed among pieces of "the black hair-like lichen, Alectoria jubata, that grows in profusion on Larix occidentalis," have "united with it to form a substance resembling black plug tobacco in colour and consistency," and which can be broken, and will keep good for some time.

Market Palms.—In horticultural work it is often found a matter for wonder what becomes of all the hundreds of thousands of plants which annually are grown for and sold in the market. This wonder is not less great when Palms are concerned, because fugitive as may be the lives of myriads of market plants, flowering ones especially, Palms have at least in them some material elements of endurance, and may be expected to have an existence of some years duration; still the demand for these pretty evergreens goes on as formidably as ever, for those engaged in the raising of them for ordinary trade or market purposes, do so yearly from seed by tens of thousands, and the demand remains insatiable, Vast quantities of these plants must be temporarily used, and then be flung aside to die. In a little nursery in an out-of-the-way corner at Twickenham, and near to the railway station, Messrs. Bruckhaus & Bulling grow Palms in immense quantities yearly; they can put so many of two and three-year-old plants into so small a compass, that one house contains thousands. There are Palms from the minute seedling stage up to large dimensions, suitable for all sorts of decorative uses. Kentias Forsteriana and Belmoreana are special favourites in the market; then comes Latania borbonica. The always pretty and graceful Cocos Weddeliana, Areca lutescens, Seaforthia elegans, Corypha australis, &c., make up the chief varieties grown. Ficus elastica forms another specialty here for market, the plants being stood outdoors to harden and become short-jointed. Begonias, too, form a striking feature, the firm having a lively strain, thousands of seedling plants being planted out to produce tubers, which develop such fine plants the second year.

The Royal Botanic Society held, on Monday, in the Museum in the gardens at Regent's Park, a meeting to celebrate the fifty-first anniversary of the foundation of the Society. In the report which was read by the Secretary, it was stated that one of the objects of the Royal Botanic Society was to induce Fellows to try and form complete collections of some special classes of plants. Thus one Member might get together as many Mosses as possible, and try to induce them to grow in his garden, while another might turn his attention to raising certain fungi (all the sorts he could obtain), for purposes of study, and for comparison one with another. The President and Fellows present at the meeting, expressed themselves pleased on the whole with the present condition of the Society, and with the work done by it in the last twelve months. We are glad to learn from the report, that the silly practice of donkey-decorating has not met with much favour from the horticulturists. However permissible under certain circumstances it is altogether below the dignity of a Society calling itself Botanic. Ed.

The Fruiterers' Company.—It is pleasant to see the old City guilds making an endeavour at one and the same time to maintain their old traditions and to adapt themselves to new conditions. The Fruiterers' Company propose, on October 6 to the 8th inclusive, to hold in the Guildhall of the City of London an exhibition of home-grown hardy fruits. The Company is desirous of promoting the cultivation of useful hardy fruits in the homesteads and cottage gardens of Great Britain, and offer for competition money prizes amounting to over £200, Gold, Silver-gilt, and Silver Medals, and framed Certificates of the Company for exhibits of fruit by cottagers, tenant-farmers, amateurs, and gardeners in three geographical divisions in England and Wales. The framed Certificates of the Company will be given for exhibits by trade growers and nurserymen. Prizes will also be offered for exhibits of jams and preserves by manufacturers, and also, in a separate class, for home-made jams and preserves. For schedules and all other particulars, apply to the clerk to the Company, Mr. O. C. T. Eagleton, 40, Chancery Lane, London, W.C. It would be very desirable if the Fruiterers' Company and the Royal Horticultural Society could agree to combine their efforts. Co-operation and not division is what is needed for the promotion of the objects both bodies have in view. The Fruiterers' Company would have much to gain and nothing to lose by seeking the assistance of the Society and also of the British Fruit Growers' Association on this occasion.

PLANT PORTRAITS.

Cattleya Bowringiana, *Revue Horticole*, July 1.

Forsythia suspensa, *Garden*, June 28.

Odontoglossum Schlesingerianum, *Lindenia*, t. 240. A supposed hybrid. The star-shaped perianth has narrow lanceolate white segments, spotted with reddish-purple.

Pear Beurré Gambier.—A Pear of medium size, ripening in January and February, of fine melting flavour, recommended for private culture. *Bulletin d'Arboriculture*, July.

Pescatorea Klabochorum, *Gartenflora*, June 15, t. 1324.

Rhodostachys pitcairniæfolia, var. Kirchoffiana, *Gartenflora*, t. 1325. A Billbergia-like plant

with very narrow spiny-margined leaves, and a central tuft of small blue flowers, superficially suggesting a resemblance to the very remote Forget-me-not.

Zygopetalum Jorisianum, a native of Venezuela, figured in the *Lindenia*, t. 237. The green sepals are blotched with purple; the large lip is white, with a purple blotch at the base, and laciniate at the edges. It was discovered by Bungeroth, and sent by him to "L'Horticulture Internationale" of Brussels.

Notices of Books.

Studies in Evolution and Biology. By Alice Bodington. (Elliot Stock.)

This work bears evidence of being the production of a student with more confidence than caution. We admire the author's zeal, but do not think much of her discretion, neither do we at all assent to her proposition that "any stigma rests upon the person who ventures to write upon any branch of science without being an original discoverer." It would be rather hard upon makers of text-books if this were so. "Why cannot a wide view be taken," continues the author, "by some competent person of the results of the labours of hundreds of scientists, so that we may more clearly see what manner of fabric is being reared?" The question seems to us rather an unnecessary one, in face of the mass of existing literature. If we turn only to the list of books and authors referred to by the author, we find all, or most of them, comply with her conditions. They are not original articles or monographs on special subjects, but comprehensive treatises embodying the results of the labours of hundreds of scientists. Inasmuch as these treatises are the work of "competent persons," men who have proved their competence in various ways, they are looked up to as authoritative. There is no reason, that we know of, why "popular" books, such as we presume this book of studies is intended to be, should not be held in as much respect in their department as original monographs in theirs, always provided that the requisite conditions are fulfilled. The work before us consists of some interesting chapters, which we commend to the attention of the general reader, but not without a caution. This caution we are obliged to recommend from the perusal of the chapter entitled the "Flora of the Past," a chapter, by the way, which furnishes an adequate reason for the stigma supposed to rest upon unqualified or misleading statements. For instance, at p. 79 we are told that "microsporangia are now considered as the homologues of the pollen, and macrosporangia as the homologues of the ovules of higher plants." In the chapter in question, the author shows on the one hand that she is imperfectly acquainted with what has been done, and on the other she casts blame upon the botanists for not doing the very things that as men of science desirous of setting forth the truth, as far as circumstances permit them, they should *not* do. Our author apparently would prefer them to issue mental figments labelled as dogmas. Did Darwin give us a genealogical history of animals? We think not. He gave some suggestions which have been confirmed by subsequent writers. Has Cope, or Hæckel, or Huxley given us a completed and verified pedigree of all animals? We feel sure those distinguished zoologists would disclaim any such pretensions. They have made certain conjectures, some of which have been confirmed as far as circumstances permit by palæontological or embryological research. Well! have not the botanists done the same under less favourable conditions? We had thought so till the author suggested doubts. We had thought that even Linnæus admitted the perfecting of a natural system of classification to be the most important object of a botanical student's endeavours—and what is the natural system if it be not genealogical? In so far as it does not represent the links of a pedigree, in so far it is artificial. Positive evidence in the shape of actual records is less attainable than in the case of the higher animals. Fossil plants afford mostly much less satisfactory evidence than the corresponding relics of at least the higher groups of animals. Indirect evidence is obtainable from a comparative study of the development of plants from their earliest to their most completed stage, and by a co-relative study of the life-history and mode of life. Did not Ray, and the De Jussieus, and specially Robert Brown, contribute the very foundations of all we know on these subjects; and has not every monograph writer since added his mite to the formation of a genealogical tree? Looking back on the one side to what has been accomplished by the botanists we have named, as well as by many more still happily labouring in the same direction, and on the other to the shallow guesses of fluent but precipitate penmen, we are disposed to think that the botanists, so far from feeling remorse or being "timid," as the authoress says they are, will, under the circumstances, feel it as a compliment to be so designated—

"For fools rush in where angels fear to tread,"

and botanists, we feel sure, know more about the evolution of plants than the author of this book can tell them.

Subject to the cautions we have thought it right to utter, we commend the volume to the attention of students desirous of obtaining a general glance at the problems which naturalists are attempting to solve, and of the means and methods by which they work.

Plan of the New Recreation Ground, Bedford (Fig. 31, p. 195).

At the request of the Corporation of the town of Bedford, plans were prepared by Messrs. W. Barron and Son, Landscape Gardeners of Borrowash, Derby, for laying out the Mill Meadows Estate, near the town, as a place for the recreation of the public. The meadows form a long and rather narrow strip between the upper and lower branches of the River Ouse, and are about 30 acres in extent. The whole of this land was subject to be flooded by the river, with the exception of a few acres at the higher end, and the scheme which was submitted by Messrs. Barron renders these floods impossible for the future. Both the upper and the lower streams will be widened, and a weir constructed 100 feet wide spanned by a rustic bridge. The plans provide for an ornamental lake of about 3½ acres in extent, which is connected with the upper branch of the Ouse. A public park nearly 70 acres in extent already exists at Bedford, which was laid out and planted by Messrs. Barron, in 1884.

Nursery Notes.

Messrs. F. Sander and Co.

The extensive and in every way complete Orchid growing establishment of Messrs. F. Sander & Co., St. Albans, forms one of the horticultural sights in Europe. There, at most seasons of the year, may be seen large quantities of the favourite kinds of Orchids in bloom, together with a large proportion of new species. The Cattleyas are admitted to be the showiest of Orchids, and of these the great structure devoted to them at St. Albans, after having some thousands of C. Trianæ in bloom, has had a succession of a fine strain of C. Mendelii, many of which still remained in bloom, and combined with those of C. labiata and C. Gaskelliana to make a very fine display. Not the least of the attractions of this pretty species is its delicate odour. The great numbers grown at St. Albans show that the species varies even more than C. Mossiæ, and in a similar manner, the pure whites being very scarce, the white with crimson lip almost as uncommon, while the really highly-coloured forms are scarce enough to warrant a good price being asked for them. Here, too, were plants in flower of the beautiful C. aurea, and one specimen of an improvement on that species which Messrs. Sander introduced, and have named C. chrysotoxa. The yellow colour in this form is brighter, and the velvety-crimson which is veined with yellow, is clearer than the type; and strangely enough out of this strain have appeared two with cream-coloured sepals and petals, and otherwise distinct and very beautiful forms.

In this house was a number of the true Lælia grandis, a species for which the firm gained a First-class Certificate at a recent meeting of the Royal Horticultural Society; and in the same house were blooming many of the pretty L. xanthina. The roof of this large Cattleya-house is on the ridge and furrow principle, the ridges running transversely, and the shading is stretched from end to end across the ridges, so that the air can play between it and the glass, and a large amount of light is secured, together with all the shade that is necessary. In another Cattleya-house, which was at one time called the large Cattleya-house, some fine baskets of the handsome and fragrant Aërides expansum Leonis, some of them with a dozen spikes, were suspended over the rockwork; also Cœlogyne Massangeana, similarly displayed, furnished numerous drooping sprays; and Aërides crassifolium, and other drooping flowered Orchids were arranged. About the house were the last of the Cattleya Mossiæ, a good C. M. Reineckiana, and another named C. M. cœlestis, a white, with a decidedly faint blueish tint, being amongst them. Some fine examples of C. Schofieldiana were in bloom, also several white and coloured C. Eldorado, and a peculiar form of C. Mendelii, which has a very large light rose-coloured lip, veined with creamy-white.

In the "tank-house," with water running from end to end, red and blue Nymphæas were flowering, great numbers of Dendrobium Dearei were suspended, evidently revelling in the moist heat, and constituting a most thriving collection. Mr. Godseff has a happy knack of finding the right place for all the plants generally found difficult to grow, and in this house he had placed quantities of such plants, which were in rude health at the time of my visit. Among them, it will be useful to note, were Oncidium ampliatum majus, all the Grammatophyllums, including the fine new species, G. Measuresianum; Phaius tuberculosus, and P. Henryii, the former with far stouter growths than those imported; Dendrobium Phalænopsis, D. Statterianum, D. Macfarlanei, D. Goldii, and all of its section, some of which were in bloom; and other species which many signally fail to flower. In the same house, also in bloom, was a specimen of the handsome and rare Grammatophyllum multiflorum, with two spikes of fifty and seventy flowers—a noble Orchid; the new and singular-looking Sarcopodium Godseffianum, with its delicately suspended white and purple lip, and broad upper sepal of yellow, veined with crimson, looking, when seen against the light, like some old stained glass window on a small scale. Dendrobium formosum giganteum grows to perfection in this house, and bears in profusion its snowy flowers. A pretty and probably new Dendrobe of the D. Draconis section, whose waxy-white flowers have an orange-vermilion coloured base to the lip; Phaius Humblotii, Vanda tricolor, V. Hookeriana, V. teres, and a few other species were in flower.

The ranges of cool-houses were filled with plants in splendid condition, and among the Odontoglossums a few good hybrids were noticed in bloom. One of these looks like an O. Hallii cross, and it reminded one of O. prionopetalon, and the pretty Pescatorei hybrid O. elegantius. O. Wattianum is also a very pretty novelty, and the flowers on the tall sprays of O. Harryanum filled the house with fragrance. Of Miltonia vexillaria here were thousands in fine health, and a few still remained in bloom. Among the Masdevallias, the richly-coloured M. Harryana versicolor, and two species, probably new, attract the most attention; and a quantity of white, spotted, and flaked new hybrid Anthuriums, are very singular and beautiful. Among other things, Calanthe gigantea, or C. igneo-oculata, was very fine, and the batches of Cypripedium Curtisii and other Cypripediums were in bloom in large numbers.

The George Street Nurseries are now retained, after having been rebuilt as a private place to grow new plants on trial, and the many seedling Orchids which have been raised here during recent years. Among these latter were observed some stout plants of some phenomenal crosses, such as between Batemannia Burtii and Zygopetalum crinitum, and between Zygopetalum and Lycaste Skinneri alba. The progeny of hybridised Cattleyas, Lælias, Epidendrums, and Masdevallias, &c., appeared to be very numerous, and among the last-named one, which is the result of crossing M. amabilis with M. Tovarensis. The Bolleas, Pescatoreas, Batemannias, and Huntleyas, are being especially worked on for crossing, as it is anticipated that not only will new and very handsome varieties be obtained, but that being home-raised, the stubbornness of growth which is observed in imported plants will be got rid of. So far there is evidence that such is the case, for nothing could grow better than the hybrid seedlings of these species.

In this nursery many new Cypripediums are in bud or bloom, among them the pretty C. Volonteanum and Angræcum Chailluanum, A. Sanderianum, a large batch of Zygopetalum crinitum, and a few of the handsome and fragrant Warscewiczella Wendlandii, also Batemannia Wallisii, Pescatorea cerina, and others of these genera, and a grand lot of new Utricularias from the Roraimas, and some handsome Phalænopsis.

In one of the warm houses, Mr. Godseff has instituted a marvellous culture of rare Dendrobes—D. nobile nobilius, D. n. Cooksoni, D. n. Sanderiana, D. Suchianum, &c., from cuttings of old pseudobulbs inserted in small pans, and suspended from the roof. Batches of one, two, and three years old were here growing vigorously by the hundred, and to a trade establishment it is needless to say that such an extensive and successful propagation of species is of great importance. *J. O'B.*

Home Correspondence.

THE FRUIT CROP IN THE WESTERN SUBURBS OF LONDON.—After having had a look at the fruit reports published in the *Gardeners' Chronicle* of August 2 and 9, I had a run over a few of the fruit or market gardens round Fulham, Putney, and Twickenham, and found, as a rule, this year that the fruit crop is a failure so far as these gardens are concerned. Plums showed well early in the season, but the frosts and cold winds of spring brought about a complete failure of the crop; and trees which last year had to be supported by six or eight stakes to enable them to carry their fruit, are this year fruitless. This applies also to Damsons. Pears showed but little bloom, and what has set does not seem to swell nicely. Williams' Bon Chrétien has scarcely a fruit in large lots. Louise Bonne of Jersey flowered and set its fruit fairly well, but the fruit is small. Hessle and all the common varieties of the Pear, are thin and of small size. Apples, as a rule, are few, and only Lord Suffield, Keswick Codlin, Cellini, Stirling Castle have a fair show, and the finer varieties are very poor. Small fruits have cropped well. Strawberries were unusually fine. Gooseberries, Currants, and Raspberries are or have been plentiful and good. I fear that the important out-of-door crop of Tomatos will this year be a failure. *J. F.*

THE POTATO CROP.—Judging from editorial remarks by the Editor in the last number of the *Gardeners' Chronicle*, he contemplates giving special remarks on the Potato crops. Whilst I write (Monday afternoon, August 11) a thunderstorm is raging here, the rainfall being such a heavy one as has not been equalled at this place during the last fifteen years. Potatos were sadly smitten with the disease; now, however, there can be no doubt the injury will be intensified. It is sad, moreover, to observe how indifferent owners of huge breadths of Potatos appear to be; they simply aid the water to flow away, and leave their crops to chance; indeed, throughout the country—especially in Ireland, Kent, &c.—they seem to have notified the attack on its first appearance, watched its full destructiveness, and have not moved a hand to save the tubers. That there is a simple and certain remedy I again make bold to assert. Twelve or fourteen years ago I announced it emphatically in these pages. The certain antidote is this:—Immediately the first sign of disease or leaf-spot occurs, forthwith dig up the crop, dry and store it, and I again aver that if this be done, at the utmost not more than four per cent. of the tubers will be lost. But I go a step beyond this. When the tubers are full grown, and the haulm shows signs of maturing, the latter has done its work, hence, whether disease appears on the leaves or not, dig the crop up dry, and store it, and the crop will be secured in the best possible condition. Some readers may say, "It will not keep; others, "The crop at such a stage has not arrived at maturity," &c. Many cling to the old notion, the haulm feeds the tubers until it dies down. All this is absolute fallacy. When the tubers are full-sized, and the haulm shows signs of exhaustion, it has ceased to be of any use. It is just at this juncture that the disease steps in. "But," it may be said, "the skins at such a stage are not set, and until this occurs tubers are not perfect, nor will they keep." I say also again, this is altogether wrong. Crops dug so green that the skin will rub off, keep as well as the most matured examples; indeed, I make bold to say, the tubers so dug, keep better and cook better in the months of May and June following, than such as are permitted to lie in the ground until the haulm dies down. I dug my early varieties, Hebrons, &c., on St. Swithin's Day, delightfully dry windy weather prevailing, and the whole of my late varieties were housed during lovely weather, early in the past week; these included Magnums, and my whole crop is safe. Meantime, it is trying to one's feelings to see the havoc the disease is making, and nothing being done to save the roots. Jensen's system may be very well, but look at the labour. Poisonous compounds may be sown, and have some merit, but why in the name of common sense have resort to either, when the simple method I have so long advocated and practised is easier for all. Will not the Editor assist in giving such—probably too simple—facts greater publicity ere it be again too late, if the latter time has not already arrived? *William Earley.*

WEEDS.—The present season has witnessed an enormous increase in the growth and number of the weeds of all kinds infesting gardens, and nowhere more so than in light soils, and where the gardener or husbandman has a weak staff of workers. In some cases, the only means of getting rid of the pest was the entire destruction of the crop amongst which they grew. Where neither mowing, reaping, nor pulling took place, the weeds grew apace, seeded abundantly, and laid the foundation of crops which will be a terror to other cultivators for the next ten years. Fruit-land has suffered most severely from the visitation, and all kinds of insect pests must abound in the cover thus provided. Gardeners who may be furnished with ample labour, doubtless have felt the weed season to be a bore, but still one to be overcome. Those who have not been so favoured have, on the other hand, felt the bitterness of useless striving, and have been compelled to leave the field for the season to the enemy. When a few evenings since at Chiswick, I walked round the eastern fruit quarters; painful indeed was the spectacle of enormous masses of weeds which the ill proportioned labour the council has left to the garden, could not possibly grapple with. Mr. Barron has need of half-a-dozen stout labourers for a month to enable him to get rid of the weeds and put the place in decent order. Surely Chiswick is not maintained even in its shamefully existing starved state that it may grow enormous masses of weeds. Probably there is no such garden in the whole world, presumably the property of a Royal Corporation, and presumably also devoted to scientific and practical horticulture, which points in many parts such a lamentable spectacle as Chiswick did when I saw it the other day. I mean no slur on the staff; the employed are nearly worked to death, whilst the present state of things is enough to drive them to distraction, to such depths of degradation, has the old garden of the Royal Horticultural Society sunk. If it be proposed to allow everything to go to rack and ruin for the purpose of disgusting the Fellows of the Royal Horticultural Society with Chiswick, the present gross neglect of the gardens is explained.



Fig. 31.—Public Recreation Grounds, Bedford. (See p. 194.)

Its Grape and Tomato crops are excellent, but outdoors there is much that a more liberal expenditure would put in good or better order. *Observer.*

PAPAVER HELDREICHII.—On page 104 of the *Gardeners' Chronicle* (July 26), there is a mention of P. Heldreichii, as growing in the garden of Mr. Wilks at Shirley. I would ask gardeners and nurserymen to pause a little before accepting this name for what has hitherto been known in English gardens as P. pilosum. Mr. Wilks kindly sent me specimens of the plant, and it is certainly what I and others have for some years cultivated under the name of P. pilosum of Sibthorp. I am unable to refer to Sibthorp's figure (Flora Græca, 492), but I have *Bot. Mag.*, t. 4749, which exactly represents the plant I cultivate, while the description answers in every particular. I have also compared the characters given in E. Boissier's *Flora Orientalis*, vol. i., p. 108, which agree. Now P. Heldreichii (see *Flora Orientalis* same page), was named and described by E. Boissier from specimens collected by Heldreich in Asia Minor, and these specimens would probably be in E. Boissier's herbarium, which I think is in the Museum at Geneva, but he describes it as a smaller and weaker form; than P. pilosum. This is what he says:—"This species, which I had confused with P. pilosum, differs from it in having the stem less robust, the flowers smaller, the capsule narrower. The form of the disc is also different." Would it not be well to send specimens of the supposed P. Heldreichii to Geneva to be compared with those from which E. Boissier names the plant? *C. Wolley Dod, Edge Hall, Malpas. August* 6.

FLOWERING OF PHORMIUM TENAX.—Phormium tenax has been flowering in the Isle of Wight and Cornwall, and P. tenax, Veitch's variety, has bloomed here likewise, two fine spikes of flowers, of about 12 feet high, having shown this summer. The leaves measure 7 feet high, and are beautifully variegated, and the plant is 10 feet through. The plant threw up three spikes, but one was cut off to send to my employer. This plant was planted four years ago, and for the last three years it has had no protection whatever. It stands in a bed raised 18 inches above the level of the flower garden. *J. Harding, Longford Lodge, Crumlin.*

PEAS.—This is a good season for Peas, and each variety has been fairly well tested, and I have selected twelve of the best sorts. Sutton's Jubilee has large Peas, and when opened averaging nine to ten in a pod, which, when cooked, are of delicious flavour. This variety stands the wet weather, that is, it fills its pods better than most others. Duke of Albany is still one of the best for exhibition purposes, it being a very large and handsome pod, and one that is a good cropper. Prodigy has considerable merit, as have Marvel, Autocrat, Telephone, Sharpe's Queen, and Triumph, which are very prolific, and the last a fine Pea of good flavour. Duchess is a valuable Pea for showing, and is similar to Duke of Albany. Chelsea Gem has been decidedly the best early Pea, and Ne Plus Ultra still ranks high as a late Pea. Veitch's Perfection is a good mid-season Pea. I have grown other varieties, but those above enumerated are the cream of them. Our Peas are grown in trenches upon heavily-manured ground, and are a long way ahead of those grown in the ordinary way. *W. A. Cook, Compton Bassett, Calne.*

—— The value of supports for Peas is being well demonstrated this season. Now that such a glut of rain is visiting us in some cases the Pea breadths are showing such yellowness of colour as to be truly alarming, for mildew too often follows upon that appearance, even if the plants do not absolutely lose their roots. But the worst effects of the heavy rains are being seen in the destruction of bloom, for that has damped wholesale, and prospective pickings will be greatly reduced in bulk. It is very probable that laid breadths suffer in this respect far more than do breadths where the plants are kept erect by supports, as the blooms then throw off the rain more freely. A noticeable feature recently, was the speckling of the leaves and pods also, especially of the best Marrow varieties, by the beating hail, sufficing materially to detract from the market value of the Peas. Supported Peas would doubtless have escaped that infliction, as the pods would not be presented broadside to the rain, as they are on laid plants. The laying plan, which is the only possible method of dealing with Peas in extensive breadths, answers very well in ordinary seasons, but it is far too wet this year to suit it. Already has it been needful to turn the rows, so as to allow air to dry the soil beneath, because it is in such a sodden condition. Not only will the market Pea crop be adversely affected by the excessive and cold rains, but the seed crop must be materially injured also, for fertilisation is much more imperfect such a season as the present than when it is a dry time. We could hardly have the weather too warm and dry through the summer now to enable the Pea crop to finish up, and the seed breadths to properly mature. *A. D.*

CHEIRANTHUS MARSHALLI.—At page 72 of the last volume of the *Gardeners' Chronicle*, your correspondent "R. D." says, "Is not this fine and showy perennial in some danger of being lost to gardens?" and I really think it is in danger. There most certainly is, unless annual propagation be resorted to. And here arises the question—is it strictly speaking a perennial at all? I think not, for if not renewed every year it is a most difficult plant to keep, and I doubt very much if left alone for three years from planting, if any would be found at all. This, I believe, is due entirely to its parentage, and those who would retain a stock of this charming spring flower should see to its annual propagation. Where one or two good plants exist, a stock may soon be raised. Cuttings too frequently succumb to damp, and the simplest and surest way I know of is to carefully separate the branches or shoots, and fill in with very sandy soil, leaving the hearts of the shoots or breaks quite clean. Into this they root readily, and make excellent tufts if detached and planted singly in early autumn, while the time and trouble is not one half that of making cuttings. In planting, let the spot be a well drained one, and avoid a soil over-rich in humus. *J.*

LARGE PEACHES.—I have noticed in your pages the weights published of Peaches grown at Mereworth and at Ellery, weighing respectively 8 oz. and 11¼ oz. I have sent some Peaches to table this month several of which weighed 12 oz., and one in particular, a Princess of Wales, turned the scale at 14 oz., and was 12 inches round. My employer told me that the fruits were excellent. Peaches and Nectarines do fairly well here, and I have on two or three occasions grown on one south wall out-of-doors, which is about 130 yards long, more than 3000 of both fruits; indeed, last year, 3500 were counted on this wall, and these finished up well for the season. I have this season a very good crop, but not so heavy as that of last year. *W. Collett, Sudbourn Hall, Wickham Market.*

SAMBUCUS NIGRA VAR. AUREA.—Some of the most brilliantly coloured and striking specimens of the Golden Elder I ever saw were just on the borders of north-west Middlesex, growing on a mound, with a full exposure. It was in a dry time in the month of August, and the colouring of the leaves was superb. Mr. J. Smith, of Mentmore Gardens, told me that the colour is very good at Mentmore, but he heads back the plants, the young, vigorous shoots of the current year producing the richest-coloured foliage. It is satisfactory to know this in all cases where it is necessary to keep the plants low. *R. D.*

CABBAGES.—Now is the time to sow Cabbage seed in the Southern shires, and according to soil and locality, but in most places it may be sown shortly. I like to get the first batch of plants planted out in the first week in September; and if we should get a very warm autumn, and some of them bolt, the crop may be made use of, the ground forked over, and plants put out in early spring; or, if Cabbage be not planted, it will come in for early Turnips. We rarely have any of our Cabbages bolt. Last year the Cabbage seed was sown on July 10, and we cut some Cabbages for Easter Sunday—that was five weeks before the majority of gardeners in this district. The variety was Ellam's, which was closely followed by Veitch's Matchless. I tried Earliest of All, but it did very little good, and it seems to be better adapted for summer use, and is, with Sutton's Gem, the cream of the summer varieties of the Cabbage. Close planting in the rows of such sorts as Ellam's is much to be recommended, the spread of the leaves not being great, and it is always good practice to cover the ground, so as to preserve its moisture better during the warmer months. *W. A. Cook, Compton Bassett.*

FRUIT CROPS IN THE NORTH.—It is noteworthy that the returns of the fruit crop, which appear in the *Gardeners' Chronicle* of the 2nd inst., show the best average this season is in Scotland, and particularly in the north of that country. In the 44 districts reported from Scotland, 23 have an average crop and over, of Apples; of Pears, 14 average and over out of 43; of Plums, 17 average, none over, out of 42; of Cherries, 38 average and over out of 44; of Peaches and Nectarines, 13 average and over, out of 20; of Apricots, 12 average and over, out of 25; of small fruits, 40 average and over (20 "over," 20 "average") out of 44; of Strawberries, 40 average and over (23 "over," 17 "average") out of 44; and of Nuts, 4 average, out of 5. From several of the northern counties—Caithness, Ross, Cromarty, and Banff—there is no report, but on a recent visit to that part of the country lying around the shores of the Moray Firth, the fruit trees were observed to be heavily laden with fruit, many of the standards requiring their boughs to be supported to carry the load of fine, clean-looking fruit. Apples are the chief fruit grown as standards in that northern latitude, and the crops of King of the Pippins, Devonshire Quarrenden, Keswick Codlin, Manks Codlin, Cellini, Alfriston, Blenheim, and Wellington, would do credit to the best parts of England, although they can hardly be expected to reach the size and brilliant colour of those grown in the south. Of Pears, Plums, Cherries, and Apricots, mostly all grown on walls, there is generally a fine crop, and in some favoured spots Pears and Plums are found bearing well as bushes and standards. The crop of small fruits appeared to be abundant everywhere, and the Strawberries are such as can only be found in the far north when the shooting season begins in the middle of August. A fine autumn last season, and a mild winter and spring, may partly account for the abundance of fruit in the north this year, and it shows that even in high latitudes fruit can be successfully cultivated when circumstances are propitious. *D. D.*

SOCIETIES.

ROYAL HORTICULTURAL.

August 12.—At the meeting held on Tuesday at the Drill Hall, James Street, Westminster, there was a large display of plants—and fruit, too, was well represented—but the attendance of visitors was not large, and indeed it cannot be expected at this time of year. A lecture of considerable practical importance (referred to on p. 190) was read by the Rev. W. Wilks, on behalf of Mr. W. E. Badger, who was unable to attend. Fruit evaporation has received much attention from American growers, but at home the subject is as yet new. At the Windsor show of the Royal Agricultural Society, which took place last year, the matter was brought under notice, and we gave an illustration of an apparatus which won the prize then offered (see our issue for Sept. 7, 1889, p. 277). Mr. Badger's paper evoked much interest, and several points were discussed by those present.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. H. Cannell, G. Paul, S. Hibberd, H. Herbst, W. Goldring, W. C. Leach, G. Nicholson, H. B. May, C. Jeffries, H. Turner, E. Mawley, Rev. H. H. D'Ombrain, W. Kelway, J. Fraser, and Dr. M. T. Masters.

From Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, London, came a representative group of Dracænas, as well grown specimens, all the best varieties were included; and a charming novelty was one named Miss Glendinning, it is of very graceful habit with long narrow leaves—about half an inch across, deep red-brown, with a wide edging of rich carmine-crimson; another variety of somewhat similar habit, and which would mingle well with it, is Louisa, green and yellow. They also had a slightly variegated form of Ixora salicifolia.

A good show of Gladioli was made by Messrs. Kelway & Son, Langport, Somerset: there were 120 cut spikes staged in their usual good form, and about 100 varieties were represented. They were a very even lot, among the best being Stanley, rose with heavy flakes of the same colour, and yellow in the throat; Empress of Germany, white with a border of red flakes, very elegant; Duke of Fife, rich carmine-red, with white throat; Dorothy Tennant, white with heavy rose flakes, and yellow on the lower petals; Dr. Woodman, apricot-red with purple blotch in the throat; Marion Lee, white with rose edge; and Emperor of Germany, scarlet-carmine

with darker flakes of the same colour, and white in the throat.

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, S.W., sent a large number of plants, among them being a vigorous variety of Nepenthes Burkei, named excellens; and a diminutive form of the same species, a very attractive plant called N. B. prolifica, and of which a full description will be found on p. 183 of this issue. Boxes of fine blooms of Lemon and Orange-coloured African Marigolds, and also French striped and miniature; Anthurium hybrid delicata, with a pale pink, almost white, spathe; and A. la Flambeau, rich red. A double variety of Hydrangea Hortensis was very good; Gymnogramma Schizophyllum erectum, a strong growing form, and a boxful of cut trusses of Greenhouse Rhododendrons; with a collection of cut spikes of Gladioli, including some of Lemoine's recent hybrids, completed the group: Fascination is rich salmony-red; Sensation rich scarlet; Ambassador rich scarlet with white spots; and General Sheridan, carmine, with white throat. Another group was composed mainly of shrubs, including Eucryphia pinnatifolia, bearing a profusion of large Myrtle-like white flowers; Tilia euchloro, with bold large foliage of a rich green colour, and recommended as an avenue tree on account of the length of duration of the leaves; Sequoia sempervirens albo-spica, with yellow tips to the shoots—a very pretty object; Abies Tsuga, Abies canadensis pendula and Ceanothus azureus albidus.

From Mr. C. Turner, Royal Nurseries, Slough, came some fine Picotee blooms, of which two were certificated, viz., Mrs. Walford, yellow, with crimson flakes on white edge; Countess of Jersey, yellow, rose edge, both good flowers.

Messrs. Paul and Son, Cheshunt, contributed a collection of cut Roses, very good for the season; and a small lot of herbaceous plants; also Phloxes and Spiræas, and the red and yellow-berried varieties of the Mountain Ash.

Three Sarracenias were sent by Mr. A. Wipf, gr. to N. Clayton, Esq., East Cliff, Lincoln; S. Claytoni was very prettily coloured, with crimson-carmine reticulations.

Messrs. J. Cheal & Son, Crawley, Sussex, had a collection of Dahlia blooms, representing all sections, Duke of Clarence, a rich deep crimson Cactus variety, being very good: it has a bright appearance; and Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, sent good blooms of the yellow Cactus-flowered Dahlia Robert Maher.

Messrs. Hurst & Son, Hounsditch, sent flowers of their annual Chrysanthemums, which show a pleasing combination of yellow and bronze with white. Messrs. H. Cannell & Sons, Swanley, Kent, showed Begonia blooms, Giant Heliotrope, and Verbenas, including Uranie, lilac-blue with white eye; Ball of Fire, a fine red. Messrs. J. Peed & Son, Roupell Park, Norwood, sent a large lot of small-sized Gloxinias. And from Messrs J. Carter & Co., High Holborn, W.C., came Petunia, Holborn Blue, a very desirable acquisition, the flower is violet-blue, and of good size—it was one of the most attractive plants at the show.

From Mr. Wythes, Syon Gardens, Brentford, came a well-grown group of Campanula pyramidalis, blue and white; and from the Society's gardens, Chiswick, a large collection of Carnations, Ivy-leaved Pelargoniums, and Brachycome iberidifolia, blue, white, and lilac; Torenia Fournieri, and T. Baillonii, &c.; while from the Royal Gardens, Kew, came some interesting hybrid Streptocarpi, including S. Watsoni, also Chironia pedunculata, rosy-pink flowers; C. palustris, smaller; and Pentstemon puniceus, rosy-red. Messrs. T. & J. Rogers, Lodsworth, Sussex, sent a variegated Adiantum macrophyllum.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair, and Messrs. J. O'Brien, M. T. Masters, E. Hill, J. Dominy, H. Ballantyne, H. M. Pollett, and A. H. Smee.

Messrs. B. S. Williams & Son had a few specimen Cypripediums, the olive-green C. tonsum was good, also C. œnanthum, C. Ashburtonæ superba, and C. grande. Pachystoma Thompsonii was also shown, the flowers are pure white, the lip long and narrow, rich magenta, and the lateral wings greenish; a beautiful flower.

Mr. W. H. Young, gr. to F. Wigan, Esq., Clare Lawn, East Sheen, sent a fine Oncidium Lanceanum with eighteen flowers. A striking Masdevallia named Lowii, came from S. Courtauld, Esq., Bocking Place, Braintree, the sepals are equal, the body is about 1½ inch long, and half an inch broad at the base, white, spotted with rose, and a tail of white, the small, dull crimson lip. Major Mason, The Firs, Warwick, had Saccolabium Hendersonianum, rich rose coloured.

A very attractive exhibit was a collection of Satyriums, from Messrs. Seeger & Tropp, East Dulwich; they included examples of S. erectum (yellow), S. carneum (pink), S. carneum roseum (rose-pink), S. candidum (white), S. erectum nitens (rich yellow). They were all splendidlly grown plants.

From Messrs. F. Sander & Co., St. Albans, came a group of Orchids, embracing some fine forms of Cattleya Gaskelliana, C. Dowiana, C. Nilssoni, and C. Schofieldiana; also Masdevallia Amesiana (Veitchi × Tovarense), apricot colour; Angræcum articulatum, pure white, the flowers about 1 inch across; and Phalænopsis Micholitzii, the flower of which is greenish-white, the long and rather narrow lip white, with coarse hairs and a yellow crest; the leaves are ovate, and shiny-green, about 7 inches in length.

Messrs. J. Veitch & Son, Chelsea, sent Sobralia Warscewiczii with lilac-mauve flowers, and the plant of moderate height; also Cypripedium H. Ballantine (purpureum × Fairieanum); it is of dwarf habit, and shows much of the reticulations of the first-named parent in the dorsal sepal; the petals are greenish-brown, with lines of crimson, and carry hairs; the lip is of similar colouring.

Fruit Committee.

Present: Sir C. A. Strickland, Bart., in the chair; and Messrs. J. Lee, R. D. Blackmore, H. Weir, T. F. Rivers, P. Crowley, G. W. Cummins, J. Cheal, G. Bunyard, W. Warren, J. Wright, J. Bates, G. Wythes, H. G. Balderson, F. Q. Lane, and A. Watkins.

A very extensive collection of Gooseberries came from Messrs. J. Veitch & Sons, Chelsea, numbering about eighty dishes; also several varieties of red and white Currants, and Apples, of which were Lord Suffield, Early Harvest, and Irish Peach; and Jargonelle Pears. Messrs. Paul & Son, Cheshunt, also showed a good lot of Gooseberries. A handsome Cucumber named Express, long, even, and short-shouldered, came from Mr. S. Mortimer, Rowledge, Farnham; it was stated to be a cross between Purley Park Hero and Tender and True. Mr. C. J. Parker, South Norwood, also sent a Cucumber with a dark skin. Peaches, as packed for market, were sent by Messrs. T. Burton & Son, Erith Road, Bexley Heath. The fruits were excellent examples, deficient in colouring, and embraced the following:—Princess of Wales, Osprey, Albatross, and Sea Eagle. Mr. W. Roupell, Roupell Park, S E., sent Apples Red Astrachan, Devonshire Quarrenden, and Irish Peach in good examples. Mr. Wythes, Syon Gardens, Brentford, showed Bananas; and from the gardens of the Society at Chiswick came a large representative collection of Tomatos, the best examples being Chemin, President Cleveland, Red Mikado, Ignotin, and Perfection, of red fruits; and Golden Queen and Prince of Orange, of yellow varieties. A. Lancaster, Esq., Holkham, sent a seedling Melon; and T. T. McGregor, Esq., Great Waltham, sent a seedling Tomato.

Awards were made as follows:—

By the Floral Committee.

First-class Certificates.

To Dracæna Miss Glendenning, from Messrs. B. S. Williams & Son.

To Abies Tsuga, from Messrs. J. Veitch & Son.

To Tilia euchlera, from Messrs. J. Veitch & Son.

To Sequoia sempervirens alba spica, from Messrs. J. Veitch & Son.

Awards of Merit.

To Petunia Holborn Blue, from Messrs. J. Carter & Co.

To Gladiolus Empress of Germany, from Messrs. Kelway & Son.

To Gladiolus Stanley, from Messrs. Kelway & Son.

To Hydrangea Hortensis, fl.-pl., from Messrs. J. Veitch & Son.

To Nepenthes Burkei excellens, from Messrs. J. Veitch & Son.

To Nepenthes Burkei prolifica, from Messrs. J. Veitch & Son.

To Dahlia Robert Maher, from Mr. T. S. Ware.

To Verbena Uranie, from Messrs. H. Cannell & Sons.

To Picotee Miss Walford, from Mr. C. Turner.

To Picotee Countess of Jersey, from Mr. C. Turner.

To Sarracenia Claytoni×, from Mr. Wipf.

To Hypericum oblongifolium, from Messrs. Paul & Son.

By the Orchid Committee.

First-class Certificates.

To Masdevallia Lowii, from Mr. S. Courtauld.

To Saccolabium Hendersonianum, from Major Mason.

To Sobralia Warscewiczii, from Messrs. J. Veitch & Sons.

To Cypripedium H. Ballantine×, from Messrs. J. Veitch & Sons.

Botanical Certificate.

To Phalænopsis Micholitzii,

By the Fruit Committee.

To Cucumber Express, from Mr. S. Mortimer.

Medals.

Silver-gilt Banksian, to Messrs. J. Veitch & Sons, for a collection of fruit.

Silver Banksian, to Messrs. J. Veitch & Sons, for a group of plants.

Silver Banksian, to Messrs. Kelway & Son, for Gladioli.

Silver Banksian, to Messrs. B. S. Williams & Son, for a group of Dracænas, &c.

Silver Banksian, to Messrs. Paul & Son, for a collection of Gooseberries.

Silver Banksian, to Messrs. Seeger & Tropp, for a group of Satyriums.

Silver Banksian, to Messrs. T. Burton & Son, for Peaches.

Bronze Banksian, to Mr. G. Wythes, for Campanula pyramidalis group.

Bronze Banksian, to Messrs. Peed & Son, for a group of Gloxinias.

SOUTHAMPTON HORTICULTURAL.

August 2.—Although there was a slight falling off in the number of the plants exhibited, consequent on several persons having given up competing, the show was a capital one, fruit, and especially vegetables, making a fine display. The exhibits were displayed in three large tents, one being filled with specimen plants, one with the groups and smaller plants and vegetables, and another with fruit and cut flowers. The 1st prize in the twelve stove and greenhouse plants was won by Mr. Cypher, nurseryman, Cheltenham, Mr. E. Wills, gr. to Mrs. Pearce, The Firs, Bassett, following. In the gardeners' class, for ten plants, Mr. Blandford, gr. to Mrs. Haselfoot, Moor Hill, was 1st. In this gardeners' collection was found the seldom seen Lasiandra macrantha floribunda, in good condition, and also Allamanda Chelsoni. Mr. W. Peel, gr. to Miss Todd, Sidford Lodge, Shirley, was second. In the open class for six specimens, Mr. Cypher again took the first place, followed by Mr. Blandford, in whose collection a splendid plant of Allamanda Hendersonii was observed. This exhibitor was also 1st for single specimen flowering plant, showing a superb Erica æmula; Mr. Wills being 2nd with Statice profusa. Mr. Wills staged the best six stove or greenhouse Ferns, very healthy and well-grown choice species. Messrs. Blandford and Wills were 1st and 2nd for six Hardy Ferns. Fuchsias, Begonias, Coleus, Cockscombs, Gloxinias and Pelargoniums were well shown by Messrs. Wills, Innes, gr. to J. Buchan, Esq., Wilton House, Southampton; Busby, gr. to F. Willan, Esq., Thornhill Park, Bitterne; and Mr. E. Varney, gr. to T. B. C. West, Esq., Langdown Lawn, Hythe.

Groups of 120 square feet, arranged for effect, made a good display, and there were five competitors, Mr. Wills leading with a lightly arranged group of well-grown plants. Mr. J. Cuney, gr. to Col. Pepper, Milford Hall, Salisbury, being 2nd, and Mr. B. Ladhams, Florist, Shirley, 3rd. Many hardy plants were used very effectively by this exhibitor.

Cut flowers were numerous and of fine quality, Roses in particular being very fresh looking for so late a date. Mr. G. Rumsey, Wrotham, Kent, was 1st for 24 kinds; Mr. Neville, gr. to F. W. Flight, Esq., Twyford, was 1st for 12 kinds. The stove and greenhouse cut flowers of Mr. Budd, gr. to F.

Dalgety, Esq., Romsey, were very good; as were Mr. W. Clements' Carnations and Picotees, both exhibitors securing first prizes. The Dahlias staged by Mr. West, gr. to F. Wigram, Esq., Northlands, Salisbury, were of fair quality. Messrs. Cheal and Son, showed excellent herbaceous flowers in twelve kinds. Messrs. Perkins and Son, Coventry, were awarded the whole of first prizes for bouquets of various kinds.

Fruit, with the exception of the black varieties of Grapes, was excellent. Mr. W. Iggulden, gr. to the Earl of Cork, Marston House, was 1st for a collection of six dishes, his Madresfield Court Grapes, Hero of Lockinge Melon, and Sea Eagle Peaches, being of conspicuous size and good quality. Mr. H. W. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, was a close 2nd. Five competed in the three bunch competition of black Grapes, Mr. Inglefield taking leading honours with Black Hamburgh, which were in all respects good; Mr. F. Bennett, nurseryman, Posbrook, was 2nd. In white Grapes, three bunches, six competed, and Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Wickham, was placed 1st for fine Muscat of Alexandria; Mr. Inglefield coming 2nd, with the same variety.

The smaller classes in the Grape competition brought numerous exhibitors, prizes mostly falling to the growers previously named.

Peaches.—The competition amongst local gardeners was strong in the Peach, Nectarine, and Melons.

Mr. T. Wilkins, gr. to Lady Guest, Inwood House, took the 1st prize for a collection of vegetables, amongst which were noted Duchess Pea, Carter's Iris Round, and Sutton's Seedling Potato.

Mr. Inglefield was 1st for a collection of Gourds.

PRESTON AND FULWOOD FLORAL AND HORTICULTURAL.

The adjourned annual meeting of members of this society was held at the Castle Hotel on Saturday night, when there was a capital attendance. It was reported that Mr. W. E. M. Tomlinson, M.P., had consented to again accept the presidency, and he was re-elected amidst applause. It was decided that the next show under the Society's auspices should be held on Wednesday and Thursday, March 21 and 22, 1891. There was a large number of interesting exhibits by various members and friends, and Mr. Atherton showed the Tomato pest at work, by the aid of his powerful microscope.

NORTH CRAVEN HORTICULTURAL.

This Society, which is probably one of the oldest of its kind in Yorkshire, held its thirty-seventh annual exhibition on the cricket ground at Marshfield, Settle, on Saturday afternoon. In addition to the prizes for plants, fruits, and vegetables, there were awards for fretwork and wood carving, and another new feature was the introduction of prizes for cage birds, for which there were fifty entries. The show in other respects was equal to its predecessors, despite the unfavourable season.

EDINBURGH WORKING MEN'S FLOWER SHOW.

The twenty-sixth annual exhibition of this prosperous Society took place on the 9th inst., in the Corn Exchange. The conditions under which the exhibits were grown may be gathered from the terms of the heading of the front page of the prize list, which are that the exhibition consists "of plants belonging to the working classes of Edinburgh, grown at windows or in small garden plots, back-greens, area gardens, &c." The schedule is divided into seven classes. Class 1 is open to all kinds of window plants grown inside or outside windows, but exclusive of such as are grown in glass cases. Class 2 is open to all plants grown in pots or boxes, or in any other way than under glass in areas. Class 3 provides competition for plants grown under glass, and is divided into three sections: section 1 is for plants grown in greenhouses, frames, or other glass erections, outside dwelling-houses, and not attached to windows; section 2 is for plants grown in plant-cases, frames, or other glass cases in windows or inside rooms; section 3 provides for plant-cases of different sizes and specified forms. Class 4 is for cut flowers grown in small garden-plots, back-greens, areas, &c., exclusive of those grown under glass. Class 5 is for juveniles from six to fourteen years of age, and the exhibits may be taken from windows inside or outside; but such as are grown in glass-cases are excluded. Class 6 comprises the Mackenzie prizes, which are provided from the interest of £100 given to the Society by the trustee of the late John Mackenzie, Esq., towards the formation of a permanent fund for the Society. The prizes are offered in a sense as special awards to the productions of the least propitious districts for plant growing and window-gardening. Class 7 consists of special prizes for aquariums, collections of plants, Ferns, alpine plants, &c.

The culture in every class was, in many instances, of a high order, considering the cirumstances. Some capital examples of Aralia Sieboldi, Ficus elastica, Petunias, Fuchsias, Selaginellas, and above all, hardy Ferns were represented in such variety and in such numbers and superior condition as would have done credit to any professional gardener. The show is evidently doing good work among the working-classes of Edinburgh, thanks to the energetic Secretary and Treasurer Mr. John Davidson, of Liberton Nursery, and Mr. Morrison, of Edinburgh.

SCOTLAND.

INTERNATIONAL FRUIT AND FLOWER SHOW, EDINBURGH, 1891.

I have been favoured by Mr. Wm. Young, Assistant Secretary of the Royal Caledonian Horticultural Society, with an advance proof of the schedule of the monster show which the Society is now making arrangements for holding in the Waverley Market, Edinburgh, on September 10, 11, and 12 next year, and a note of the leading features of the schedule will, no doubt, be interesting to many.

The total amount offered in prize money is £1226—being £226 in excess of the prize list of the last international exhibition of this Society, held in September, 1881—and this amount may be considerably augmented before the final arrangements are made. Fruit, as is usual at these shows, receives the greatest consideration, but every department is liberally provided for. For two ripe Pine-apples in pots, £6 in three prizes are offered; for four sorts of Grapes, two bunches of each, £30 are offered in three prizes; for six bunches of Grapes, not less than three sorts, £18 10*s*. Besides these there are over forty other lesser classes of Grapes liberally provided for, each with three prizes.

To the best collection of twelve sorts of fruit, including two Pines, two kinds of Grapes, two kinds of Melons, and six of other sorts of fruit, £30 is allocated, in three prizes; to the best collection of twelve sorts of fruit, Pines excluded, and including not more than two varieties of Grapes, the sum of £20 10*s*. is divided among three prizes; a collection of twelve dishes, not more than two dishes distinct varieties of each kind (*sic*), Grapes excluded, commands £15 in three prizes; the best collection of hardy fruit grown in Scotland, and the best collection of hardy fruit grown in England have offered—for the former, £18 10*s*., and for the latter, £18.

A class open to fruit merchants for a table of fruit 10 feet by 5 feet is provided for by £15, in three prizes. For the best collection of Pears and the best ditto of Apples, open to the continent of Europe and the Channel Islands, £35 in three prizes is offered in each class. The same amounts for the same subjects, open to the United States, America, and Canada, are also offered; and for the finest collection of fruits of any sort, open to any other country, the sum of £30 is offered.

The leading prizes in the plant classes comprise £45 for ten stove and greenhouse plants, distinct; £21 for six stove and greenhouse plants in flower; £18 10*s*. for eight foliage plants in pots, not exceeding 10 inches; £18 for a table of plants 20 feet by 5 feet (for quality and effect); and for six Orchids in bloom, £20. Dinner-table decorations displayed on a completely laid table 10 feet by 4¾ feet, for twelve persons, command £12. The foregoing are all open to amateurs and gardeners.

Nurserymen have a few liberal prizes offered them, viz., £35 for a table of plants, 30 feet by 6 feet; £22 for eight Orchids in flower, and the same amount for a group of Conifers and hardy plants.

I am pleased to see that the committee has devoted a good sum of money to the vegetable competition. For a collection of twelve varieties, distinct, £19 10*s*. is offered in four prizes. For a collection of twelve varieties, exclusive of Tomatos, Mushrooms, and Cucumbers, £11 are offered, and for a collection of Potatos, six of each sort, £18 10*s*. are offered in three prizes.

An extra committee of management for this show is formed, and includes the following gentlemen:—Messrs. Wm. Thomson, Clovenfords; Moncur, of McKenzie & Moncur; D. Thomson, D. Mitchell, Angus McLeod, Malcolm Dunn, McHattie, Grossart, McKinnon, J. Downie, and Councillor Clapperton. *W. S.*

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (−) the Mean for the week ending Aug. 9.	Temperature. Accumulated. Above 42° for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (−) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 +	98	0	+ 78	— 72	2 —	156	29.3	23	26
2	2 +	119	0	— 42	— 58	6 —	131	17.5	30	30
3	3 +	135	0	+ 7	— 93	5 —	110	13.0	41	28
4	1 —	134	0	— 48	— 39	5 —	115	14.9	49	36
5	0 av.	134	0	— 68	— 26	3 —	109	13.7	37	31
6	0 av.	139	0	— 55	— 68	2 +	109	17.3	48	33
7	1 +	118	0	— 14	— 73	8 —	133	28.9	32	32
8	1 +	132	0	+ 16	— 81	7 —	125	18.3	40	30
9	0 av.	130	0	— 57	+ 12	1 +	129	23.0	46	34
10	1 +	125	0	— 11	— 56	6 —	145	18.6	27	30
11	1 +	132	0	+ 2	— 15	5 —	140	24.9	46	32
12	0 av.	134	0	+ 33	— 22	2 —	130	21.2	76	42

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending August 9, is furnished from the Meteorological Office:—

"The *weather* has been mostly fine and dry, but showers were rather frequent at the extreme western and northern stations during the earlier part of the time, while thunderstorms and heavy rains were experienced in the south-east of England at the end of the week.

"The *temperature* has differed very little from the normal. In most of the western and northern districts there has been a slight excess, but over a considerable portion of England there has been no appreciable departure from the mean. In 'England E.' a trifling deficit is shown. The highest readings were observed on the 4th or 5th over Great Britain, and on the 8th in Ireland, the thermometer rising to 77° in 'Ireland, N.,' to 78° in 'England, N.E.,' to 81° in the 'Midland Counties' and 'England, S.,' and to 82° in 'England, E.' The lowest readings which were observed at various times in the different districts, ranged from 39° in 'Scotland, N.,' to 47° in

'England, N.E.,' and 'England, S.,' and to 49° in the Channel Isles.

"The *Rainfall* has been considerably less than the mean in all but the southern and south-western parts of England, where a heavy downpour accompanied the thunderstorm of the 9th. At some of our extreme southern stations the amounts measured on the morning of the 10th exceeded an inch, the largest of all being 1·9 ins. at Prawle Point.

"The *bright sunshine* has been upon the whole considerably more abundant than it was during the preceding week, the percentage of the possible amount ranging from 23 in 'Scotland, N.,' and 27 in 'Ireland, N.,' to 48 in 'England, S,' 49 in England, E.,' and 76 in the Channel Islands."

Obituary.

Mr. J. James, of Farnham Royal.— This well known florist and esteemed gardener passed quietly to his rest, at Farnham Royal, in the afternoon of Friday, August 8, at the age of sixty-five years. Suffering from a strained heart, Mr. James, though of fine physical presence, and apparently robust, had long been in indifferent health, and was compelled to keep his bed, finally, for about three months. During the eight years of his residence in Bucks, he had not only erected a number of remarkably good glasshouses, where such florists' flowers as Chinese Primulas, Cinerarias, Cyclamens, and Herbaceous Calceolarias were produced in profusion, and of remarkable quality, but he had greatly improved the surrounding land, of much of which he had become the owner; planted an extensive fruit orchard, and did much to promote in the district a taste for good gardening. He was held in the highest respect by both rich and poor, and was a good and kindly neighbour. His gardening career began at North Hyde, Middlesex, when, as a young man who had been in no private garden previously, but had in his father's garden, at Little Missenden, Bucks, developed a taste for flowers, he undertook the care of the garden of a Mr. Barif, who then was himself an ardent florist, and with whom Mr. James used to exhibit at local and London exhibitions. Later, on his father's death, Mr. James returned home, and took charge of the woods on the estate on which he was born, but after a few years left to become gardener at Redlees, Isleworth, where, with the late Mr. Farnell Watson, he grew various kinds of plants for many years, which gave to the grower and place a capital reputation. After thirty years' service at Redlees, and soon after his employer's death, the deceased took up his residence in Datchet, where his repute as a high-class florist was developed, as all who visited his place had freely to admit.

Markets.

COVENT GARDEN, August 14.

Market comparatively quiet, the soft fruit being nearly finished. Indoor fruit in heavy supply, with prices in favour of buyers. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	3 6-	5 0	Melons, each	0 6-	2 0
Filberts, Kent, per lb.	1 0-		Peaches, dozen,	1 0-	8 0
Currants, red, ½-sieve	3 6-	4 6	Pine-apples, St. Michael, each	2 0-	6 0
— black, ½-sieve	6 0-	7 0	Plums, ½-sieve	7 0-	11 0
Grapes, lb.	0 9-	3 0			
Lemons, per case	12 0-	20 0			

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Artichs., Globe, each	0 4-		Mustard and Cress, punnet	0 4-	
Beans, French, lb.	8 0-		Onions, per bunch	0 6-	
Beet, red, per dozen	1 0-	2 0	Peas, per quart	1 0-	
Carrots, per bunch	0 6-		Parsley, per bunch	0 6-	
Cauliflowers, each	0 3-		Shallots, per lb.	0 6-	
Celery, per bundle	1 6-	2 0	Spinach, per bushel	3 0-	
Cucumbers, each	0 6-	1 0	Sprue, per bundle	1 6-	
Endive, per dozen	2 0-		Tomatos, per lb.	1 0-	
Herbs, per bunch	0 4-		Turnips, per bunch, new	0 4-	
Lettuces, per dozen	1 6-				
Mushrooms, punnet	1 6-				

Potatos.—There is a better demand for best kinds, and prices rule firmer although supplies are heavy. The most saleable sorts are Snowdrops, Ideal, and Duke of Albany. *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	18 0	Fuchsia, per doz.	4 0-	9 0
Aspidistra, doz.	18 0-	42 0	Heliotrope, per doz.	4 0-	6 0
— speci. plants, each	7 6-	10 6	Hydrangeas, doz.	6 0-	18 0
Begonias, per doz.	6 0-	18 0	Ivy Pelargonium, per dozen	3 0-	6 0
Cactus, per doz.	4 0-	12 0	Liliums, various, per dozen	18 0-	36 0
Calceolaria, p. doz.	4 0-	6 0	Lobelia, per doz.	3 0-	6 0
Cyperus, per dozen	4 0-	12 0	Marguerites, doz.	6 0-	12 0
Dracæna terminalis, per dozen	30 0-	60 0	Mignonette, per doz.	3 0-	6 0
— viridis, per doz.	12 0	24 0	Musk, per dozen	1 6-	3 0
Euonymus, in var., per dozen	6 0-	18 0	Nasturtiums, p. doz.	4 0-	6 0
Evergreens, in var., per dozen	6 0-	24 0	Palms in variety, each	2 6-	21 0
Ericas, various, doz.	8 0-	24 0	Pelargoniums, scarlet, per dozen	3 0-	6 0
Ferns, in var., doz	4 0-	18 0	— per doz.	6 0-	12 0
Ficus elastica, each	1 6-	7 0	Petunias, per doz.	6 0-	9 0
Foliage plants, various, each	2 0-	10 0			

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0-	4 0	Pelargoniums, scarlet, 12 spr.	0 3-	0 6
Bouvardias, per bun.	0 6-	1 0	— dozen sprays	0 6-	1 0
Callæthiopica, 12 bl.	3 0-	5 0	Primulas, double, 12 sprays	0 6-	1 0
Carnations, 12 blms.	1 0-	2 0	Pansy, or Heartsease, 12 bunches	1 0-	2 0
— 12 bunches	4 0-	6 0	Poppies, various, doz. bunches	1 0-	2 6
Cornflower, 12 bun.	1 6-	3 0	Pyrethrum, 12 bun.	2 0-	4 0
Eschscholtzia, 12 bn.	2 0-	3 0	Roses, Tea, per doz.	0 6-	1 6
Eucharis, per dozen	3 0-	6 0	— coloured, dozen	1 0-	1 6
Gardenias, 12 blooms	2 0-	4 0	— red, per 12 bun.	2 0-	6 0
Heliotropes, 12 spr.	0 6-	1 0	— Safrano, dozen	1 0-	2 0
Lilium, var., 12 bl.	0 6-	4 0	— outdoor, 12 bun.	1 0-	3 0
Maiden Hair Fern, do	4 0-	9 0	Stephanotis, 12 spr.	1 6-	3 0
Marguerites, 12 bun.	3 0-	6 0	Sultan, 12 bunches	3 0-	4 0
Mignonette, 12 bun.	2 0-	4 0	Tuberoses, 12 blms.	0 3-	0 6
Myosotis or Forget-me-nots, 12 bun.	2 0-	4 0			
Pinks, various, 12 bn.	3 0-	6 0			

Orchid-bloom in variety.

SEEDS.

London: *Aug.* 13.—Messrs. John Shaw & Sons, of 37, Mark Lane, London, write that some quantity of Red Clover seed has recently changed hands and at higher prices; speculation here being induced by the substantial rise cabled from America. Trefoil keeps steady. Trifolium Incarnation, more particularly English is in improved request and is firmer, as is the case also with Rape seed. White mustard has become exceedingly scarce, and being much wanted, the tendency of values is upwards. New English winter tares offer at reasonable figures. Seed rye is also cheap. Blue peas of last year crop are nearly exhausted. Bird seeds unchanged. The Board of Trade returns give the seed imports into the United Kingdom for the first seven months of this year as 263,644 cwt. value £539,709, as against 187,564 cwt. value £409,925 for the corresponding period of 1889.

FRUIT AND VEGETABLES.

Spitalfields: *August* 13.—Supplies continue fair, and trade moderately active at prices as under:—Cabbages, 2*s.* 6*d.* to 4*s.* 6*d.* per tally; Vegetable Marrows, 2*s.* to 4*s.* do.; Cauliflowers, 2*s.* to 3*s.* per dozen; Radishes, 3*s.* to 4*s.* 6*d.* per tally; Sea-kale, 1*s.* to 1*s.* 6*d.* per punnet; French Beans, 1*s.* 6*d.* to 2*s.* per bushel; Scarlet Beans, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Broad Beans, 1*s.* to 1*s.* 3*d.* do.; do., 2*s.* to 2*s.* 9*d.* per sack; Peas, 1*s.* 6*d.* to 3*s.* per bushel; do., 2*s.* to 4*s.* per sack; Greens, 2*s.* to 3*s.* per dozen bunches; Spring Onions, 4*s.* to 4*s.* 6*d.* do.; Turnips, 2*s.* to 3*s.* 6*d.* do.; Parsley, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Carrots, 3*s.* to 4*s.* do.; Mint, 1*s.* 6*d.* to 2*s.* 6*d.* per doz. bundles; Endive, 1*s.* 6*d.* per dozen; Cos Lettuces, 8*d.* to 1*s.* per score; Leeks, 2*s.* to 2*s.* 6*d.* per dozen; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; frame Cucumbers, 2*s.* to 3*s.* per dozen; natural do., 9*d.* to 1*s.* 3*d.* do; Beetroots, 3*d.* to 4*d.* per bunch; Horseradish, 1*s.* 1*d.* to 1*s.* 4*d.* per bundle; Spanish Onions, 7*s.* to 8*s.* 6*d.* per case; Malta Onions, 5*s.* to 6*s.* per cwt.; Dutch Onions, 4*s.* to 5*s.* per bag. Fruit: Pears, 3*s.* to 4*s.* per half-sieve; English Apples, 3*s.* 6*d.* to 7*s.* 6*d.* per bushel; English Tomatos, 4*s.* to 6*s.* per peck; Black Currants, 5*s.* to 6*s.* per half-sieve; Red Currants, 5*s.* to 6*s.* do.; Egg Plums, 6*s.* to 7*s.* do.; Victoria Plums, 5*s.* 6*d.* to 7*s.* do.; Orleans Plums, 6*s.* to 7*s.* do.; Greengages, 7*s.* to 8*s.* do.; do., 6*s.* to 7*s.* per flat; Walnuts for pickling, 2*s.* per half-sieve.

Stratford: *August* 13.—The supply has been good during the past week, and a fair trade done. Cabbages, 2*s.* to 4*s.* 6*d.* per tally; Cauliflowers, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen; Turnips, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen bunches; Carrots, household, 1*s.* 6*d.* to 2*s.* do.; Mangolds, 20*s.* to 25*s.* per ton; Peas, green, 5*s.* to 6*s.* per bag; Onions, Oportos, 8*s.* 6*d.* to 9*s.* per ton; Dutch, 8*s.* 6*d.* per bag; Apples, English, 7*s.* to 8*s.* per bushel; Cucumbers, (frame), 1*s.* 5*d.* to 2*s.* per dozen; Plums, English, 5*s.* to 7*s.* half sieve; Green Gages, 3*s.* to 4*s.* per basket; Lettuce, 6*d.* to 1*s.* per score; Tomatos, English, 3*s.* per dozen lb.; do., foreign, 2*s.* 6*d.* to 3*s.* 6*d.* per box; Gooseberries, 4*s.* per half-sieve; Cucumbers, foreign, 9*d.* to 1*s.* per dozen; Hazel Pears, English, 10*s.* per bushel.

Notices to Correspondents.

Andropogon Schœnanthus (Lemon Grass): *J. H.* Being East Indian, it will live only in your stove. Sow now, or, if the seeds are new, sow in the early spring of next year.

Arundo picta (conspicua?): *J. H.* Spring is the best time for sowing seeds, or dividing the roots. The plant is hardy almost anywhere. Keep seeds and freshly divided plants in sandy loam, in a cool pit.

Begonia Bavaria: *E. C.* It may be obtained from M. V. Lemoine & fils, 134, Rue du Montel, Nancy, France.

Book: *W. N. Domestic Floriculture, Window Gardening, and Floral Decorations.* By F. W. Burbidge, M.A. (W. Blackwood & Son.)

Books: Bedding-out: *J. R.* There is nothing that is new on the subject, and the *Handy Book of the Flower Garden*, by D. Thomson (Blackwood & Sons), remains still the best that has been published. It contains plans, sketches, designs for carpet and other beds, &c.

"Breaking to Bloom": *Flos.* A gardeners' term applied to a plant when it is beginning to show its flowers. An Orchid has so many "breaks," *i.e.*, shoots that will produce flowers.

Cactus and Manchineel: *Flos.* We do not know if these are ever planted together.

Carnation: *H. B.* We cannot undertake to name florists' varieties of flowers. Send it to some florist who makes Carnations a specialty.

Cucumber Disease: *J. J.* The root worm so often figured and described. There is no known cure. Turn out the plants and the soil, and burn.

Eucharis: *A. G.* Thanks! We have seen similar flowers before, and last week had one which was quite as large as yours.

Fig Tree: *Flos.* We are at a loss to understand the meaning of your question. The so-called fruit of the Fig is the swollen top of the flower-stalk, in whose cavity the true flowers, which are very small, are enclosed.

Gros Colmar Vine: *Subscriber.* You may cut back the 2 feet long laterals to four or five joints from the base, and keep the house moderately warm and dry, and well ventilated. There will be no danger from the base buds breaking if the foliage left is entire and healthy. If red-spider infest it, and have robbed it of its vitality, there will be some degree of danger; better then leave the shoots of a greater length, cutting them back to 6 inches from the stem when the foliage begins to put on the tints of decay.

London Pride: *Flos.* Saxifraga umbrosa, so-called either because it grows well in London gardens, and is a favourite with Londoners, or because it was introduced into cultivation by London, the nurseryman, in the time of William and Mary.

London Rocket: *Flos.* So-called, it is to be presumed, because it is recorded to have come up abundantly among the ruins of the great fire of London, 1666. It is not now more common near London than elsewhere.

Milfoil: *Flos.* Achillea millefolium.

Names of Plants: *J. C. G.* Dahlia Mercki Decaisneana.—*J. W.* Spiræa ariæfolia.—*C. H.* 1, Cotoneaster Simonsi; 2, Ruscus aculeatus; 3, R. racemosus; 4, Cupressus Lawsoniana; 5, Cryptomeria japonica; 6, Spiræa Lindleyana.—*W. D.* Epichlöe typhina, a common fungus on grasses.—*J. C.* Eccremocarpus scaber.—*T. & Son, Ellesmere.* 1, Buddleia globosa; 2, Olearia Haastii; 3, Diplopappus chrysophyllus; 4, Veronica Traversi; 5, Atriplex Halimus; 6, Tamarix gallica; 7, Spiræa.—*J. W.* Lælia crispa.—*W. E.* Veratrum nigrum.— *W. Foster & Co.* Brassavola lineata.—*M. P. A.* 1, Aspidium mucronatum; 2, Pteris adiantoides; Anemidictyon phyllitides; 4, Blechnum occidentale; 5, Lomaria gibba; 6, L. nuda.—*G. P.* 1, Lilium chalcedonicum; 2,

Hieracium aurantiacum ; 3, Phuopsis stylosa ; 4, Lychnis coronaria ; 5, Rhamnus frangula.—*Hardy Flowers.* 1, Buphthalmum cordifolium ; 2, Geranium pratense, double flowered form ; 3, Verbascum nigrum ; 4, Lysimachia brachystachys ; 5, Funckia ovata ; 6, Helenium autumnale ; 7 Astilbe rivularis.

NURSERY AND SEED TRADE ASSOCIATION: *A. Grant.* The Secretary is Mr. Butcher, 25, Old Jewry, E.C.

PLUMS FOR A NORTH WALL: *A. P. C.* Rivers' Early Favourite and Early Prolific, Early Orleans, Victoria, Mirabelle, Blue Prolific, Belgian Purple, De Montfort, Gisbornes,' Prince Engelbert, and Yellow Magnum Bonum. These varieties are mostly second-rate dessert, or culinary Plums, which will ripen from the last week in July to the beginning of September, in light land, and in your locality (Essex). To plant late-ripening varieties, or those which want good warmth and bright sunshine to bring out the flavour, would be to court failure.

SLUG: *A. D.* Testacella haliotidea.

STEAM AND VINERY: *H. T. B.* The vinery may readily be heated by the waste steam from the machinery boiler ; but, owing to the great heat of the steam, the temperature of the house would require to be carefully watched by night and by day—in fact, constantly, the difficulty with steam-heating being in maintaining an equable temperature in the building heated. If steam be used alone, the cast-iron pipes which should be stronger than those employed by water may be 4 to 5 inches in diameter, with flange joints, fastened with bolts, and india-rubber washers between the joints ; and in each row of pipes there should be one expansion-joint, and the pipes should rest on roller-bearings. A better plan for a forcing-house apparatus is to conduct the steam by means of an ordinary malleable iron pipe, of small diameter, through ordinary hot-water pipes kept filled with water. In any case, there must be a condensing cylinder to receive the steam after its passage through the pipes. The excessive heat from a steam-heated pipe, unsurrounded by a water-jacket, would require that more aërial moisture be maintained in the house, either by means of evaporating-pans, or by floor-sprinkling, &c., than is necessary with hot-water heating.

"STRIKING": *Flos.* In gardeners' language this means the formation of roots from "slips" or "cuttings," which, other things being equal, can be produced from "wild as from cultivated plants." Another time, if you have occasion to ask several questions, kindly write each one on a separate slip. It will not increase your trouble much, but it will lighten ours a good deal.

TOMATO: *D. W.* It is here regarded as a fruit for culinary and salad purposes, but not as a fruit for dessert, although some persons acquire a taste for it in a raw state. It is allowed very generally to be shown in collections of vegetables at horticultural exhibitions.

YELLOW ROCKET: *Flos.* Barbarea vulgaris.

CATALOGUES RECEIVED.

HAAGE & SCHMIDT, Erfurt, Germany — Bulbs and Flower Roots.

WILLIAM BULL, 536, King's Road, Chelsea, London, S.W.—Tuberous Plants and Bulbs.

DICKSONS & Co., 1, Waterloo Place, Edinburgh, N.B. Flower Roots.

JOHN PEED & SONS, Roupell Park Nurseries, Norwood Road, London, S.E.—Bulbs.

DICKSON, BROWN & TAIT, 43 and 45, Corporation Street, Manchester—Flowering Bulbs.

B. L. COLEMAN, Sandwich, Kent — Dutch and Other Bulbs.

VILMORIN-ANDRIEUX & Co., 4, Quai de la Mégisserie, Paris, France—Bulbs and Strawberries.

THOS. IMRIE & SONS, 137, High Street, Ayr, N.B.—Dutch Bulbs.

W. COTBUSH & SONS, Highgate Nurseries, London, N.—Bulbs.

JAS. M. THORBURN & Co, 15, John Street New York, U.S.A. — American Tree and Shrub Seeds, &c. (Trade List).

COMMUNICATIONS RECEIVED.—G. W.—C. A. W.—F. Ross.—W. A. C.—J. G. B.—J. D.—C. H.—P. W.—W. H.—J. B.—H. E.—C. W. D.—W. B.—D. L.—S. H.—H. S.—W. & N.—Little & Ballantyne (many thanks).—H. N. E.—S. H.—Professor N. — Professor M. W. — J. A. — G. W.—M. P. A., Stockholm.—Vicomte de St. Leger.—J. M., Montrose (many thanks).—J. W.

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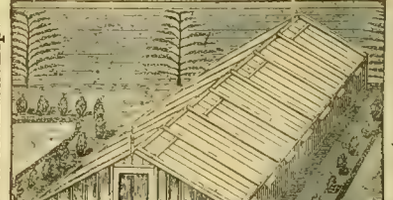
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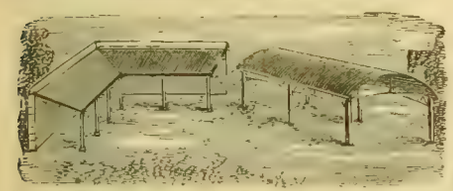
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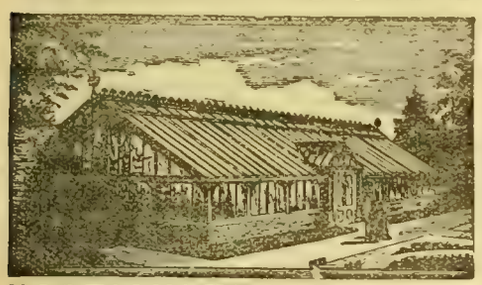
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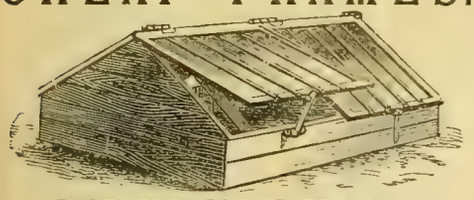
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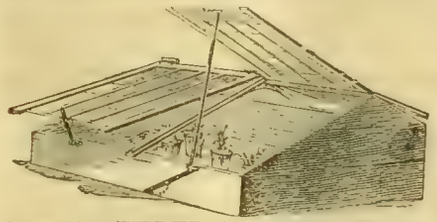
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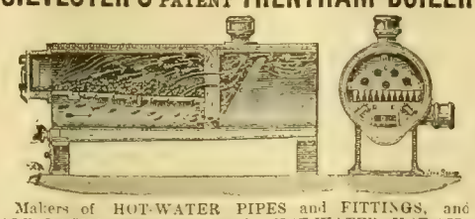
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11	„ ..	0	6	6	22	„ ..	0	12	0
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CRYSTAL PALACE.
THE FRUIT EXHIBITION,
WITH THE
NATIONAL DAHLIA SOCIETY'S GRAND SHOW.
FRIDAY and SATURDAY, September 5 and 6.
Schedules and entry forms on application to Mr. W. G. HEAD, Superintendent, Gardens Department, Crystal Palace, S.E. Entries close on August 29 for Fruit, and August 30 for Dahlias.

BATH AUTUMN SHOW,
WEDNESDAY and THURSDAY, September 3 and 4.

Amongst the Prizes offered are for:—	1st	2nd	3rd
12 Foliage and 6 Stove or Greenhouse Plants	£12	£8	£4
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Group of Plants, not less than 100 sq. feet	£6	£4	£3
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And 5 other Classes for Grapes in varieties. Prizes in proportion. Entries close August 29. For Schedules, apply to
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EVERY MONDAY, WEDNESDAY, and SATURDAY.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, WEDNESDAY, and SATURDAY NEXT, August 25, 27, and 30, at half-past 12 o'Clock precisely each day, several hundred lots of first-class double and single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, SNOWDROPS, and other BULBS, just received from some of the best known farms in Holland, and specially lotted to suit the Trade and other Large Buyers. Also Early White Roman HYACINTHS, Paper White and Double Roman NARCISSUS, LILIUM CANDIDUM, &c., for Forcing.

On view mornings of Sale, and Catalogues had.

Monday and Thursday Next.

DUTCH BULBS.—SPECIAL TRADE SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY and THURSDAY NEXT, at half-past 11 o'Clock, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, received direct for Unreserved Sale.

These Early Auctions have been specially arranged in Lots to suit the Trade and other Large Buyers.

The Auctioneers are now preparing their permanent Lists for the coming season, and will be pleased to enter the Names of intending Purchasers who may desire a regular supply of Catalogues for these Sales.

Auction Rooms and Offices, 67 and 68, Cheapside, London, E.C.

Thursday Next.

1500 LILIUM HARRISII.

Importation just to hand, in splendid condition, the bulbs being from 5 to 7 inches in circumference.

MESSRS. PROTHEROE AND MORRIS will include the above in their BULB SALE on THURSDAY NEXT, August 28.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. Sander, of St. Albans, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 29, at half-past 12 o'Clock, a very choice Collection of IMPORTED and ESTABLISHED ORCHIDS, including—

CATTLEYA SPECIES,

In the way of C. Trianæ. Our Collector has recently been searching in an hitherto unexplored part of Columbia, where he found these plants. With the importation were sent some flowers which were gathered from the plants offered; the flowers are large, and very richly marked, and on the whole they denote great beauty in the plants.

CYCNOCHES CHLOROCHILON,

The beautiful Swan Orchid, of which importations are so very rare. A fine lot of plants have just been received by Mr. Sander, and are in the finest condition. All the pieces are healthy, and some will soon produce their flowers.

CATTLEYA LEOPOLDII.

A few strong healthy plants of this large-growing species.

SACCOLABIUM BLUMEI MAJUS.

A beautiful large-flowering sweet-scented Orchid.

CATTLEYA IMPERIALIS.

Two very fine masses of this noble Cattleya, each having about fifty stout bulbs and many leads pushing up.

EPIDENDRUM MACROCHILUM ALBUM and ROSEUM.

A very good importation of this charming Orchid just to hand, and in fine condition, all the plants being furnished with sound stout bulbs with good dormant eyes.

CYMBIDIUM EBURNEUM.

A very fine lot of healthy plants, which have been imported in good condition, all having good growths.

CYPRIPEDIUM INSIGNE MONTANUM,

From an entirely new district.

Several rare ORCHIDS in flower, comprising Cattleya Schofieldiana, C. Dowiana aurea, good forms of Cattleya Gaskelliana, a plant of the new Masdevallia Rolfeana; a choice lot of Established ORCHIDS, including Bollea Lalindii, Pescatorea cernia, Warscewiczella violacea, Batemannia Burtii, Bollea cœlestis, Oncidium splendidum, Epidendrum Cooperianum, Cattleya maxima peruviana, Cypripedium Dayanum, C. Volonteanum (a new species, very distinct in form and habit, recently flowered by Messrs. Sander & Co.), C. Sanderianum, C. Curtisii, C. caudatum, C. Eliottianum, and others.

On view morning of Sale, and Catalogues had.

Wilmington, near Dartford.

With possession. About a mile and a half from Dartford Station, in the midst of the Fruit growing station.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, London E.C., on WEDNESDAY, September 3, in five lots, the important FREEHOLD ESTATE and MARKET GARDEN, situate on the Main Road from Dartford to Swanley, comprising a total area of about 20 acres, planted with young, thriving and well-established Fruit Trees and Bushes, the detached brick-built Dwelling House, known as Eagle House, Wilmington, 9 capital Greenhouses, 4-roomed Cottage, Sabbing and other Trade Buildings, the whole at present in the occupation of the Vendor; also the brick-built Beerhouse and Shop adjoining, let on Lease at £15 per annum.

The property may be viewed. Particulars and plans had on the Premises; of Messrs. LEWIN AND CO., Solicitors, 32, Southampton Street, Strand, W.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next.

RARE AND VALUABLE CYPRIPEDIUMS.

The following are some of the most choice of the Lady's Slipper family, inasmuch as they are very rare, and also very beautiful forms. Great interest has been centred around these plants during the last few years, as many lovely forms are being sent out by the hybridiser's skill. All the plants offered are very rare and healthy specimens:—

Cypripediums Sedeni porphyreum (C. Schlimii × C. longifolium), Albanense (C. Schlimii × Sedenii), albo purpureum (C. Schlimii × C. Dominii), nitens superbum (C. villosum × C. insigne Maulei), Lindleyanum, stenophylla (C. Schlimii × C. caricinum), javanico superbiens (C. javanicum × C. superbiens), candidulum (C. longifolium × C. Schlimii albiflorum), Rœbelenii, Dominii rubescens, Pearcei, Hincksianum, Haynaldianum, Godseffianum (C. villosum Boxallii × C. hirsutissimum), nitidissimum (C. caudatum Warscewiczii × C. conchiferum), Sallierii (C. villosum × C. insigne), cardinale (C. Sedeni × C. Schlimii albiflorum), Parishii, grande (C. Roezlii × C. caudatum), reticulatum, Io grandis, in flower (C. Argus × C. Lawrenceanum), Hornianum (C. Spicerianum × C. superbiens), microchilum (C. niveum × C. Druryii), Tonsum, Ashburtoniæ tricephalum (C. barbatum × C. insigne), Chloroneurum (C. barbatum × C. venustum?), melanopthalmum (parentage doubtful), pleistochlorum (C. barbatum × C. javanicum virens), œnanthum superbum (C. Harrisianum × C. insigne Maulei), Leeanum superbum (C. insigne var. × C. Spicerianum); selligerum majus, Mrs. Morgan's variety; Harrisianum picturatum, Harrisianum nigrum.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on FRIDAY NEXT, August 29, at half-past 12 o'Clock.

On view morning of Sale, and Catalogues had.

Friday Next.

PHALÆNOPSIS.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Walter Kemsley & Co., of 147, Leadenhall Street, E.C., to include in their SALE on FRIDAY NEXT, an importation of

PHALÆNOPSIS GRANDIFLORA AUREA.
" SCHILLERIANA.
" AMABILIS.
" VIOLACEA.
RENANTHERA LOWII.
CŒLOGYNE DAYANA and LOWII.

On view morning of Sale, and Catalogues had.

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About 20 minutes walk from Feltham Station on the Main London Road.

To Fruit Growers.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on WEDNESDAY, September 3, at 2 o'Clock, in one Lot, the valuable and very productive FREEHOLD FRUIT GARDEN, situate on the Main Road at Bedfont, Middlesex, containing an area of about 35 Acres of excellent Land, fully stocked with well-established Fruit Trees and Bushes, capital detached brick-built Dwelling-house, Stabling, and Outbuildings; at present let, but the tenancy expires at Michaelmas next, when vacant possession will be given.

Particulars and Plans may be had at the Mart, of Messrs. RUSTON, CLARK, AND RUSTON, Solicitors, Brentford, and 29, Essex Street, Strand, W.C.; and of the Auctioneers, 67 & 68, Cheapside, London, E.C.

Sidcup, Kent, S.E.

TENTH ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Gregory & Evans to SELL by AUCTION, on the Premises, The Longlands Nurseries, Sidcup, Kent, S.E., ten minutes' walk from New Eltham Railway Station, S.E.R., on THURSDAY, September 11, at 11 o'Clock precisely, in consequence of there being upwards of 1300 lots, an enormous quantity of unusually well-grown plants, comprising—

25,000 WINTER-BLOOMING HEATHS,

in exceptionally fine condition; unquestionably the best ever offered at these Nurseries, being beautifully set for flower, and including 8000 Erica hyemalis, 5000 E. gracilis; also large numbers of E. Wilmoreana, E. caffra, E. hyemalis superba, and others.

3,000 Erica ventricosa of sorts
2,000 " Cavendishii
25,000 small Ferns for growing on, consisting of Pteris cristata, and cristata compacta, P. Mayi, P. compacta, P. argyrea, and others.
2,000 Carnations, Miss Joliffe and Gloire de Nancy
3,000 Maidenhair Ferns in 48-pots
5,000 Maidenhair Ferns in thumbs
3,000 Tea Roses in 24 and 32-pots, magnificent plants
2,000 Poinsettias
3,000 Solanums, well berried
3,000 Genistas

And other Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

The Great Annual Trade Sale of

WINTER BLOOMING HEATHS and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS desire to announce that the ANNUAL TRADE SALES are fixed as follows:—

THURSDAY, September 11.—At the LONGLANDS NURSERY, SIDCUP, by order of Messrs. Gregory & Evans.

MONDAY, September 15.—At the DYSON'S LANE NURSERY, UPPER EDMONTON, by order of Mr. H. B. May.

TUESDAY, September 16.—At the BURNT ASH LANE NURSERIES, LEE, S.E., by order of Messrs. B. Miller & Sons.

WEDNESDAY, September 17.—At the LEA BRIDGE NURSERIES, LEYTON, by order of Mr. John Fraser.

THURSDAY, September 18.—At the BRIMSDOWN NURSERY, ENFIELD HIGHWAY, by order of Mr. John Maller.

Continued on next column.

Continued from previous column.

FRIDAY, September 19.—At the AMERICAN NURSERIES, LEYTONSTONE, absolute CLEARANCE SALE of the whole of the STOVE and GREENHOUSE PLANTS, GLASS ERECTIONS, &c., the land being required for other purposes.

Descriptive Advertisements of these Auctions will appear in this paper on Saturday next.

Messrs. P. and M. will be pleased to enter names on their permanent Lists for Catalogues of all these Sales.

Auction and Estate Offices, 67 and 68, Cheapside, London, E.C.

Cut Flowers, Plants, and Bulbs.

We hold Sales, several each week. Reference to senders of years standing. Particulars on application.

MESSRS. POPE AND SONS, Sale Rooms, 6, Phillips Street, adjoining Market Hall, Birmingham.

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For Sale.

R. HOLLOWAY, FLORIST and SEEDSMAN, 87, Dulwich Road, and Brockwell Park Floral Dépôt, Herne Hill, S.E., is desirous of DISPOSING of his BUSINESS. Sole reason ill-heath. 6-roomed House, 6 Greenhouses, well-heated Pits and Frames, Stock in Trade, and all Fixtures, and Shop well fitted. To be taken at valuation. 16 years' lease to run. A good connection. Genuine.

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London, W.

To Small Capitalists. No Stock. Good Neighbourhood.

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FOR SALE, a few thousand GENISTAS in small 60's, at 9*s.* per 100; in 5-inch pots from £1 5*s.* per 100. PRIMULAS in thumbs for potting on, at 8*s.* per 100, for cash with order. Post-office Orders payable at High Street, Leyton.—T. BALDWIN AND SON, Edith Nursery, Burchall Road, Leyton.

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SEASON 1890.

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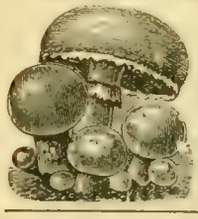
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LILIUM HARRISII	**DOUBLE ROMAN and PAPER WHITE**
LILIUM CANDIDUM	**NARCISSUS.**

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LILIUM HARRISII (Bermuda or Easter Lily), extra size (these are the largest we have seen), 10*s*. 6*d*. per doz., 1*s*. each; good bulbs, 5 to 7 inches circumference, 8*s*. per doz., 9*d*. each.
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ROMANS, exceptionally good in all respects. As good may be bought elsewhere; better cannot be bought. Firm, heavy, large, well ripened, free from gum. With proper cultivation, these bulbs will produce 3 spikes each. 2*s*. per dozen, 14*s*. per 100. N.B.—40,000 already sold to customers who have bought for some years from us. Second size, 1*s*. 9*d*. per dozen, 12*s*. per 100.
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The Largest Bulbs of the Year.
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CARNATIONS and PICOTEES, from choicest stage flowers ... ... per 100, 10*s*. 6*d*.	1	6
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PRIMULA SINENSIS, alba magnifica	2	6
,, ,, Crimson King...	2	6
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The following in strong young stuff for Winter Flowering, established in pots:—

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CYCLAMEN PERSICUM GIGANTEUM, per 100, 17*s*. 6*d*.	2	6
BOUVARDIAS, in beautiful variety ... 6*s*. and	9	0
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LILIUM HARRISII, splendid, ,, 56*s*. 0*d*.	7	6
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As a Supplement
TO THE
GARDENERS' CHRONICLE
FOR
Next Week, August 30,
WILL BE
Published an Illustration
SHOWING
VIEWS IN THE GARDEN
OF THE
Rev. W. WILKS, Sec. R.H.S.



THE

Gardeners' Chronicle.

SATURDAY, AUGUST 23, 1890.

BOLTON ABBEY.

THIS picturesque residence is occasionally visited by its owner, the Duke of Devonshire, in August. It was devised to him through the ancient family of the Cliffords, and the Abbey, now a ruin, near the house, was founded as far back as 1121 by the lady of one of the owners of the barony. Thirty years later the lady and her husband died, leaving a daughter, who married William Fitz Duncan, whom she enriched with a fair slice of good Yorkshire land, as well as with herself and two sons. On the death of one of these boys, the other, and younger one, became the sole hope of his house While still a youth, he was one day drowned while hunting in some beautiful woods, where I lately took tea in the garden of a gamekeeper's cottage. I had left the train on Bank Holiday at Bolton Abbey Station, and, as the Duke of Devonshire was not due at the Abbey till the 11th, when he was expected with a party for grouse shooting, I was not met at the station by outriders and a four-horse coach, as I might have been under more propitious circumstances. But the democracy from the great Yorkshire towns were there, taking holiday, and fifty farmers of the neighbourhood had sent drags and light carts for their conveyance. All the drags were crowded, but I entered one of them, nevertheless, and, making a jocose remark, I sat down in the lap of a stout Yorkshire lady, who was handing plum-cake round to her family. The democracy laughed exceedingly at this, and I remained on nudging terms with the lady till we reached the abbey, when, before parting, we enjoyed another laugh at her expense. A splendid peacock was spreading its tail, and not far off was his mate. As no one seemed to know anything about the lesser bird, I explained matters. "Dear me, how funny," said the lady; "I never saw a hen peacock before." "Nor I," said I.

The ruined abbey, the Duke's house, and the handsome rectory, all stand near one another, and the River Wharfe ripples in its stony bed

as it winds through the grounds. The two best of freshwater fish, the trout and grayling, abound in the river, whose bright stream flowed on, purling innocently in the sunbeams of that glorious summer-day, which the prayers of St. Lubbock, I suppose, procured for the million on the first Monday of August this year. It sparkled in the sunbeams not more than knee-deep, and little reefs of pebbles, and boulders high and dry, offered such secure foothold that one could hardly imagine how such a placid, harmless stream should have caused the death by drowning of that fated boy, "the hope of his house."

It happened in this way. In the deep woods, 2 miles above Bolton Abbey, and in the ravine below the gamekeeper's cottage, the Wharfe contracts itself into a rock channel from 3 to 4 feet wide, through which the stream roars with great force. This chasm is called the Strid, because a stride from one ledge of rock to another across the rushing foaming current would carry you over it. It is—

"A name that it took of yore;
A thousand years hath it borne that name,
And shall a thousand more."

It is said that the water here is fathomless, and if this be a myth, there is still no doubt of the danger attending a false step, such as that made by young Romilly, whose fate hundreds of years ago still invests this spot with interest. It is said that the unfortunate youth was bounding over the Strid, with a greyhound in a leash, when the animal hung back and drew his master into the torrent, where the rush of waters among pointed rocks prevented the possibility of escape. This sad event led to the founding of Bolton Abbey. A few years previously a priory had been erected at Embsay, near Skipton; and it was now translated to the beautiful little valley of the Wharfe, where in 1151—

"A pious structure fair to see,
Rose up—this stately priory."

The Lady Adeliza, the mother of Romilly, ended her days in the retirement of this establishment, which she richly endowed, and here the monks lived in lazy comfort, well fenced from the world in their delightful and secure retreat till the dissolution, when the priory and estates were purchased by Henry Clifford, first Earl of Cumberland, from whom they descended to the Duke of Devonshire, who has recently restored the tomb of the Earl in the parish church at Skipton.

The present castellated mansion, called Bolton Abbey, has grown out of the original gateway of the Priory, which the Cliffords had converted into a lodge for their residence. The site does not offer room for pleasure gardens, and in the midst of surroundings so lovely none are needed. The kitchen garden is at the back of the house, at some distance from it.

It will be remembered that Lord Frederick Cavendish went out as Chief Secretary to Ireland, in 1882. In the words of Mr. Gladstone, in communicating the news of his assassination to the House of Commons, he went to Ireland "full of love for that country, full of hope for her future, full of capacity to render her service." There are two memorials to Lord Frederick at Bolton—one near the churchyard, and another on higher ground commanding a long view of the river valley, erected by his constituents, the electors of the West Riding. They are beautiful objects.

The delightful woods of Oak, Ash, and Beech, with occasional small meadows by the riverside, were alive, on the fourth of August, with holiday-keeping pedestrians, who had reason to bless their stars that in this democratic epoch a few great proprietors still remain, and that the division of their property has not yet occurred. About a mile above the Strid a singular vegetable phenomenon attracts notice. It consists of a young Mountain Ash tree, whose parent seed appears to have fallen on stony ground. In fact it fell and vegetated on a huge stone, which its roots enveloped in their passage to the ground. The roots now clasp the stone like a bird's claw.

The object of my tour was to visit an old schoolfellow and near relation, a merchant of Manchester, who had hired for his family a spacious farm-house at Appletreewick, an old hall admirably restored and furnished for residents of this class. Appletreewick is also on the Wharfe, which flows through pastures before my friend's windows, 6 miles from Bolton. We are here on the edge of the moors. Simon's Seat, one of the two highest of the Yorkshire hills, frowns upon us within walking distance, and from that high and rugged rock, York Minster may sometimes be seen at a distance of 40 miles. Haworth, the birthplace of Charlotte Brontë, lies across the moors on the west. There is not an inch of ploughed land in this part of the country—all is pasture but the meadows on the riverside. The tenant of my friends lodgings, an excellent hard-working young man, who was finishing his hay-harvest, and rising at 3 o'clock every morning, assured us that his farm of 1500 acres included moors too poor and too much exposed for any kind of flock to thrive thereon, except the hardiest sheep of Scotland—the beautiful horned black-faced. He married his wife from a farm several miles across the hills, where three sons and three daughters live, all unmarried, in their solitary desert, keeping house for their father. It is a pleasant walk to the lonely homestead in summer across the treeless hills, but in winter the family have found it wise to lay in a stock of tinned provisions, and on one occasion they were snowed-up for ten successive weeks, and during the whole of that period their intercourse with the outer world was entirely cut off.

My friend's house, however, is situated delightfully, with hills for shelter, a river for music, and trees to ornament all the lower ground. The farmer and his family live in the kitchen wing of the house, as well as four farm servants, who are stowed away in the same direction, too distant from the front rooms to be heard, too shy to be seen. The farm buildings lie out of sight in the rear, and a convenient dairy supplies capital milk and butter. A sheltered lawn in front of the house formed a camping-ground, where a tent was reared, and elders and juniors could sit or lie upon the grass, and read or chat. On a lower slope, nearer the river, my friend, on my arrival, was playing cricket with his five sons, and had just driven the ball very successfully over the wall and through a cottage window, missing the baby's head by an inch.

These records may be suited, perhaps, for a rambling and holiday-keeping season. If the nooks and retreats of our own country were better known, my friend's example would be more widely followed. The daily amusements of the family include long drives to points of interest, such as the district supplies in abundance. Botanist, geologist, historian, biographer, and antiquarian, may each explore the land with advantage. The tree of the country is the Sycamore, which climbs the hills higher than any other, and I never saw the Sycamore so full of seed as it is this year. While the Limes are blossoming in Yorkshire this year—and the Lime is common in Yorkshire—the Sycamores are in full fruit. At the opposite end of Appletreewick from ours, we stopped one day to admire some Sycamores surrounding a square stone-built house. All the houses, from cow-sheds upwards, are built of the durable grit-stone of the neighbourhood; and the fences of the pastures, from the tops of the hillsides and loftiest fells of the river banks, are formed of the same durable material. Stone is more plentiful than wood, and buildings of the seventeenth century look as fresh as those of yesterday. The substantial hall with the Sycamores belongs to Lord Craven, who is derived from an Appletreewick lad of Charles II.'s time. His migration from his native village, his services and success, and the ennobling of his family, are chapters in biography well worth reading by the democracy, who may learn therefrom the principle which has always guided English life. Both gardeners and their employers have hitherto advanced themselves by superior energy and talent, like young Craven, and so, perhaps, it will be in the future as in the past.

One of our drives included Skipton, a place surrounded by sheep walks, which we reached by crossing the Duke of Devonshire's grouse moors between Bolton Abbey and Skipton. The name is said to be derived from *sceap*, the Saxon for sheep. A castle of the ancient Cliffords is here, with a great Yew tree in the courtyard of unknown age. The castle was built in the reign of Edward II., and their motto, "Desormais," is cut in large letters of stone in the battlements of the gateway. Barden Tower, near the Duke's shooting-box of Bolton Abbey, is another residence erected by a member of the same family. Their vault is beneath the altar of the church at Skipton. Their family history, like that of most of the leading families, is closely interwoven with that of our country. They played a leading part in the Wars of the Roses. One, Lord Clifford, fell at the Battle of St. Albans; another at Towton, near York. The Clifford estates were then confiscated, and for many years Henry, Lord Clifford, led the life of a shepherd. Henry VII. then restored to him his property and honours, and the "Shepherd Lord," as he is called, built Barden Tower, where he died at the age of seventy. The son of the "Shepherd Lord" was created Earl of Cumberland by Henry VIII., and one of his successors, the third Earl, was one of Queen Elizabeth's most distinguished admirals. This is but a sample of the crop of history which this part of Yorkshire yields. As for the tower of the "Shepherd Lord," it is now a ruin, like Fountains Abbey, Jervaux, Rievaulx and many other establishments of ancient note, many of them being now attached to modern dwellings, forming an ornament to their shrubberies and gardens. *H. E.*

New or Noteworthy Plants.

CORYANTHES BUNGEROTHII, *Rolfe, n. sp.*,* *and in "Lindenia," t. 244. c. ic. color.*

This is a very fine species of Coryanthes, rivalling C. Fieldingii, Lindl., whose flower Dr. Lindley affirmed to be the largest yet known among Orchids. From that species, however, it may readily be distinguished by the different shape of the hood. In the present species that organ is prolonged in front almost to the edge of the bucket, where it terminates very abruptly; while in C. Fieldingii it is scarcely, if at all, prolonged more than its sides. And, of course, there are various other correlated differences. C. Bungerothii was sent from Venezuela in 1888 by M. Bungeroth to Messrs. Linden, L'Horticulture Internationale, Brussels, in which establishment it flowered in May of the present year.

The structure of the flower and economy of fertilisation in this genus are so remarkable, that it seems strange the species are not more frequently seen in cultivation. Crüger long ago pointed out how the peculiar shape and arrangement of the parts was

* *Coryanthes Bungerothii*, Rolfe, n. sp.—Pseudobulbs ovoid oblong, 2½ inches long. Leaves narrowly lanceolate, acute, a foot long. Scape 1½ foot long, 1-flowered. Bracts ovate-lanceolate, acute. Pedicel with ovary, 5 inches long. Dorsal sepal elliptical-ovate, obtuse, 2½ inches long, 1½ inch wide; lateral ones obliquely lanceolate-linear, acute, 6 inches long, 2 inches wide; all palest whitish-green with numerous light reddish-purple dots. Petals similar, obtuse, 3 inches long, ¾ inch broad, whiter, with fewer and much larger spots. Claw of lip ¾ inch long, hood hemispherical, 2¼ inches in diameter, produced in front almost down to the edge of the bucket, where it is truncate, and 2¾ inches broad. Outside it is yellow at the base, passing into brownish-yellow beyond a broad line of appressed silky hairs, which extend from near the base to the angles of the expanded part; inside it is orange-yellow, with many large reddish-brown spots. The mesochil is orange-yellow, and has fine transverse corrugated plates. The bucket is 2¾ inches across, 2 inches deep, yellow on basal half, paler above, obscurely spotted outside, but inside with many large crimson-brown or purple-brown spots. Behind the three-lobed apex is a thickened rim, which prevents the fluid from escaping. Column 2¼ inches long, vitreous, with large purple-brown blotches on face.

rendered subservient to the fertilisation of the flowers through the agency of a large humble-bee, without whose assistance it is doubtful if seed would ever be produced. When the flowers first open, a large humble-bee, noisy and quarrelsome, attracted by the smell, visits them, for the purpose of gnawing off some cellular tissue which exists under the hypochil, or hood. They are seen in large numbers disputing for possession, and partly by this contest, and partly, perhaps, intoxicated by the matter they are indulging in, they tumble down into the bucket, half-full of a fluid secreted by a pair of horn-like glands at the base of the column. They then crawl towards the front of the bucket and literally force themselves out of their involuntary bath, by crawling out between the mouth of the epichil and the column, which fit together exactly, and are very stiff and elastic. The bee, on emerging, will have the pollen masses firmly glued to its back. Not deterred by its bath it returns to the same or another flower, and the process is repeated, but on escaping a second time the pollen masses are inserted into the stigma, and thus impregnation is effected. Crüger observed that he had seen a continual procession of the insects through the passage specified. Perhaps the absence of the bee partly accounts for their rarity in this country. *R. A. Rolfe.*

Gladiolus decoratus, *Baker.**

This handsome new garden plant is now flowering at Kew for the first time, having been sent from the east coast of Africa by Mr. Last in 1887, and is only another example of the many fine garden plants contained in the Kew Herbarium that await introduction; this one having been discovered at Moramballa by Dr. (now Sir John) Kirk, during Livingstone's South African expedition in 1858, nearly thirty years prior to its introduction in a living state.

Each bulb bears three to four rather thin and flexible, broadly-linear leaves, about 2 feet long, and ½ to ¾ inch broad, of a bright light green. The flower-stem is about 3 feet high, moderately slender, bearing a lax spike of from five to ten large showy flowers. The bracts are 1½ to 1¾ inch long, lanceolate-acute, glaucous-green. The perianth is 3 inches long and 2 inches in diameter, rather compressed, with a slender tube, not longer than the bract, and a funnel-shaped limb, with the tips of the lateral lobes recurving, bright scarlet-red inside, with the disks of the three lower segments marked with a large spathulate bright yellow spot, outside of nearly the same colour, but shading downwards into carmine-red.

As a species it is a very distinct one, and may rank among the best in the genus. *N. E. Brown, Herbarium, Kew.*

The Alpine Garden.

A PROBLEM IN GROWING ALPINES.

It was formerly a puzzle to me why the air of my garden, in which the grass of the lawn is hardly ever dry, is very unfavourable for mountain plants; and I now throw out a suggestion, founded on several years' observation. Atmospheric moisture may be divided into two kinds—(1) that which rises out of the ground locally, and if the air is still, and already wet, remains stagnant near the surface, but if the air is dry and in motion, rises upwards and is carried away; and (2) that which comes from a distance and settles downwards, supplying moisture when none is rising out of the ground. The first of these is bad for vegetation and for mankind; the second, healthy for both. An atmospheric condition most unfavourable for mountain plants is rapid evaporation. The effects of this are often more visible on wet soils when the soil is wettest than when it is dry.

Meteorologists can perhaps explain why plants wither suddenly, both flower and leaf, on certain days, especially before rain, in wet soils more than in dry; but I am sure of the fact. On mountains there is generally little or no evaporation, but the movement of moisture is uniformly downwards, and the dew precipitated upon the herbage drops into the soil in sufficient quantity to feed streams in rainless weather. There alpines always thrive; they also thrive, though not so well, on lowlands, where the soil rests on porous rock, and is so well drained that no damp rises out of the ground. In such places the wet of the atmosphere is borne from a distance, and is, I suppose ozonised, or otherwise purified in its passage. On these soils alpines grow well, but low gravel districts near rivers seem to be excepted. The above are facts which admit various modifications in their application to different places. Of course evaporation may be checked and moisture included in closed structures, but can any chemical ingredients be supplied which will ozonise the enclosed air, or otherwise supply the required conditions, and enable us to flower such plants as Eritrichrum nanum under glass? A solution of this problem would be welcomed by growers of alpines. *C. Wolley Dod.*

PAPAVER PILOSUM AND HELDREICHII.

I have been asked to report upon the distinctness of the two perennial Poppies above named. Papaver pilosum was originally described and excellently figured in the fifth century of the *Flora Græca* (tab. 492) of Sibthorp and Smith, published in 1825. In the first volume of the *Flora Orientalis*, published in 1867, Boissier separates from it as a species Papaver Heldreichii, assigning to the two the following distinctive marks:—

Pilosum.	*Heldreichii.*
Stems tall, scabrous.	Stems dotted with spreading hairs.
Sepals sparsely aculeolate.	Sepals more or less hairy.
Capsule oblong clavate, with a flattish obtusely lobed disk, which is as broad as the capsule.	Capsule narrowly oblong, with a depressed pyramidal disk, which is rather narrower than the capsule.
Stigmas 6—7.	Stigmas 5—6.

The Bithynian Olympus is the only station Boissier gives for pilosum. For Heldreichii he cites the mountains of Lycia and Lycaonia, and as its collectors, Von Heldreich and Bourgeau; and for a variety, sparsipilosum, with stem and calyx glabrous, the mountains of Lycia. There is a good figure of pilosum in the *Botanical Magazine*, t. 4749,* drawn in 1853 from a plant cultivated in Kew Gardens, which Boissier omits to cite. We still have it alive in the garden, and have in the herbarium three of the specimens cited by Boissier for Heldreichii (all three of which were originally distributed as pilosum forms), fine specimens gathered by different collectors on the Bithynian Olympus, additional specimens, gathered in Caria by Pinard, and in Lycia by Professor Edward Forbes, and fine dried specimens of garden origin, including the type of the figure in the *Botanical Magazine*. The specimens from the Bithynian Olympus vary greatly in the vestiture of the stem and leaves. In some the stem is sparsely shortly bristly, in others densely clothed with soft woolly hairs. Taking the whole series, there is every variation in the sepals from densely stiffly hairy to glabrous. In robustness and branching the stem varies from 4 inches high, with a single terminal flower, to 2 feet, with as many as twenty or thirty; I cannot find any material deviation from the capsule as figured in the *Botanical Magazine*, which I should describe as oblong-clavate, with the deep orbicular lobes of the disk projecting a little over the edge of its apex. The number of stigmas varies in the cultivated plant from five to eight. I do not think it is possible, with the information we now possess, to draw any line of demarcation between the Bithynian plant on the one hand and the Lycian and the Lycaonian on the other, and should therefore recommend my horticultural friends to regard the name Heldreichii as a mere synonym of pilosum, and to discontinue its use altogether. *J. G. Baker.*

* *Gladiolus decoratus*, Baker in *Journal of Botany*, 1876, p. 333.

* Under this plate, in the *Botanical Magazine*, the figure in the *Flora Græca* is twice cited, and both times wrongly. It should be 492, not 402 nor 152.

NEW SEEDLING CULINARY PEAS.

As of making books, so of raising new Peas—there is no end, though it might be supposed we have more than enough of new Peas already. That the list of varieties is of formidable dimensions no one can doubt, but at the same time we have by no means reached the limit of the possibilities of improvement; the ideal Pea is not yet produced, but skill, persistence and enterprise are inexhaustible, and the possibilities in Nature almost without limit, so that year by year patient workers are to be found seeking something better than has hitherto been produced.

Up to the time of the late Dr. Maclean, we appear to have trusted to chance sports and selections for new varieties of Peas; but by means of judicious fertilisation and crossing, and the expenditure of much patient labour, Dr. Maclean certainly made very satisfactory headway, and enriched our gardens and gratified our palates with a number of varieties of a very superior quality. To him succeeded Laxton and Culverwell; and later in point of time, Eckford. Others have helped on the work in various ways; but the foregoing names figure as men who went about their work of raising new varieties in an intelligent and scientific manner. I have just counted in a seed list, published early in the present year, 113 reputed varieties of Peas, and yet who will venture to say that the Pea which answers to everybody's expectation of what a model culinary Pea should be, is among them?

A very extensive and interesting trial of seedling Peas has this season been made by Messrs. Sutton & Sons, of Reading. The seedlings experimented with were largely from crosses made by Mr. William Culverwell, of Thorpe Perrow, whose name is associated with Telegraph, Telephone, and other standard varieties. The main aim sought by these crosses has been to produce Peas as early in bearing—and even earlier—than Sangster's No. 1, with large, well-filled pods, and possessing the fine table quality of the Wrinkled Marrow varieties. To this end raisers of new Peas have been labouring for years, and there is reason to think Mr. Culverwell has succeeded in making its attainment more certain than before. One variety, which has been largely used as a seed parent, is the American Wonder. I have always thought this transatlantic introduction to be either Dr. Maclean's Little Gem in an improved form, or else an offspring from it. That it possesses table quality in advance of the Sangster's No. 1 type there can be no doubt: it is dwarf, early, bears good-sized pods, and has proved of much value in our gardens; and it is not therefore surprising that it should be selected as the chief agent in the production of an improved type of dwarf early Peas.

About 500 samples formed the Reading trial, and as a thorough test of earliness, all were sown on a large piece of ground in an open spot, on April 10; thus they may be said to be grown under the same conditions. The principal group of the early seedlings are from American Wonder, crossed with Sutton's Royal Jubilee, a very fine main crop variety, growing about 3½ feet in height, and producing large well-filled pods. The seeds from most of these crosses were obtained in 1886, sown in 1887, proved again in 1888, and selections made; the same occurred in 1889, and this season, by reason of the accumulation of selections, the number has become considerably augmented. Those who have experimented in fertilizing Peas, tell us that a seed-pod from a fertilized flower containing, say, nine Peas, will result in each Pea producing types showing a remarkable amount of distinctness in height of growth, colour, and shape of the seeds, and size and form of the pods; and that these again, when

grown, will produce varied forms. This feature in seed Peas was made manifest at the Reading trial, for it could be seen that selections made last year apparently of uniform character, showed still more variation, and sometimes as crowning the work of the fertilizer in ascending scales of quality.

It is possible to select only a few of these seedlings, as showing how the aims of the raiser are being realised. There was a row displaying the characteristics of American Wonder, a little taller in growth, and about five days later, and yet earlier than Advancer, but the remarkable feature about it was its large well-filled pods of Peas of high flavour; to all appearance an invaluable variety for garden and early exhibition purposes. One selection from this cropped as early as Ringleader, which may be taken as the foremost of the Sangster's No. 1 types, but with large and somewhat curved full pods.

But the most remarkable results were from American Wonder and Jubilee, the latter being made the seed-bearing parent. In the case of some of the seedlings, the character of the dwarf American Wonder was mentioned, but the impress of Jubilee was seen in the large well-filled pods and fine Peas. From this cross were several rows of seedlings, some taller and later than others, but all with fine full pods. One very interesting experiment was a selected dwarf early seedling from this cross, fertilised with pollen from Chelsea Gem, a new early dwarf variety allied to William Hurst. The result was seen in a row of plants varied somewhat in type, and comprising a few that were of a highly promising character, with large pods; and though to all appearance these were in the haulm a little taller than American Wonder, they were quite as early.

To show the variation in seedling Peas, I may name one cross from American Wonder and Jubilee, which admitted of six distinct dwarf types being selected from it; some with light green pods, some with dark green, but all highly valuable from their earliness and good quality. One of the crosses was made with a view of obtaining a garden Pea as early as American Wonder, but of a little taller growth, and with larger, well-filled pods, resulted in four selections being made last year, which are this season showing decided variations in their turn. There is, a peculiar interest attaching to this variation, which makes the task of the raiser replete with pleasant surprises. One very dwarf selection had pods which on comparison proved to be nearly as large as those of Dr. Maclean; another had the pod of Telephone, but fit for use at the same time as American Wonder. Two very fine selections were noticeable, one tall and the other dwarf, very distinct, and both bearing large and handsome, well-filled white pods—varieties that give the pods of G. F. Wilson and Veitch's Perfection the first week in July. This is a substantial gain to Pea cultivators.

Another series of crosses were from Sutton's Early Champion, a model type of Sangster's No. 1, and Telephone; the result being a variety that was only two days later than Ringleader—quite a new type of a first early Pea with wrinkled seeds.

Seedlings from Early Paragon, Bliss, Abundance—one having the character of the latter, but with much earlier pods, were very promising. Another selection of seedlings was from Early Paragon, American Wonder; this was done with the intent of obtaining wrinkled Peas of the finest flavour as early as Ringleader, and here again the results are full of promise for good things.

Improvements in main crop and late varieties have also been attempted, and such fine varieties as President Garfield, Sutton's Perfection, a striking Marrowfat Pea, and others have been employed as seed parents, judiciously crossed by others likely to give the results sought for; and there have sprung from these crosses numbers of very promising dwarf late varieties, which are much branched, and produced large pods abundantly.

With so much valuable material from which to select, it is almost certain that Messrs. Sutton & Sons will obtain a new race of garden Peas suitable for gardens in all parts and all seasons. The task of selecting and fixing the best types is an onerous one; but Messrs. Suttons' method of thoroughly testing any promising type is praiseworthy, and that alone by which a true and consistent stock of any variety can be assured. It is by systematic fertilisation, and rigid selection and a thoroughly fixing of desired characteristics, that reliable Peas of high class merit can be secured; intelligence and patient labour are necessary. *Pisum.*

PASSIFLORA VITIFOLIA.

This is a very fine species, but not so free-flowering as some, which may account for its being less frequently met with than the brilliancy of its flowers would justify. It is an old inhabitant of our gardens which has apparently been lost to cultivation more than once, and re-introduced under a new name; thus it is the P. sanguinea of some, the Tacsonia Buchanani of others, while at the hands of the botanists it has received several synonyms. Those who desire full information as to the botany and history of the species, will find full particulars in Dr. Masters' monograph of these plants in the *Flora Brasiliensis*. The plant is a native of the Amazon district of New Granada and Central America, and varies considerably, whence the multiplicity of names given to it.

Under cultivation its chief enemy is red-spider, which may easily be kept down by occasional syringing with weak tobacco-water or an infusion of Quassia chips.

FRUIT TREES AND THEIR SITUATION.*

Fruit trees, like other living objects in Nature, are liable to be constitutionally affected in growth and fertility by circumstances of soil, climate, latitude, elevation, and other natural causes, and as this England of ours presents in a limited space greater climatic conditions and diversity in its geological character, and therefore soil, than any other portions of Europe, it follows that to have anything like an assurance of success in fruit-growing, we must know the conditions of soil that exist, and the varieties of trees that have shown by their vigour, fertility, and duration, the mutual adaptability that is requisite between Nature inert and vital.

Pursuing the idea that certain physical conditions are important factors, and so necessary to be considered in the cultivation of fruit trees, it may be interesting to those of our visitors unacquainted with Leicestershire to mention a few salient features in the geology of the county, and a very remarkable one is seen in the range of hills that rise north of the town, and constitute the Charnwood district. This mountain range, for such it really is, attains an elevation of a little over 900 feet, and the rocks of which it is composed, consisting of granite, syenite, slate, and sandstone, are of considerable economic value. I mention the occurrence of this interesting range because in the long period of time since its obtrusion, its waste by atmospheric causes has been considerable, and the *débris* of these hard rocks has usefully modified some of our heavy soil; and apart from the slow operations of Nature, we have in the active working of the granite quarries great resources of dust and pulverised granite rich in feldspar, which both in fertilising action, and in keeping the soil open, is of especial value.

A general glance at the geological map of the county of Leicester, and very little consideration of the circumstances it reveals, will be sufficient to convey the fact that it does not enjoy any special natural advantages that would constitute it a fruit-growing county. It certainly does not possess the recommendations either of climate or the conditions of soil that distinguish districts pre-eminent for fruit growing, like Kent or Hertfordshire; situated in the centre of England, and having a general elevation of from 300 to 500 feet above sea-level over the greater part of it (the exception on altitude being the Charnwood range, which I have already described), it may be inferred from the rocky character of its more elevated parts, and its general altitude, that its climate is less genial than from its latitude alone we might be led to expect. Elevation, a great extent of cold clay land and marls, both of the trias and lias, also conduce to bring about this result. Whilst I have freely commented on the physical disadvantages of the county, I may, with the same degree of freedom, mention the favourable circumstances resulting from the climate and soil that belongs to it. Its general cool climate has the effect of retarding the blooming of fruit trees, and this is an advantage appreciated by the practical man, when, as the great churchman who died at Leicester Abbey said, "The third day comes a frost, a nipping frost." We often hear of the destruction of the fruit blossoms in the South-eastern counties, when we are safe from the same calamity through the undeveloped condition of the buds.

Although the river system of the county is of a somewhat restricted character, and there are not found the extensive valleys possessing rich river deposits such as are found contiguous to the Thames, the Trent, and the Lea, yet the materials from which these loams were derived exist in abundance, but in a concentrated form. Our granites, limes, gypsum, ironstone, and sandstone, as they have been in the past so they remain still, a rich storehouse of mineral matters available for distribution by man's agency, or the slower but inevitable operations of Nature in her system of soil-making. As illustrating this opinion of the innate capabilities of the land of Leicestershire, I may say that whenever fruit-growing has been taken in hand, and pursued with knowledge and intelligence, a considerable amount of success has been achieved. The Grapes grown by Mr. Henderson, of Cole Orton, had a name and a fame throughout the land. Beau Manor, shadowed by the cold rocks of Charnwood, in the skilful hands of Mr. Hamsher, has furnished fruit of great excellence. Gopsall and other places have also afforded instances to substantiate my argument, and orchards well placed and managed have suggested, rather than exhibited, what may be done in this county.

The influence of soils on the health of trees is pretty well, if not understood, certainly acknowledged. An unhealthy tree is at once the subject for the attacks of insects. Good cultivation, by promoting vigour, enables a tree to overcome its enemies. In a deep fertile soil, or a situation naturally adapted to the habits of fruit trees, vitality is increased, and vegetable existence is prolonged. Showing how important healthy foliage is in aiding the fruitful development of the bud, we have the example of the late and the present season. The blighted condition of the trees last and the preceding year was so marked that it invited discussion, and numerous remedies were suggested and tried. It is now sufficiently evident to us that the unfruitfulness of the present season is largely due to the injury sustained by the foliage of the trees last year, for no frost of sufficient severity occurred to destroy Apple, Pear, and Plum blossom. This experience suggests the importance of maintaining the foliage of a tree in health and vigour.

Two very important matters are drainage and shelter. In a county like this it is extremely difficult to lay down any rule for the former, but stagnant water should not be allowed to exist below an orchard. Shelter is all-important. We seem to be particularly exposed to the action of high winds. The question of belts of trees, and of the sorts to be employed, is also worth consideration.

The selection of suitable Apples, Pears, and Plums, for private gardens, as well as those cultivated exclusively for profit, is a subject that demands practical local knowledge and consideration. Those who grow for home consumption must naturally select the kinds likely to afford a supply of fruit in succession from an early to a late period;

* Extracted from a paper by Mr. William Ingram on "Fruits for Leicestershire," read at the Leicester meeting of the British Fruit Growers' Association.

while the grower for profit will confine himself to a few well-known prolific kinds, to come in early and late, so as not to be in competition with American importations. *W. Ingram.*

Roses.

ROSES AT THE ROYAL AQUARIUM.

No one who has watched the peculiar character of this season need have been surprised at the excellence of some of the blooms exhibited at this show on the 29th ult. During that cold weather in June and the next week or ten days in the early part of July, Roses hung fire wonderfully; they remained hard and fast in the bud, that the wonder was so many good Roses were exhibited. In consequence of this, "maiden blooms" were rarely if ever shown at our earlier exhibitions; when, after the heavy rains which prevailed in most parts of the country, more genial weather set in, the maiden blooms made their appearance. I suppose there is no question amongst rosarians, that the finest, most substantial, and largest flowers are to be had from such plants; and I imagine it was to this cause is to be attributed the appearance of so many really fine blooms at the show on the 29th. A report of the show has been already given, and my brief notes only refer to a few points of excellence which struck me.

In the large collection of twenty boxes exhibited by Messrs. Paul & Son, there were, as might have been expected, some remarkably fine blooms. If any doubt existed as to the propriety of bracketing together as synonymous, or at least too much alike, Marshal P. Wilder and Alfred Colomb, must have been dispelled by the very fine box of the former shown in this collection; it might have been labelled Alfred Colomb and no one would have been a bit the wiser, and had one of the boxes of Alfred Colomb exhibited by the English Fruit and Rose Company this season been placed along side of it, the similarity would have been at once perceived. Of course, if one Rose is in good form and the other not, it is easy to say one is brighter than the other, but where both are alike well grown, then I am sure the verdict of the National will be considered just.

There were two other Roses whose respective merits were well seen in this collection, Her Majesty and Mrs. John Laing. I have always freely expressed my opinion concerning the former, and I see no reason for altering it; that it was shown by Messrs. Paul & Son and others in good form, cannot be denied, but it is a rare thing to find it so, to get it large without being coarse. The same stands contained good blooms of a Rose one rarely sees staged on exhibition stands, Paul Neyron, for the same reason—but here were blooms of large size and without that defect of coarseness, and I believe Her Majesty is the same, while it has another defect from which the other is, comparatively speaking, free—mildew; this it develops sooner and with greater facility than almost any Rose I know does. It was a wise idea to give it the name it bears; and Ophelia's question, "What's in a name?" might be answered by "A good deal." Had this been called Mrs. John Smith, I think it would ere this have been as sparingly cultivated as Paul Neyron. Now Mrs. John Laing, another Rose of the same raiser, is a horse of another colour; it is a very beautiful, well-formed flower, of a very exquisite shade of pale pink, resembling in that respect Madame Gabriel Luizet, but very distinct in form. Some grand blooms of it were in Messrs. Paul's collection, and did not fail to elicit much approval. I have never seen it more beautiful in colour.

A box of L'Idéale, Nabonnaud's Tea Rose, which I noticed last year, was most charming. It is a Rose that will hardly ever, if ever, meet the requirements of the exhibitor; but for decoration, and especially for button-holes (are they going out of fashion, if so more the pity?), it will dispute the place of honour with William Allen Richardson. There is a greater variety of colour than in that recognised favourite, combining peach, orange, rose, and yellow in a most remarkable way, and we may well forgive the raiser for having sent out so many useless flowers when we think of L'Idéale, Francisca Kruger, and Suzanne Rodocanachi. A wet season, such as the earlier part of July was, is not favourable for the production of some Roses, notably such Teas as Jean Ducher, and therefore a fine stand of this beautiful flower shown by Messrs. Prior & Son, of Colchester, was very acceptable; this firm is evidently bent on taking a place amongst Rose exhibitors, and had some very good flowers on the stands they exhibited.

Messrs. Paul & Son had several of their new seedlings, Mrs. Paul, the new Bourbon which obtained the gold medal of the National Rose Society; Bruce Findlay, T. B. Haywood, and Dowager Duchess of Marlborough, but I reserve my notes on these until I can review the new Roses of the year.

Two of the Irish Roses were shown in excellent form, Earl of Dufferin, H.P., and Miss Ethel Brownlow, Tea, these were the first sent out by Messrs. Dickson & Son of Newtownards, and have fully maintained the good opinion previously formed of them. Earl of Dufferin was here seen in several stands in great beauty, with its brilliant colours, high centre, and wide and deep petals. Miss Ethel Brownlow was also very fine; I should almost describe it as a refined Madame Lambard, without the tendency to dinginess which so often spoils that flower. I think the former is worthily maintaining its character in giving us new and saleable Roses.

The stands of Niphetos and Souvenir de S. A. Prince suggest a comparison between these two Roses. I do not think that, beautiful as the latter is, it will supersede the former; it has the roundness of the flower from which it has sported, Souvenir d'un Ami, and that is not such a favourite shape in Tea Roses as the long pointed bud of Niphetos; but the latter Rose, magnificent as it is in petal, and exquisite before it fully opens, has an ugly way of sprawling about, which too often detracts from the symmetry of the stand in which it appears. Neither of them is absolutely a pure white—one has a tendency to be occasionally flushed with pink, and the other a faint touch of green. There is another Rose which was well shown, and to which some growers give the preference as a white Rose, viz., the Hon. Edith Gifford; no one could see the blooms of this shown by Messrs. Prior without being struck with their beauty; the form is perfect, the petals are stout, and the plant vigorous and very free flowering; there is a very faint touch of pink in the centre of the flower, which, however, occasionally disappears altogether, and then it is the perfection of a white Rose. One other flower was shown, which at one time seemed as if it would lay claim to being *the* white Rose. The Bride, a flower of American origin, and a sport from Catherine Mermet; and those who grow Teas know what an uncertain flower that is, how difficult to get just right, and I very much fear, from what I have seen, both in my own garden and elsewhere, that the daughter partakes of the same fickleness as the mother, and I do not at all think that it will supersede the three already mentioned.

Another Tea, which had not been previously well exhibited this season, was, as I have said, Jean Ducher; the wet cold weather is especially bad for it and Roses of this character. It is a very full Rose, and the petals somewhat thin; the consequence is that in wet, cold, dull weather it is a shapeless mass of pulp, abso-



Fig. 32.—Passiflora vitifolia: flowers scarlet. (see p. 212.)

lutely refusing to open. But Messrs. Priors' stand was a glorious one, the warm weather had brought it out in its real character, and most exquisite it is when it comes so. Alas! that is so disappointing in our uncertain summers.

The identity of two other Roses, Jean Soupert and Grand Mogul, was fully established by the blooms exhibited here, and it must be anything but a pleasing thought to those who expended the seven-and-sixpence or half-a-guinea on the latter that they were paying it for a Rose identical with that which they had in their collection already. I very much question whether the same will not prove to be true of Duchess of Albany and La France. *Wild Rose.*

The Bulb Garden.

PLANTING DAFFODILS.

The time for planting Daffodils is at hand, and the important question arises, How deep ought they to be planted? Mr. James Walker and Mr. Hartland, whose authority is first-rate on this subject, both of them advise shallower planting than I have found desirable, recommending in general a depth of 4 inches from the crown of the bulbs to the surface of the soil, but, of course, allowing a difference for the size and kind. It must be remembered, however, that this refers to bulbs which are lifted and transplanted every year, and this makes a great difference. Where bulbs are to be left for several years without being moved, I am inclined to think that deeper planting is better—quite twice as deep as that above mentioned.

No one should venture to lay down an absolute rule on such a subject, as soil makes a great difference, and experience is the best guide in every garden. But I find that in this deep and retentive soil, shallow planting produces a tendency to multiply rapidly, to the deterioration of the size of the bulb and the flower. I have certainly noticed, in beds of wild Daffodils, that when I have selected an individual of extra large flower and growth, the bulb is deeper than average, and larger if reached. I have found the same rule hold in my garden. Newly purchased bulbs, if fine and well ripened, will the first year produce equally good flowers, if planted in good soil, whether planted deep or shallow. To judge of the respective merits of deep and shallow planting, the second and third flowering season must be waited for; and I should recommend those who wish to decide between the merits of the different depths to divide a dozen similar bulbs, planting in the same border and soil, half at a depth of 9 inches, and half at a depth of 4. and, having labelled them carefully, without disturbing them in the interval, to let us know the result when they are in flower in 1893. *C. Wolley Dod, Edge Hall.*

THE HOLLYHOCK.

I wrote about this plant on p. 483 of the last volume, and had a good deal to say about the disease. It is rather remarkable that we saw nothing of the fungus for two years when the plants were left out-of-doors to take their chance summer and winter, and as soon as we propagated from the growths thrown up from the base in a warm house, after they had been kept in pots in a cold frame all the winter, the fungus appeared. We did all we were able when the plants were small, and kept it well under; but it has appeared again, though not so seriously as to prevent the plants from flowering well. The young plants raised from cuttings taken off in February have each produced long handsome spikes; it will thus be seen that a good display can be made even with the disease upon the plants. My experience goes to prove that the plants should be kept in cold frames during winter, if it is not safe to trust them out-of-doors; and that propagating the plants in a warm house in the spring incites the spores to development.

It would be well to propagate as many plants as possible during the summer from eyes and side-growths, being careful to take clean cuttings; and if this is not possible, let all affected leaves be removed, and the others be dipped in some solution likely to destroy the fungus. I have used a strong solution of soft-soap and flowers-of-sulphur upon the leaves, after removing those upon which the fungus was to be seen; this seems to be a preventive. Mr. Harry R. Mein, of Messrs. Stuart & Mein, Kelso, N.B., has been trying numerous experiments with this disease, and finds a solution of Condy's Fluid destroys the fungoid growth, and does not in the least injure the leaves. He says in a letter to me, that plants which were smothered with the disease, after being soaked in the Condy's Fluid solution, are now quite clear. All good growers of the Hollyhock have been trying various methods to get rid of this troublesome disease; it would be well if they would let us know how they have succeeded.

Any time during the present or next month, cuttings may be put in, and they will form roots in a close frame, shaded from bright sunshine. Ventilation will be necessary by day, but the frames may be shut up close at night. Single eyes from the side growths, put in as Vine eyes are, soon push through the ground, and form roots readily. Any other shoots from the base cut off with a heel attached, speedily form roots in warm weather; but some care is necessary in watering them until roots are really formed, as they have a tendency to rot at the base, but when once roots are formed, they are free from danger in this respect. It is best, I think, to put each cutting or eye singly in the centre of a small pot, using a sandy soil; and when they are well rooted, repot each in a large 60 or small 48-sized pot, and inure the plants to stand in the open air by gradually exposing them to the sun, and ventilating the frames where the rooted plants are, more freely. This free exposure to the open air is necessary to inure the plants for the winter. *J. Douglas.*

—— I am sorry to find that the fungus which for years past has attacked the Hollyhock, and sometimes in a most malignant form, has this season put in an appearance in many parts of the country. I was in a garden in the Midland Counties the other day where Hollyhocks are grown for exhibition, but there was scarcely a leaf left upon the flower-stalk of the plants; and I remember the late Mr. William Chater telling me, on one occasion, that he sometimes found the disease to be more destructive during a wet, than in a dry summer. The disease is no respecter of quality, for it is not unusual to see patches of common seedling Hollyhocks in cottage gardens as badly affected with the disease as the most refined varieties grown for exhibition. It was at one time thought that the high degree of perfection to which the Hollyhock had been brought had operated to weaken the constitution of the plants, and render them less able, constitutionally, to resist the disease. Then, on the other hand, it was stated that high cultivation was the best remedy. These opinions were the outcome of individual experiences, and they have never been satisfactory enough to enable a general conception of the operation of the disease to be framed.

I well remember when the disease put in an appearance for the first time at the Royal Nursery, Slough. Hollyhocks were then largely there, and were in great demand. It was about 1856—57, soon after a very fine batch of new varieties, raised by the late Mr. Anthony Parsons, then of Danesbury, Welwyn, had been distributed by Mr. Turner. A batch of seedlings was grown every year at Slough, and just as they were coming into bloom a portion of the plantation was stricken as if by lightning, the foliage rapidly turned brown, and a great many of the plants died outright. It soon spread to the plantation of named varieties, and then every effort was made to preserve the stock by means of cuttings and eyes; a large number of each were put into frames, but the greater portion perished. I am far from stating this was the first appearance of the disease; but we heard soon after that it was being discovered in other collections. Possibly it had put in an appearance earlier elsewhere; at Slough it was thought to be only a temporary visitation, for no one imagined for a moment at that time it would become so general and so destructive. At that period Mr. William Chater, of Saffron Walden, was at the height of his fame as a raiser, and was cataloguing some superb varieties of Hollyhocks. But the disease attacked his collection with great severity, and though he resolutely grappled with it for a number of years, it overcame him at last, and he was unable to publish a catalogue after 1875–76. I visited him on one occasion, and found him growing his Hollyhocks in trenches, like Celery, and during dry weather he filled the trenches with water, hoping by so doing to minimise the effects of the disease. But all his resources failed him, and when I visited him in 1877 or thereabouts, his once splendid collection was reduced to but a few plants.

As Mr. Douglas is to read a paper on the Hollyhock at the meeting of the Royal Horticultural Society on the 26th inst., the incidence of the disease will, no doubt, be mentioned. Those who desire fuller information as to the way of life of Puccinia malvacearum should consult Mr. W. G. Smith's article in our volume for 1874, June 13, p. 767, and that of Mr. Plowright, in Nov. 11, 1882, p. 617. See also figs. 33, 34, and 35. *R. D.*

Orchid Notes and Gleanings.

LÆLIA ELEGANS BROOMEANA.

This beautiful and richly-coloured form of the L. Turneri section of L. elegans, was first remarked by the late Mr. B. S. Williams, when visiting the collection of Joseph Broome, Esq., at Sunny Hill. Llandudno. Mr. Williams considered it to be the highest example of its class, and having seen the plant at Llandudno, and now again flowers of it, I must say that I agree with the opinion of the late great practical Orchidist, although some persons might consider L. e. Tautziana to be its equal. L. e. Broomeana has very stout pseudobulbs of about 20 inches in height, and bears several flowers on a spike. The sepals are white, suffused with rose, and a few minute spots of darker rose; the petals broad, and of the length of 3 inches, are of a bright purplish-rose colour, veined with a slightly darker tint. The lip, the distinguishing feature of the flower, is of the most intense glowing purplish-crimson colour, with the exception of the basal portion that forms the tube of the flower, which is white tinged with sulphur, and veined with purple on the inside. A great feature in this fine variety is the continuity of the middle and side lobes of the lip, the isthmus of the middle lobe usually seen being entirely wanting, The flowers also give off a delicate odour. *James O'Brien.*

Saccolabium Hendersonianum.

I had the pleasure of being the first to flower this beautiful species, which so few seem to grow into anything like a satisfactory condition. In Major Mason's collection at The Firs, Warwick, where Dendrobium MacCarthiæ and various other difficult plants thrive, it grows vigorously, and flowers in profusion. One of its fine upright-growing flower-spikes, recently sent to me by Major Mason, proves to be one of the finest varieties that I have seen; it is nearly 6 inches in length, and bears forty-one flowers; each flower is three-quarters of an inch in width, of a bright rose-pink, except the spur-like lip, which is white with a pink tip, and crimson spot on each side at the base. A pretty feature in the flower is, that the cellular tissue reflects a crystalline or frosted appearance. *J. O'B.*

Angræcum Ellisii.

A fine specimen of the above comparatively rare Orchid is in flower at Clare Lawn, East Sheen, just now. The plant has fourteen healthy leaves, carrying a drooping spike of twenty-four white flowers. One of the distinguishing characters of this

species is the manner in which the pedicel of the flowers is seated on a cushion-like process arising from the spike. This peculiarity is also found in A. articulatum, but is not so prominent, and this latter species is often sold as A. Ellisii. Both are best grown in baskets.

Another pretty and curious Angræcum in flower is A. Scottianum, with its pure white shell-like flowers. This does very well on rafts. *W. H. Y.*

Dendrobium Galliceanum.

This is possibly only a variety of D. thyrsiflora, but in any case it is a beautiful Orchid with oblong white sepals, spoon-shaped petals, undulate at the margins, and a canary-coloured lip, finely cut at the margin. It is figured in the *Lindenia*, t. 241.

Selenipedium grande ×.

A well-known hybrid out of S. Roezli, by the pollen of S. caudatum. A characteristic figure is given in the *Lindenia*, t. 242.

Coryanthes Bungerothi. (See p. 210.)

This is an Orchid which will gratify the plant-lover in the highest degree. Those whose concern



Fig. 33.—The hollyhock fungus on the fruits of the mallow.

is only with the superficial beauty of a flower, will deem it more curious than beautiful, and naturally prefer a Cattleya. Happily, both tastes can be gratified. There are plenty of Lælias and Cattleyas to delight the amateur, and there are not a few Stanhopeas, Cataseta Mormodes and the like to gratify the *connoisseur;* and among them none more remarkable than the Coryanthes, of which a coloured figure is given in the *Lindenia*, t. 244, and a description by Mr. Rolfe at p. 210, to which we refer for further particulars. We may also call attention to the observations we made on the structure and adaptations of these curious Orchids in our volume for May 6, 1882, p. 592.

Cœlogyne ocellata.

A good coloured figure of this species is given in the *Lindenia*, t. 243.

Orchids at Ravenswood, Melrose.

In the collection of Orchids at Ravenswood there are some fine specimens, and a visit at an earlier period revealed in the cool-house, which had a gay display of Ada aurantiaca, with several spikes of its beautiful orange-scarlet flowers. Cœlogyne cristata, Chatsworth variety, was well-flowered, the individual blooms of great size. A plant of Cœlogyne cristata maxima was also in bloom, which at first sight looked very like the Chatsworth variety, but on closer inspection the variety maxima looks superior, having more substance in the flower. Cœlogyne cristata Lemoniana (Veitch's variety), was in flower in a basket. Odontoglossum Pescatorei are represented by some grand varieties; one plant, which was a great beauty, had a panicle of 100 blooms. Some fine varieties of Odontoglossum Alexandræ were also in flower. I observed an Odontoglossum luteo purpureum with large flowers.

Of Odontoglossum Rossi majus, there are some fine plants and varieties grown in baskets, and were well flowered. Oncidium macranthum, with very long panicle, had some noble flowers. Among the Lycaste Skinneri, one plant in an 8-inch pot is very conspicuous; it is a very fine dark variety, and bore twenty-six blooms. L. Skinneri delicatissima was also in flower, and was certainly very beautiful.

Noticeable among the Masdevallias was a well-bloomed plant of Shuttleworthii. Many fine plants are showing well for flower, among which is a valuable variety of Cymbidium Lowianum, with four

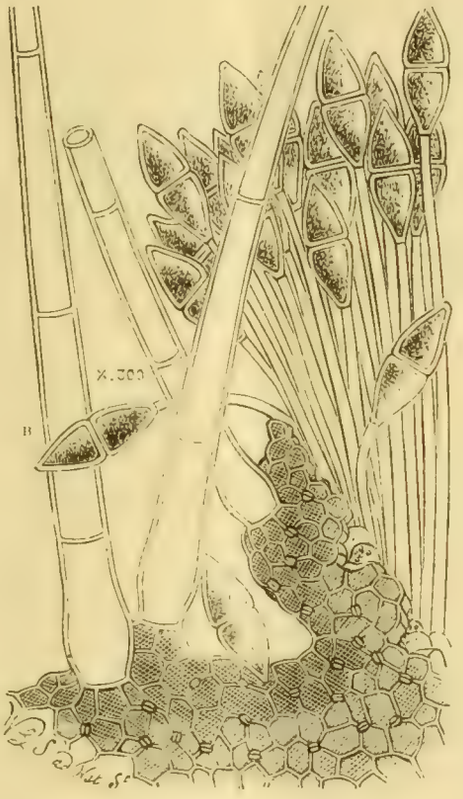


Fig. 34.—The hollyhock fungus, magnified.

strong flower spikes. Cattleya citrina is well done here; and several fine plants of Oncidium incurvum had many spikes, one in a 6-inch pot I noticed had seven strong flower spikes.

In another house are to be seen some fine Cattleya Trianæ in flower. A very beautiful and fine variety of Cattleya amethystoglossa was conspicuous; several fine varieties of Dendrobium Wardianum are noticed, one plant with thirty large blooms on one bulb, another plant growing in a basket had fifty on three bulbs. Vanda cylindrica, which is rather difficult to flower, had some beautiful blooms, and a very fine variety of Cypripedium Argus was noticed. In the collection of Dendrobes are some fine plants sent home from Australia by Admiral Fairfax. The well-being of all the plants plainly says that Mr. Yea, the gardener, well understands their requirements. *J. Robertson, Earlston.*

Hottonia.—M. Baillon considers this beautiful British aquatic plant as merely a form of Primula modified by the medium in which it grows. He points out, also, the similarity in the inflorescence to that of Primula japonica.

VIOLAS AT CHISWICK.

It is sometimes asserted, and chiefly by those who have failed in their culture, that Violas will not do well in the South. Some nine or ten beds of plants, supplied by Messrs. Dobbie & Co., Rothesay, and now in beauty in the Royal Horticultural Society's gardens, would seem to prove that they will grow and flower well on warm land. Perhaps we have had, and are having, the kind of weather that just suits the plants.

Tufted Pansies, as they have been well called, are coming to the front, and for bedding purposes they are invaluable, and I know of nothing that can surpass the effect they produce when judiciously planted, and few flowers are more adoptable. Large two or three year old clumps of Violas are the most beautiful objects one can have in a garden in May and June, a period when the flowers are most numerously produced.

Amongst sterling new kinds put in commerce this year, may be mentioned Duchess of Fife (Baxter), light primrose, distinctly edged with blue, a strong grower and good habit, an improvement on Goldfinch; this novelty will be a leading flower in future years. Ada Adair (Baxter), clear shining rose, dark centre; very pleasing flower, and one of the



Fig. 35.—The hollyhock fungus on the leaf of the mallow.

best twelve. Delicata (Baxter), soft rosy lilac; quite a new shade, a taking flower, and a very free grower. Crimson King (Baxter), rich crimson, primrose eye, white brows; a finely formed flower, and the best of this shade.

In the list of good but somewhat older kinds, we may name John Burns, rich dark velvety purple, heavily marbled with light peach, white brow, clear eye. Countess of Hopetoun, pure white, compact habit, free bloomer. Holyrood, dark blue, compact habit, extra fine. York and Lancaster, dark purple, beautifully striped with white, shaded with rose; very pretty. The Mearns, rich plum, upper petals edged with white; very attractive. Evelyn, dark blue, shaded white; very fine. Mrs. Baxter, dark purple, with pure white top petals, extra large flower, free habit; best of its class. Sovereign, golden-yellow, compact, immense bloomer. Picturata, mauve; very fine. Neptune, purple, with light back petals. Royalty, bright yellow; first-rate. Columbine, white, margined with rosy-lilac; extra fine. Lucy Ashton, light centre, edged all round with a broad band of rosy-pink, after the style of Columbine, but retains its colour much better in hot weather; a vigorous grower. Gipsy Queen, very light lilac, heavily streaked with violet; a novel and pretty flower. Hugh Ainslie, top petals bluish-mauve, shading to white, under petals rich indigo-purple, clear yellow eye, surmounted with white brows; a large showy flower, and a free bloomer. Mrs. H. Bellamy, upper petals pale

lavender, under petals deep solid purple, fine clear yellow eye, with white brows; large, circular, and smooth as a show Pansy; a free grower, with a good habit; novel and quite distinct. Marchioness of Tweedale, pure waxy white, fine habit, first-rate bedder. *Turnham Green.*

Trees and Shrubs.

NANDINA DOMESTICA.

We are so accustomed to see this shrub grown in the greenhouse, that it was a surprise to see it in full flower in the open air in Canon Ellacombe's garden. The foliage is very elegantly and ternately compounded; when young, it is of a beautiful shade of pink. The white flowers are very numerous, and borne in stiff terminal, erect, much branched, pyramidal panicles, resembling candelabra. The individual flowers are about a quarter of an inch long, whitish, ovate-pointed, and made up of several series of spirally disposed overlapping white scales, tipped with pink, and surrounding the white petals.

Clematis æthusifolia.

A hardy Clematis, admirably fitted for wilderness walks, or for covering tree stumps, &c. The leaves are bi or tripinnately divided, the ultimate segments broad, rounded. The flowers are about three-quarters of an inch long, white, and bell-shaped. It is a native of Northern China (Hort. Ellacombe).

Spiræa Bumalda.

Mr. Anthony Waterer showed at the Chiswick Carnation show, a spray of a very richly-coloured crimson variety obtained as a sport from the ordinary kind, which has pink flowers. The sport has been propagated, and the intensity of the colour is found to be persistent, so that the new comer is a distinct improvement on the parent form. It is probably a form of the Japanese S. callosa.

Smilax laurifolia.

It is singular that this fine climber is not more often planted. Its bold, leathery, bright green leaves, with their curious tendrils, are very effective, and form a pleasing contrast to the dark-leaved Ivies. At Bitton it grows very freely, and even in less favoured spots it will survive all but the worst winters.

Diospyros Kaki.

This tree is worth growing even for the foliage only. The leaves are bold, broadly lance-shaped, unequal near the base, cheerful green above, paler, and obliquely pilose above. The tree is hardy, and in Canon Ellacombe's garden it even bears fruit out-of-doors.

Idesia polycarpa.

The foliage of this tree is strikingly handsome, the blades of the leaf being about 7 or 8 inches long by 6 to 7 inches in width, cordate, ovate, acuminate, slightly dentate, with five radiating nerves, the central one being the largest, deep green above, glaucous beneath. The leaf-stalks are nearly as long as the blades, of a reddish colour, and provided at irregular intervals with small sessile glands as in some Passion-flowers, one pair being placed at the very top of the stalk next to the blade. The vascular bundles of the petiole form a complete ring. The tree is a native of Japan, and belongs to the Bixineæ, a family allied to the Passion-flowers. We saw a good specimen of the tree recently in the garden of Canon Ellacombe at Bitton.

Rhus Cotinus.

This lovely shrub is amongst the most beautiful objects at the present time in flower. Its peculiar-looking panicles of flower, and the freedom with which these are borne, tends to make it more than usually interesting. After the flowers are gone, the foliage is singularly ornamental, and can be used with good and telling effect for table-decoration; in fact, in a sunny autumn the foliage has assumed such a brightness as to make visitors exclaim, when seeing the plant from a distance, "What beautiful scarlet flower have you there?" It is very easy to cultivate, and not very particular about situation and soil. We have several in different positions, in northern, eastern, and western aspects, and all do well. *W. A. Cook, Compton Bassett.*

Tamarix germanica.

Certainly this is a plant deserving extended cultivation, especially where it is desirable to relieve the banks of some lake, as the Tamarisk grows freely, and flowers profusely, in such situations, and its semi-weeping character renders it specially suitable for such a purpose. Sandy loam, to which is added a small portion of peat, will be found suitable for growing this shrub to perfection, provided it has enough water at the roots. When the bushes reach 6 or 7 feet high, and the branches are thickly clothed with their somewhat peculiar flowers, one only needs to see the plant once to be induced to cultivate it. *E. M.*

Actinidia polygama.

A very distinct-looking, hardy, shrubby climber, with leathery glabrous leaves 4—5 inches long by 3—4 inches broad, dark green above, paler beneath, oblong, shortly acuminate, finely saw-toothed. The leaf-stalks, which are about one-fourth the length of the blade, are of bright pink colour, and attached to the branch by a cushion-like swelling, which gives a very characteristic appearance to the plant. The lateral buds are at first completely concealed within the spongy cushion just referred to.

Vegetables.

NEAPOLITAN LETTUCE.

This has been a good season for Lettuces. The Neapolitan is the cream of Lettuce, and it being large, crisp, and sweet, it is greatly appreciated here. *W. A. Cook.*

Lamb's Lettuce.

This hardy salad plant is not grown so much as it deserves to be for winter and early spring use. From the middle to the 20th of August is a good time to sow the seed in drills about one inch deep and twelve inches apart. A warm border affords a suitable situation for it, and a light is preferable to a heavy soil. When the plants are a few inches high, thin them out to three inches apart, and afterwards draw every other plant before they touch each other. The thinnings may be transplanted if required. *H. W. Ward.*

Fruit Register.

PEAR CITRON DES CARMES.

Mr. Ward mentions this Pear in a recent number, p. 168. I can agree with all he says respecting it till he comes to the flavour, for we have tried this Pear in several different ways to get flavour, but have failed to do so; it is simply like eating a pithy Turnip. If it were a good flavoured Pear it would prove very valuable, insomuch as it is a great and constant bearer, and ripens about the time of Doyenné d'Été (middle of July on walls). We have two beautiful trees on an east wall, but have determined to root them out this season, on account of their poor qualities. *W. A. Cook, Compton Bassett, Wilts.*

Raspberry Superlative.

This is in every sense of the word a splendid Raspberry, it has an excellent constitution, and produces magnificent fruits of large size and good flavour; and another strong recommendation in its favour is, that it only grows some 3½ feet, and does not require stakes, consequently it is not so exposed to high winds as many other varieties, and is well adapted for planting in high gardens. A word to protest against the practice of digging between Raspberries: give a good dressing of manure, decayed leaves, or any thing which will nourish the roots, and mulch them during hot weather, but never dig, as the plant roots principally on the surface, where they ought to be encouraged and protected. *J. Rust, Eridge Castle, Tunbridge Wells.*

Cherry Castle Hill Seedling.

At the exhibition of the Taunton Horticultural Society on the 14th inst., Mr. R. Nicholas, gr. to Earl Fortescue, South Molton, took the 1st prize in the class for a dish of Cherries with this new variety, which originated as a chance seedling, it is thought, from the Black Circassian, at Castle Hill. Some very fine Morellos were shown in this class, but for size, colour, and finish, they could not compare with the new variety; and while partaking of the colour of the Morello, is more heart-shaped, sweet, and of an exceedingly agreeable flavour. It promises to make a very fine and valuable late Cherry. It would be well if Mr. Nicholas could forward a dish of it for the opinion of the Fruit Committee of the Royal Horticultural Society at its next meeting on the 27th inst. *R. D.*

Plants and Their Culture.

Chrysanthemums must now receive abundant supplies of water, and get daily attention in the way of tying and disbudding. In a short time the early potted strong plants will take liquid manure or some other good fertiliser, but this should not be given until the buds are set, as it tends to prevent their formation if given too early. The latest plants should be staked before the shoots get too far advanced; the earlier ones will require looping up, and should be securely tied. The early blooming varieties may have good liquid manure at every other watering, and the buds well thinned if not already done. These plants will take more feeding than many others, and should always have abundance of moisture, or they will lose their bottom leaves. Syringing three or four times daily must be attended to if large healthy specimens are desired.

Campanulas.—Now is the time to attend to the stock for next season's supply of bloom. The best for early blooming is C. calycanthema in variety, which may be sown now, but is best sown earlier in the year; these with C. pyramidalis will form a succession, the latter kind blooming through July and August and even later from seed sown in the previous summer. They are quite hardy, but will not exist in a wet cold place through the winter, although they will take an unlimited supply of water when in growth. We winter our plants in a cold frame and make two sowings, one in April the other in May, thus getting a succession of plants for blooming through May, June, and up to September. Another species which we grow in quantity for the front of stages is C. isophylla; it is a charming little plant for the purpose, and is easily propagated by division of the root. Give frame protection in the winter, keeping rather dry till they commence to grow. It is of dwarf trailing habit.

Celosias.—A pinch of seed sown in July or early in August, and finally potted into 6-inch pots for autumn bloom, is most useful. I have often sown as late as the third week in August, and found the plants serviceable for autumn work. They should be grown without a check, and not in too much heat. Get the pots full of roots, and then feed liberally, giving a light place, in order to get dwarf plants. I would advise those who possess a good strain to at once sow a few seeds from the plants which have just gone over. Carefully water, omitting the feeding as soon as the plants are all well advanced into bloom. *G. Wythes, Syon House, Brentford.*

The Orchid Houses.

The East Indian House.—Cleanliness and order should now characterise this house; dirty plants, pots, or stages are not only offensive to the eye, but very injurious. The autumn is approaching, and care must be taken not to overload the atmosphere with moisture. Extra care will this year be neces-

sary, as the plants have been more or less compelled to make their growth from fire-heat. Want of sunlight will have made the Phalænopsis very tender, consequently too much moisture in the house will be apt to cause rotting; should that have already started, cutting off the leaf-growth some little distance behind the affected part is the only remedy. The application of flowers-of-sulphur or powdered charcoal is sometimes advised, but I do not like these methods. If the cut is clean, and the atmosphere fresh and buoyant, the surface will quickly callus over. In giving more air, the temperature must on no account be allowed to run down rapidly; 1° or 2° fall will not do any harm, but sharp falls of temperature and a close house are certain forerunners of both "spot and rot" in Orchids. The temperature may now be let down to 72° at night.

Cattleya House.—Lælia purpurata will now be in good condition for repotting, and should be attended to at the first opportunity; clean pots and potsherds, and the very best fibrous peat, are all that is really necessary. I do not like to mix charcoal with the potting compost, but I am a great advocate for the use of fresh clean potsherds as a hard substance for the roots to fix upon. The potsherd dries up almost as quickly as the peat, but charcoal remains wet; roots coming in contact with it do well for some time, but soon lose vigour, and eventually rot. The temperature of this house should be 68° at night, and if the sun raises the thermometer inside to more than 76°, air should be admitted not only from top and bottom ventilators, but from the side lights and the open door. *A. G. Catt, Parkfield Gardens, Hallow.*

The Flower Garden.

The propagation of summer bedding-plants must now be proceeded with. It is not necessary to propagate large quantities of Coleus, Iresine, Verbenas, Alyssums, Mesembryanthemums, Petunias, Lobelias, Alternantheras, Ageratums, Heliotropes, &c., as it is best to do the larger portion in the spring. A few pots or pans of each for stock is all that is required at present. Cuttings should be taken early, so that they may be well established before the winter.

Place in a frame, with a slight bottom-heat, and gradually harden off when rooted. The soil best adapted for them is a sandy loam, mixed with leaf-mould and silver-sand in equal parts, and give a good drainage.

Pelargoniums are generally required in large quantities; some cultivators prefer rooting them in pots, but we use boxes, as previously recommended, and with the best of results. One layer of crocks, with some good rough leaf-mould on the top, is quite sufficient drainage. The cuttings need no protection; water well once after inserting them in the boxes, and place in an exposed situation. Variegated plants of all kinds are more tender than others, therefore cuttings of the variegated sections should be taken first, and, as autumn-struck plants of these are the best for summer bedding, a large lot should be put in.

As the days shorten, it will be found that the foliage of many bedding plants will decay, and must be removed frequently, as well as dead flowers.

Herbaceous borders should have the dead flower-spikes removed as their flowers fade, but no foliage should be removed, as that tends to weaken the plants. *D. C. Powell, Powderham Castle, near Exeter.*

Fruits Under Glass.

Pines.—Owing to the heat and moisture always maintained in Pine stoves, there is great tax on the woodwork, which fact adds considerably to the cost of maintenance in the way of painting. This work is best if done in sections yearly, completing the whole once in every two, or at most three, years; two coats inside and three outside at each time will be found to preserve the structure in good condition for many years. It is essential that the houses be emptied, and the woodwork thoroughly dried previous to painting, and the present is the most convenient time of year, as the plants may be temporarily accommodated in some vacant house. The hot-water apparatus should be overhauled, and all necessary repairs done at once, so as to avoid a break-down in winter time during the forcing period.

The Pines should now be looked over and got into their winter quarters, as little as possible of the potting being done after September, as the roots should reach the sides of the pots before very dark days are upon us. This refers more especially to the young stock, and the Queen section to be started in February. Selected plants of the latter should now be arranged by themselves in a light airy pit, for special treatment. A strong bottom-heat at this stage would be fatal, by causing them to throw up for fruit. Bottom-heat is best when derived from a well-worn bed, and without any additional new tan. A heat of 75° to 80° will be ample. Gradually reduce the atmospheric moisture, and avoid fire-heat whenever a night temperature of 70° can be maintained without it. As the days decrease in length the above figures may also slightly decrease, until the erect sharp-pointed central leaves denote that growth has nearly ceased. Clear guano-water may be given when water is actually required, but avoid extremes of all kinds, as any check causes a loss of healthy roots, and a corresponding deterioration in the quality of the fruit next spring.

Queens which throw up after this date seldom finish well, and those that are already up should be included with the general autumn fruiters of the Cayenne, Rothschild, and Jamaica sections. These plants having swelling fruits will require generous supplies of guano-water and plenty of atmospheric moisture, but little overhead syringing. Close early to economise sun-heat, and reduce the necessity of strong fire-heat. Plants having fruit on the point of colouring need not be returned to the beds, as they will finish well if stood on the kerb of the pit, and removed to a Grape or fruit-room till required, but without root-watering; or the fruit will keep four or five weeks if cut and suspended by the stalk, head downwards, thus enabling the stools to be reduced and returned to the sucker-pit for propagating purposes, having cut back all the old leaves. The tan-beds should now be turned over, and a small quantity of new tan added, sufficient to revive a gentle fermentation, not exceeding 85°. A sprinkling of new tan may be strewn over the surface of the beds for appearance sake.

Successional plants in all stages, and in every compartment, should have a moist, brisk bottom-heat, that will favour liberal ventilation by day, and a genial temperature through the night, without the aid of much fire. A slight shade for a few hours may be necessary, but it is better to get the foliage a bit bronzed by sun, than soft and drawn from shade and inefficient ventilation. Re-arrange the plants in the pits, remembering that they will probably have to occupy these positions for months, and their growth should not be cramped.

Suckers that have reached the sides of their pots may be shifted on into good open compost, having rather a large proportion of grit, potting as firmly as possible. Remove all good-sized suckers from stools, and put into 7-inch pots; this may be done all the year round, if a ripe Pine is to be expected at all times from a limited collection, but there should always be a goodly number of hard brown-at-the-base suckers put in during August, as these can always be depended upon to furnish good fruit, which, according to requirements, may either be forced or retarded at will. *W. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

Mulberries, where grown in cropped orchards or on open quarters in the garden, must have attention; as the fruit is now ripening, give plenty of litter, or if possible, lay some turf down. The best plan is to lay turf under all the trees, and keep it mowed regularly, and then the fruit is easily picked up.

Strawberries.—All planting should now be brought to a close, that is, if fruit is expected in quantities next season. There are various ways of planting Strawberries, but one thing should be borne in mind, that is a good depth of soil and plenty of manure in it, and the plants early planted, so as to admit of complete establishment before frost sets in. Forcing plants will be well rooted.

Raspberries.—If the old fruiting canes have not been removed from quarters and trellises where the fruits have been gathered, this should be attended to, as it lets in air, and gives full light to the young canes. I cannot advise them too strongly, as to the advantages of a permanent wire trellis, or even stakes driven in at intervals along the rows, with tarred twine tightly drawn along, so that the canes can be tied out singly. Do not at present stop them, and take care not to break off the leaves. When thinning and tying of the canes is completed, all trimmings, weeds, &c, should be cleared away; also the mulching, if it consisted of straw. But if half-decayed manure, leaves, &c., were employed, it may be turned under the surface of the soil; but care should be taken not to disturb the roots, and not more than 3 inches of the soil should be turned up.

Apricots.—The ripening of these fruits seem to be most irregular this season, the most exposed side ripens, and the other, although quite clear of foliage, is quite hard. This is the case with early round more particularly. The fruit should be picked and placed in a fruit room for several days before being sent in for dessert, so as to allow them to ripen. To lengthen the supply, the trees should be looked over, and while some are exposed, the others can be kept well shaded with foliage for a few days longer. Keep all laterals pinched-in, and as the trees get clear of fruit, reduce the old fruiting spurs, then there will be little winter pruning. The moist season has favoured growth, and if pains be now taken to expose every shoot to full sunlight, we may hope for a good Apricot season next year. Keep the soil about the trees mulched to prevent cracking, and any trees that are extra vigorous may be root-pruned at once. *A. Evans, Lythe Hill, Haslemere.*

The Kitchen Garden.

Celery.—So far the season has been exceptionally favourable to the growth of Celery, and the plants are strong, clean, and free from maggot. The earliest crop will now need blanching, and it is usually six weeks before the plants are quite fit for use. For early blanched heads, some people tie them up with brown paper, while others use drain pipes, but for all purposes the soil system is undoubtedly the best. The trenches should be thoroughly deluged with manure water a day or so before putting in the soil, and all the side suckers and the small leaves removed; and to prevent attacks of slugs, &c., give the plants about the base a good dusting of lime and soot, but that should not be used too freely, or it may give a bitter flavour to the hearts. The earthing should be done when the plants are quite dry, and take care that no crumbs of earth fall in amongst the leaves. The soil along the sides of the trenches should be chopped down a little at a time, and made very fine and pressed down pretty firmly. Keep the leaves straight and close together, either by a tie or the hand. Finish off the surface with a slope down from the plants, so that if heavy rains should come they will not wash the soil into the hearts.

French Beans.—From the present time onwards, these should be sown in pots or frames; a good bed of Ne plus Ultra or Osborne if sown now where they can be helped along with a little glass will yield pods in succession to the latest sowing outside. If pots are to be used they should be clean and well drained, filling them three-parts full with moderately heavy soil and spent Mushroom dung; an 8-inch pot is a very serviceable size for this crop, and five to seven Beans can be put into each, reducing the number of plants to three or four when they are 3 inches high. If in beds, the Beans should have plenty of room for growing, and for the present it would be better to grow them on in as cool a temperature as possible, so as to encourage a sturdy growth. Keep the soil moist, and syringe well overhead to keep thrips and red-spider in check. *H. Markham, Mereworth Castle, Maidstone.*

Disease of Potatos and Pelargoniums.—MM. Prillieux and Delacroix have described a new disease of the Potato and Pelargonium prevalent in France, and they have proved that the mischief is caused by Bacteria, which abound in the cellular tissues of the parts attacked. By inoculation, the fact was made still more apparent, as the disease could be communicated from the Pelargonium to the Potato, and *vice versâ*. The discoverers of this new Bacterium have named it Bacillus caulivoreus. It causes the stem [and foliage?] to become shrivelled and brown. *Comptes Rendus*, cxi., p. 208.

EDITORIAL NOTICES.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

NEWSPAPERS. — *Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, Aug. 26 — Royal Horticultural Society: Committees and Lecture.

SHOWS.

TUESDAY, Aug. 26—Calne.

WEDNESDAY Aug. 27 — Reading. Harpenden. Sherborne.

FRIDAY, Aug. 29 — Dunfermline and West of Fife (two days). Montrose (two days). Sandy.

SATURDAY, Aug. 30—Falkirk.

SALES.

MONDAY, Aug. 25 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

WEDNESDAY, Aug. 27—Dutch Bulbs, at Stevens' Rooms.

THURSDAY, Aug. 28 — Dutch Bulbs, and 15,000 Lilium Harrisii, at Protheroe & Morris' Rooms.

FRIDAY, Aug. 29 — Imported and Established Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Aug. 30—Dutch Bulbs, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—60°.8.

Fertilisation without Pollen.

In an article on the fertilisation of Ficus Roxburghii, published by Dr. CUNNINGHAM, as an appendix to Dr. KING's Monograph of the Indian species of Ficus in the *Annals of the Royal Botanic Gardens, Calcutta*, some highly curious results are arrived at. It is shown, in fact, that both the male flowers and the female flowers are developed, in consequence of the irritation set up by the punctures of a gall-insect, and that embryo plants can be produced by a process of budding without the intervention either of sperm-cell (pollen), or of germ-cell (oosphere).

It may be well to explain that the receptacles of Figs consist of hollow flask-shaped or spheroidal bodies, the cavities of which are bounded by fleshy walls, save at the top, where the mouth of the cavity is covered over by masses of appressed and overlapping bracts or scales. In Ficus Roxburghii, and many other species, the arrangement of these bracts is such as practically to convert the interior of the receptacle into a closed cavity. In Ficus Roxburghii species two distinct kinds of receptacles are to be met with, each kind being confined to particular trees. In one of these two forms of flowers are present, viz.: — (α), true male flowers situate in the neighbourhood of the orifice, and capable of producing pollen; and (β), modified female or gall-flowers, which never produce seed, but within the ovaries of which, in very many cases, the ova of certain species of insects are deposited and undergo evolution. In the second kind of receptacles no male flowers are present, and the floral surface of the cavity is occupied by true female flowers, which never contain the ova or embryos of insects, but which are capable of producing fertile seeds.

The perfect evolution of both male and true female flowers in F. Roxburghii, and probably in other species also, is dependent on the access of the Fig insects to the interior of the receptacular cavity. Should access fail to occur, both forms of flower abort; in the one case without the formation of pollen, in the other without the development of seeds, so that the access of insects is as necessary for the perfect evolution of the normal male and female flowers as it is for that of the modified female or gall-flowers, with their contained ova and insect embryos.

In other words, the development of the embryo in the female receptacles is connected with the access of insects to the cavity of the receptacle, but the pollen is not necessarily introduced in the same way. A single insect, or a pair of them, is sufficient for the development of 10,000 to 12,000 embryos, while the obstacles to the entry even of a single pollen-tube are such that it is almost inconceivable that pollen should be introduced in sufficient quantities, and there is, indeed, no evidence to show that any introduction of pollen takes place at all.

The occurrence of ordinary pollination being thus impossible, how then is the embryo formed? The answer is, that the embryo in this plant arises as an outgrowth of the cellular tissue of the body of the ovule (nucellus), outside the embryo sac, and not as the result of any development within it, such as happens after ordinary pollination.

It appears to be impossible for the male flowers in this Fig to come to perfection without the access of insects to the gall receptacle, and also equally impossible for the embryos to be developed in the female ones without insect agency. The insects set up great irritation, and consequent overgrowth (hypertrophy), so that the maturation of the male flowers is a result of overgrowth of the receptacle caused by the irritation of insects, and the production of the female flowers is due to similar causes.

National Co-operative Association.

WHAT must fairly be regarded as the champion Metropolitan exhibition of vegetables and other garden-produce for the year was that of the National Co-operative Association, held in connection with the Co-operative Annual Festival, at the Crystal Palace, on the 16th inst. The schedule of the show comprised some 250 classes, suited for all sorts of exhibitors associated with co-operative work, and formed a very wide representation. In some classes the entries reached from fifty to sixty, so that the labours of the judges were necessarily heavy and protracted. It was not so much that quality ruled exceptionally high—that was not the case. We have often met with better average quality at provincial flower shows — cottager's produce especially—but exhibitions of moderate quality are often more difficult to judge because that average dominates. In connection with the show, it is doubtful whether it represents a *bonâ fide* effort to promote the valuable principle of co-operation in horticulture, especially in the seed trade, or whether it represents a gigantic advertisement of the Association for purely profit-earning purposes. The motto of the Association is "One and All"—the "one" being the Association evidently, because the rules which govern the show specify that the exhibits shall be grown from Association seeds, whilst the "all" of course are the purchasers. Naturally a show held under such restricted conditions, comes into a very diverse category from shows held by non-trading bodies, which are open to all. It is impossible to leave this part of the subject without offering a protest against the practice of the Association in designating commonly-known and well-recognised garden vegetables with the prefix "One and All." Why, for instance, should Duke of Albany Pea be termed "One and All" Exhibition Marrow? or the recognised Scarlet Intermediate Carrot be called "One and All" Intermediate? The same thing runs through the entire schedule, and is gravely misleading, and it is even open to question whether it is not contravening the Trade Marks Act thus to call fully recognised products by designations they have no right to, and which can only end in leading purchasers to believe that they are obtaining really new or distinct varieties. The Association would gain greatly in public esteem if it adopted the rule of calling everything by its recognised trade appellation. In a gigantic vegetable show, Potatos naturally looked large. In one class for four dishes, the best out of twenty-six lots were International, Chancellor, Sutton's Seedling, and Prime Minister; other good sorts were, London Hero, Abundance, Essex Challenge, and Satisfaction. In a class for nine coloured kidneys, forty-five lots being staged, Mr. Bresee, a fine red kidney, of excellent quality, was 1st, 2nd, and 4th, Edgecote Purple being 3rd. Mr. Bresee was by far the most exhibited in the class. With white kidneys, of which there were sixty-four lots, International was 1st, 2nd, and 4th, Snowdrop being 3rd. International formed three-fourths of the dishes staged. So much for the encouragement of superior varieties of Potatos. In single dishes of red rounds there were some sixty lots, Reading Russet being 1st, 2nd, and 4th, and Vicar of Laleham 3rd; hardly any other varieties being staged. In the class for white rounds, fifty-four dishes were shown, Satisfaction apparently being the best in all the prize dishes, but many of the other samples were rough. Carrots made a big show in several classes, and comprised Short Horn, Intermediate, and Long Red, some of the examples being excellent. Onions, too, made a great show; Ailsa Craig, or one other of the oval section, coming first in the autumn-sown class, and fair White Spanish in the spring-sown class. In these the competition was truly marvellous. There were fifty-four lots of six Beets; a rather coarse form, "One and All" blood-red, came 1st; and smaller, but capital Cheltenham Green-top, the best of all dark Beets, 2nd. Broad Beans were plentiful, but rusty; Runner and French Beans were excellent. The Champion in the former was not equal to good Ne Plus Ultra; and Canadian Wonder was the best in the latter. In Celery, Giant White was the best; and that excellent variety, Major Clarke, here dubbed "One and All" Scarlet, was the best coloured. Peas were plentiful, but somewhat lacked freshness. Duke of Albany and Statagem being the best. Marrows of all sorts, Cabbages, Lettuces, Cauliflowers, Tomatos, &c., were in plenty, and there were some collections in which one or two old stagers in vegetable exhibiting figured largely. A vast area was occupied by pot-plants and cut flowers, many very poor and uninteresting, but, according to the schedule, all grown from Association seeds, things which may have interest for the exhibitors, but little for ordinary gardeners. There was also some excellent fruit, and it was amusing to find the judges putting Saltmarsh's Queen Apple forward in kitchen varieties, and in dessert Apples also, Warner's King being in the one case 1st, and Mr. Gladstone the other. The show was visited during the day by a vast number of persons.

THE TULIP TREE.—Our illustration (fig. 36) shows a fine example of the so-called Tulip Tree—a tree which, in point of fact, is much more nearly related to the Magnolias than the Tulips. In any case, it is a noble tree, of massive proportions, inte-

resting for its peculiar shining green leaves, the tips of which are curiously two-lobed, as if the central point had been cut away, leaving a deep notch between the two side lobes. In autumn the rich green of the leaves is replaced by a glowing yellow tint. At the base of the leaf-stalk are two large oval stipules, which enclose the young bud curiously rolled up within them. The large flowers are bell-shaped, of a green colour, striped with red, and



Fig. 36.—Tulip tree in Kew Gardens. (see p. 218.)

from their beauty of form and singular appearance, always attract attention.

This superb tree attains a height of 70 to 100 feet, and we call attention to it now, not only as a splendid tree for the park or the pleasure-ground, but as one well suited for avenues and for growth in towns. Its glossy foliage enables it to resist the injurious effects of smoke and impure air as well as the Plane itself. If restriction—which, however, means mutilation—be necessary, the tree is good-natured enough to bear the knife well. There is an avenue of such clipped trees in one of the court-yards at Chatsworth. The tree is quite hardy, the young shoots even rarely suffering injury from frost. Like many other trees, it was at first grown in pots under glass, where, if its noble stature and grand proportions could never be attained to, at least its singular leaves could be admired.

The first tree of the kind recorded by Loudon as having flowered in this country was one at Parson's Green, near Fulham, and it is known to have been cultivated at Fulham by Bishop Compton in 1688; and Fairchild, whom we had occasion to mention a short time since, was one of the first to raise the tree from seed. In the North-eastern United States, it is valued as a timber tree under the name of Poplar, a name which is as wide of the mark as is that of Tulip tree. It is not very particular as to soil, but prefers a rich deep loam. Our illustration is from a tree at Kew. Other fine specimens exist at Syon and elsewhere. There is a variety on which the leaves show a golden variegation, which is very effective.

Reporters as Judges.—Our attention has been called to the schedule of the National Co-operative Flower Show, in which occurs the name of a gentleman so printed as to lead to the inference that he is a member of the staff of the *Gardeners' Chronicle*. We believe that this was done without the knowledge or sanction of the gentleman in question. We should not have alluded publicly to the matter were it not that we are desirous that it should be known to our readers in general, and to flower-show managers in particular, that, for obvious reasons, no member of the permanent staff of the *Gardeners' Chronicle* ever acts as a paid judge at any flower show. The list of judges above referred to is calculated to mislead in other ways; for instance, Mr. A. F. Barron and Mr. W. Coomber officiated in all probability in their private capacities, and not as officials of the Royal Horticultural and Royal Botanic Societies respectively. Mr. W. Goldring, again, is no longer connected with the Royal Gardens, Kew, and if he were so, he probably would act as a private individual and not as a member of the Kew staff.

Mr. J. F. Meston.—We regret to hear that this gentleman, who is well known as a landscape gardener and contractor, is in a state which causes the gravest anxiety to his friends.

The Linnean Society.—The last numbers of the *Journal* of the Society (Botanical section) contain the continuation of Messrs. Forbes and Hemsley's "Enumeration of Chinese Plants," among which, as we had several times occasion to notice, there are many of special horticultural interest. Mr. Rolfe's paper on "Catasetum" deals with the curious sexual forms of this remarkable genus, and Dr. Masters deals with the morphology of the Coniferæ as observed in great measure in living plants and cultivated specimens.

"Annals of the Royal Botanic Garden, Calcutta."—The second volume of this publication is devoted to a Monograph of the species of Artocarpus indigenous to British India, and to the enumeration and description of the species of Quercus and Castanopsis. Seventeen species of Artocarpus are fully described, with synonyms, localities, and bibliographical references. The Indian Oaks definitely known number no fewer than eighty-two species, together with several others less accurately determined. Q. reflexa has a cup like that of the Beech, while in Q. Beccariana the acorn is completely concealed in the cup. The species are arranged according to the plan adopted by Alphonse de Candolle, and each species is illustrated by a lithographic drawing. Such works are of the greatest service to working botanists, and Dr. King has well earned their hearty thanks for his patient labour and also accurate investigations.

Horticultural Meeting at Ghent.—Certificates of merit were awarded to the following plants: 1. To Lælia majalis, from Mexico, with an exceedingly beautiful flower of a pure and delicate colour, sent by M. le Marquis de Wavrin. 2. To Lilium auratum rubro-vittatum, a splendid flower of large size, with a long and most effective band of blood-red, from M. Bauman. 3. To Anthurium Leeraar De Beuckler, in the way of Rothschildianum, with a fine well-formed spathe, the ground colour of which is creamy-white, speckled with innumerable red dots, the under side of a very deep colour; altogether a good variety, and was shown by M. De Langhe-Vervaene, of St. Gilles, Brussels. 4. To Mina lobata, a re-introduction from Mexico, shown by M. Schmidt, of Ghent, an excellent climber with flowers arranged on one side only of the stem, some being yellowish-white, others bright yellow, and the terminal blossoms reddish-orange; the plant does well in the open air. 5. To Acineta Barkeri, Ldl., from Mexico, with a sturdy pendulous cluster of about fifteen flowers, which are yellow, but much speckled with brownish-

red; an excellent variety from M. Ed. Pynaert van Geert. 6. To Aërides crassifolium, a pretty and most delicately shaded variety from MM. Vervaet et Cie. 7. To Cattleya gigas, with four splendid flowers, the lip of each being remarkable for size and for exquisite colouring; also from MM. Vervaet. 8. To Cattleya Sanderiana, which has an exceedingly large lip, and which was sent by the same exhibitors. Honourable Mention was awarded to Miltonia Moreliana, introduced in 1846, and shown by M. van Imshoot, as was also Cattleya Eldorado, from Brazil; to a specimen of Odontoglossum cristatum of unusual size, shown by the last-named exhibitor; and to an unnamed Epidendrum from M. le Marquis de Wavrin; to Adiantum Weigandi, from M. Spae Vander Meulen (for good cultivation); to Cochliostema Jacobianum, from Ecuador, exhibited by the firm of Van Houtte; to Trichinium Manglesi, Lindl., from Australia, introduced about 1839, but nowadays rarely cultivated; to Adiantum Lambertianum, a plant new this year, from M. Ed. Pynaert Van Geert; and to Aërides odoratum, from MM. Vervaet et Cie.

Stachys Sieboldi.—Whatever name the newly introduced vegetable may ultimately receive at the hands of the gardeners and the public, it is authoritatively laid down by Mr. Hemsley in the *Journal of the Linnean Society*, vol. xxvi., No. 175, just issued, that its botanical name is S. Sieboldi, and that the names, S. tuberifera and S. affinis, are to be put on one side. Mr. Hemsley notes that it is known wild or cultivated in North China and Pekin. For the benefit of those who uphold the use of popular or vernacular names, we note that the Chinese name is Tsanyungtzu.

New South Wales.—Mr. Oscar Meyer, the New South Wales Commissioner at the International Mining Exhibition, London, has forwarded us a special edition of *The Year Book of Australia*, prepared from that portion devoted to "New South Wales," and containing a large amount of useful information concerning the colony, which is rapidly progressing in industrial and social prosperity. It contains an historical account of New South Wales, brought down to the latest date; an interesting description of the geographical and other features of the colony; a readable and instructive paper on the growth of its trade; another, no less interesting, on its mineral resources; and a copious account of its public buildings, &c. In addition, there is a mass of matter relative to the various Government Departments, a Gazetteer, and other essential features of a year book, including some account of the railways of the colony. The pages devoted to information for tourists shows the colony to abound in picturesque features, the scenery of the Blue Mountains being among the grandest known, while the National Park—one of the largest in the world—near Sydney, consists principally of virgin forest. The book contains a useful map.

Bananas and Melons in Assyria.—In the July number of the *Babylonian and Assyrian Record*, Dr. Bonavia attempts to show that the Assyrians partook of Bananas and Melons at their dessert. So far as the Melons are concerned, this does not seem at all unlikely; but as to the Banana, the case seems rather more doubtful. It may have been so, but the illustrations given from Botta's *Monuments de Ninive*, seem as much like bundles of Asparagus as Bananas. Surely the Assyrians did not make use of a Covent Garden bundling machine?

Are Pitcher-plants Carnivorous?—Of late years it has been assumed by botanists that the pitchers of Nepenthes acted in the same way that the stomach of an animal does when it comes in contact with food; that is to say, that a ferment was produced which effected the solution of the entrapped insects, and rendered its absorption possible. There were various reasons that rendered this probable, though by some, the fact was never accepted. The means of research have been greatly perfected of late years, thanks to M. Pasteur and his co-workers, and by availing himself of them, M. Raphael Dubois (*Comptes Rendus*, August 11), arrives at the conclusion that: 1. The liquid contained in the pitchers of Nepenthes contains no digestive juice comparable to pepsine, and that the Nepenthes are not carnivorous. 2. That the phenomena of disaggregation or mock-digestion observed by Sir Joseph Hooker were due to the action of micro-organisms [Bacteria], introduced from without, and not to a secretion from the plant. Of what use, therefore, are the pitchers? and what is the meaning of the fluid they contain?

Cacti.—If we may judge from some excellent articles, accompanied by numerous attractive illustrations, in the *American Garden*, these plants are coming into favour in America. The hotter sun and brighter skies of the States are more favourable to their culture than the conditions which rule here; nevertheless, there are few classes of plants better suited for culture in windows of sitting-rooms, or more adapted for cultivation by invalids, for whom outdoor work would be too exhausting, and the management of an ordinary greenhouse, still more of a stove, too dangerous.

Bigeneric Hybrids.—Dr. Celakovsky has recently described a hybrid between Anthemis Cotula and Matricaria inodora, and M. Geisenheyner mentions a similar cross between Anthemis tinctoria and Matricaria inodora.

Bulbs for the Parks.—We learn that Messrs. J. Carter & Co., High Holborn, London, have again had the entire order for bulbs to be planted in the London Royal Parks, and also the parks and gardens under the control of the London County Council.

Agricultural Returns.—We have received from the Board of Agriculture a summary of the agricultural returns for the present year. The estimated acreage under various crops is:—Wheat, 2,386,336, or a decrease of 63,018 (2·6 per cent. as compared with 1889); Barley, 2,111,178, a decrease of 10,352 (or 0·5 per cent.); Oats, 2,902,998, or an increase of 14,294 (or 0·5 per cent.); Potatos, 529,661, a decrease of 49,561 (or 8·6 per cent.); Hops, 54,555, a decrease of 3,169 (or 5·5 per cent.) Thus Oats alone show an increased acreage.

Potato Disease.—It looks as if half a century would elapse ere Potato-growers will think it worth their while to adopt any measures for the palliation of the Potato disease, but they might at least avoid propagating it as they do. They might collect and destroy the rotting haulm, instead of allowing the spores to be diffused wholesale; they might avoid giving the diseased tubers to the pigs and horses; they might remember that the manure-heap is about the best possible place whereon to grow the fungus; they might reflect that diseased Potato haulm is not the best packing with which to send the tubers to market; they might—but perhaps they do not see as we do the rotting haulms cast into the streets in the vicinity of Covent Garden, to be swept up with the manure. Should famine occur, as is only too probable in some parts of the sister island, surely those, on the one hand, who have not done their best to show how the evil may be combated, and, on the other hand, those who have not even tried to avail themselves of the resources at their command, and worst of all those who by their carelessness and negligence, allow the disease to be propagated broadcast, will have some smitings of conscience.

The Consumption of Figs in Northern Italy.—The British Consul at Brindisi states that dried Figs have become one of the staple products of that part of Italy. The quality is inferior to the Smyrna Figs, and producers do not attend carefully to the packing of the fruit. The finer sorts are sent to North Italy and South Germany for eating purposes, the commoner sorts being exported principally to Trieste for Austrian distillery use, and Chicory and Coffee mixtures. It is stated as a fact, that during last Lent, in consequence of the Roman Catholics having had permission to eat meat, the demand for Figs was considerably reduced, the peasants of North Italy generally consuming large quantities during Lent.

Shrewsbury Floral Fête.—This exhibition, which was held on August 20 and 21, proved to be a great success, and we hope to be able to refer to it more fully in our next issue.

Hollyhocks.—Messrs. F. T. Smith & Co. have submitted to our notice a collection of blooms of their strain of Hollyhocks grown at the Martell Road Nurseries, West Dulwich, S.E. The recent heavy rains have not been beneficial by any means to this striking flower, which is rapidly rising in favour again, but some creditable blooms were included, the most distinct being Ariel, silvery blush, with a dark base to each petal; Brilliant, rosy-crimson, a pretty bloom with prominent guards; Black Prince, very dark black-crimson, large and solid; while Mikado is similar but brighter; General Gordon, a full flower, bright pink; Henry Irving, rosy purple; Mrs. Macdonald, delicate pink; Minerva is a fine sulphur-yellow, of moderate size; Vestal, a pure white; Premier is orange-buff; while in Queen Victoria we get a curious mixture of salmon with yellow and pink shading. Solidity and evenness of form were general characteristics.

English Arboricultural Society.—The members of this visited Skipton and neighbourhood, in the West Riding of Yorkshire, on Wednesday and Thursday, 13th and 14th inst. After being entertained at luncheon by Lord Hothfield, the party visited the castle and woods of Skipton, and afterwards drove to Ashton Hall, the seat of Sir Mathew Wilson. They also drove to Bolton Abbey, the estate of the Duke of Devonshire, see p. 209. At the business meeting, Mr. Thomas Taylor, Chipchase Castle, was re-appointed President of the Society.

Apple Cooling's Beauty of Bath.—A correspondent sends us this handsome early dessert Apple which was fit for eating on August 1, and he says that although other varieties are scarce with him, this has a full crop. It is pretty in appearance and good in flavour; we are sure it only has to become known to be a favourite with private as well as market growers.

"Arbour Day" in Australia.—A custom which has for some time past obtained in America is now becoming popular also in Australia. The *Queenslander* says that the Minister for Public Instruction has decided that one day in each year shall be spent by school-children in planting trees for ornament and shade in recreation-grounds, playing-fields, and other suitable open spaces. The planting is done under due superintendence and direction, and the day thus spent is known as "Arbour Day."

Substitutes for Flax and Hemp.—There is now established at Lambeth a technical school, where not only is weaving generally carried out on the most modern and scientific principles, but the leaves of many plants are tested to see if any suitable substitutes for Flax and Hemp can be discovered. Previous would-be discoverers, of whom we have so often heard, have failed through want of funds, time, patience, or some other necessary. At the factory we now speak of leaves of Agaves, Aloes, Phormium tenax, Palms, and Rheea, have been tried with good, but not, entirely satisfactory results. The processes necessary for the conversion of a fibrous leaf to a textile fabric are complex and tedious; among many others, let us cite those of removing the gum, combing, spinning, bleaching, dyeing, and weaving, which not only have to be performed, but done as well and speedily as possible. To find any plant with leaves which will lend themselves to all these processes, and which will be sufficiently cheap and productive,

is the aim and object of Mr. Taylor Burrows, the manager of the factory, who, with the help of his chemists and artisans, is prepared to test any fibrous plants submitted to him for that purpose, and to give any information concerning the botany of such specimens, and the best way of raising them in quantities, should such a proceeding prove worth while.

Gardening and Fruit-growing in Ireland.—Mr. W. H. Bullock Hall writes thus to the *Times*: "As the outcome of a tour of agricultural inspection in Ireland, in May, 1883, I published a pamphlet entitled *Gleanings in Ireland after the Land Acts*. In that publication I drew attention to the lamentable short-sightedness of the Irish in trusting for their main subsistence to so precarious a crop as the Potato. Subsequently, in September, 1888, I addressed the letter, of which I enclose a copy, to the Lord-Lieutenant of Ireland, urging the importance of teaching the principles of gardening and fruit-growing in connection with elementary schools in Ireland. As the Irish Government displayed no other concern in the matter than a limited amount of benevolent neutrality, I took the matter into my own hands. I proceeded to advertise in the Cork city and county journals, without distinction of politics, that any teacher within the eight poorest unions in the county could, on application to me by letter, stating that he had a suitable plot of ground, be furnished gratis with a dozen Apple trees, and a few other plants. In answer to this appeal, in the course of last autumn I received about 130 applications, of which I granted about 90, and have received many warm letters of thanks. As my offer was not confined to teachers, although I aimed at them mainly, station-masters, coast-guardsmen, sisters of mercy, constables, dispensary doctors, &c., were included in the recipients of my gifts. But not one single P.P. or C.C. has come forward to apply on behalf of their parishioners, or to give me any help or encouragement. That my work is absolutely unsectarian is proved by the lines on which I intend to work in future, which are these: Instead of making any more gifts, I offer to sell fruit trees at one-half of cost price, viz., about 6*d*. each, and to devote the proceeds of sale to local charities, in the proportion of three-fourths to Roman Catholics, and a fourth to Protestants."

Madresfield Court Cottagers' Show was held on August 12 in the grounds of Madresfield Court, Malvern. It is a peculiarly constituted exhibition, and was instituted by the Earl and Countess Beauchamp to "promote habits of industry, and encourage the better cultivation of flowers, fruit, and vegetables," and well it has succeeded. In addition to the money and other prizes awarded, each winner of a first prize receives in the following spring a collection of sixteen sorts of best seeds, which introduces what the cottager so often fails to obtain—good strains. One class is worthy of remark—a prize is given for the greatest number of wasps' nests, and this year one exhibitor produced ninety nests. There were upwards of 800 entries in seventy-five classes, and more than thirty extra prizes were awarded; 218 dishes of Potatos were staged. The show is maintained by the Earl, and is managed for him by Mr. W. Crump, his able gardener. Stove and greenhouse plants and fruit came from Madresfield Court Gardens.

THE PHLOX.

The propagation of these beautiful flowering plants was touched upon at p. 559 of last volume, and directions given for raising them from seeds and cuttings. If the work was begun early enough in the year, and the plants have been treated well, they come nicely into flower after plants which are a year older are past their best. By many gardeners, flowers of all kinds are supposed to do very well without manure, that being reserved for the Potatos and Cabbages; others, again, have not sufficient knowledge of the requirements of flowers, and manure being supposed to be injurious to some plants, none get any, the result being feeble growth and poor flowers. Phloxes are to be seen in herbaceous borders, where they have been growing in the same place year after year, until they have dwindled down into poor miserable looking things, and in dry weather leaves and flowers shrivel up almost before the half of the flowers are open. Not in this way are grown the handsome spikes of herbaceous plants one sees exhibited by the trade growers, who have to make the culture of their plants a paying concern. Messrs. Kelway, of Langport, are amongst the trade growers who produce large handsome spikes of these gross-feeding herbaceous plants.

When admiring their fine collection of Delphiniums, single and double Pæonies, &c., I asked Mr. Kelway how such fine flowers were obtained. His remark was short and practical: "It is all done by good cultivation of the ground, and plenty of cow-manure." I should be inclined to predict that the Langport soil is not a heavy clay, for stable-manure is best for that class of soil; and cow-manure, being wet and heavy, is best for that which is light. Deep working of the soil is necessary to induce the roots of deep-rooting plants to go downwards in search of moisture and support; and as an extra attraction, a good layer of manure about 18 inches below the surface, and another layer about 9 inches, have a good effect in that direction. The manure is a necessity if these plants are to be kept in vigorous growth for two years at least.

But most growers like to have a good bloom in the first year after planting, and this is not attainable unless the plants are struck from cuttings rooted on a warm bed in February or March, and potted off singly in a small pot when rooted, planting them out after a period of hardening off, which should be carefully done in cold frames, &c. Seedlings to do well should be treated similarly. In the first year, the plants are single stemmed, and may be set out at 1 foot apart in rows, or they may be grown in beds; the second year each plant may have three stems and flower spikes, the others being cut off, and each stem should be supported by a suitable stick, this allowing of better development. No good gardener would tie the spikes together to a single stick like a faggot, although it is frequently witnessed in gardens. The established plants are now in full bloom, and they should be freely watered, and if the ground over the roots be neatly covered with short decayed manure the moisture is retained better, and the fertilising properties of the mulch are carried to the roots. *J. Douglas.*

HOME CORRESPONDENCE.

Roscoea purpurea.—You ask, in your last issue, who it was who ventured first to plant out this very tropical-looking plant. I am not quite sure, from the illustration, whether the plant you figure is the Roscoea purpurea of Royle (*Ill. Him. Bot.*, plate 89, fig. 3), from the North-west Himalayas, which has been in cultivation for many years, or the form of it which I introduced from Sikkim in 1881, and which I have distributed under the name of R. sikkimensis, Hort. Elwes, as Mr. C. B. Clarke told me it had no name other than R. purpurea. I do not know whether the plant is botanically distinct enough to be separated by the flowers alone, but the root and habit are certainly very different from the old form, and the flowers much more numerous. I have usually grown it in a cold frame, and though it exists with me out-of-doors during such a winter as the last, I do not think it would stand a severe winter in most parts of England. It does very well as a pot plant in the greenhouse, and seeds freely. Mr. Thompson, of Ipswich, to whom I sent seed, raised it, and can, no doubt, still supply plants. In Sikkim it grows in the forest at 6000 to 9000 feet elevation, usually as an epiphyte, in the mossy forks of large trees, and the roots have thus assumed a form different from those of R. purpurea, which grows, I believe, on the ground, and has larger, more tuberous roots, and a thicker stem. It likes shade and plenty of moisture during the growing season from June to October, when it dies down, and may be kept pretty dry through the winter. There is another species of Roscoea, figured by Royle, R. alpina, which would probably be much hardier than this, as I found it, or a species very nearly allied to it, in Sikkim, at 10,000 to 11,000 feet, growing in short turf, where the snow lies for two or three months in winter. I did not succeed, however, in introducing this. Growing on the same mountain (Sundukpho) is a splendid herbaceous plant, Gentiana stylophora, which I am very anxious to introduce, as it is both from a botanical and horticultural point of view, a most distinct, striking, and beautiful species, having large yellow flowers as big as a teacup. Any one making the very favourite and beautiful excursion from Darjeeling to Sundukpho in September, when the seed is ripe, should look out for it, and send it to me, or to Herr Max Leichtlin, of Baden, who wants it badly. *H. J. Elwes, Preston, Cirencester.*

Large mushrooms.—I have this day gathered in my cellar, two mushrooms of extraordinary size, and of spontaneous growth, no spawn being set. The larger measured 8¼ inches in diameter, the stem was 11 inches long, and the weight just under 14 oz. The second one measured 6½ inches in diameter, the stem being 9 inches long, and the weight 10 oz. We cooked them as soon as gathered, and the flavour was delicious. I enclose the stems for your inspection. *J. Burman Roseveor, Crouch Hill.* [Not very remarkable; next time send the caps as well as the stem! Ed.]

Liatris.—Three species of this genus are characterised by having the numerous flower-heads arranged in long dense spikes, sometimes 1½ to 2 feet long. They are well adapted for bouquets, and last a long time in water. The Liatris makes a fine display in hardy borders, being very free growing and the plants cheap, and yet we seldom see them. Last week I saw a splendid bed of Liatris at the nursery of Ant. Roozen & Son, at Overveen, near Haarlem. In passing, I noted the beautiful L. pycnostachya, a real gem; it blooms the first season after planting. Flowers rosy-purple, in dense spikes 1 foot long; it begins to bloom at the top of the spike, going downwards progressively. Another good one which I noted was Liatris spicata, about 2 feet high; flowers violet-purple. The plant is very handsome and neat growing. Liatris elegans, with purplish flowers, is well named. Other species are L. macrostachya, dark rosy-crimson. L. novo-boracensis is a splendid thing; flowers dark rosy-red. L. odoratissima (the Carolina Vanille plant) has purplish flowers; L. scariosa, light purple; L. spicata, rosy-red; L. squarrosa (Blazing Star), purple. The Liatris likes a rich sandy loam, and may be successfully propagated by division in spring or by seed. The latter is preferable. *J. K. Budde, Haarlem.*

Barren Tuberoses.—These plants do not always produce flowers to the satisfaction of the gardener. They are generally potted in a light porous soil, and plunged in a pit or frame until the bulbs put forth roots, and are then removed into heat and kept there until they flower. These plants, like the Hyacinth, bloom but once well, and may then be thrown away, as good bulbs are imported in large quantities annually, and sold at a moderate price. The Pearl, an American variety of the Tuberose, is much the best for general work, it being of a dwarf habit, and very free to bloom. The reason why gardeners so often fail with this bulb is, I think, that they pot all the bulbs as soon as they come to hand, water them directly after potting, and place them in cold frames, with the idea of, by that means, keeping up a succession of bloom. This kind of treatment brings on a disease to which the Tuberose is liable, and which shows itself by the centre becoming black; or, in other words, the embryo flower-spike in the neck of bulb decays by reason of a low temperature and too much moisture. Bulbs of African growth can be had in September, and the Pearl in December. The bulbs should be potted in successional lots at intervals. My last lot of bulbs of 1889 was potted on June 26, having been kept in sand in a dry room. It is a good plan, when the bulbs are received, to pick out promiscuously a few, and split them longitudinally, so as to make sure that the sample is a sound one. This is very necessary in the case of tubers which have to be kept till very late before being potted. The Pearl is much the dwarfest grown variety, and throws up its flower-spikes to the height of about 2 feet, producing in pairs from twenty-six to thirty-six pure white, perfectly double, delightfully fragrant blooms, invaluable for bouquets, &c. The value of the

Tuberose is enhanced by the flowers expanding from the base of the spikes upwards in long succession. Bulbs may be potted firmly in rich loamy-soil, and plunged in bottom-heat of 75° to 80°, taking care the temperature of the pit does not fall below 60°, and water should not be afforded them until the foliage has begun to appear, and then water freely, and when too late for the pit they may be placed in a house, having a uniform high temperature and a moist atmosphere—by this method success is almost certain. *A. Evans, Lythe Hill.*

CANNAS.—These have been very popular for some years for subtropical gardening, and as dot plants in flower beds—purposes for which they have become almost indispensable. In addition to their beauty of foliage, the new sorts have magnificent flowers, constituting the plants the best of greenhouse subjects. The merit of originating these fine flowering varieties of Cannas belongs, I believe, to M. Cranze; and he has made such a splendid beginning, that we may look forward to still further improvements, as when hybridists begin to work with free-seeding quick-growing plants, they soon bring about most astonishing results, as witness what has been done with Pæonies, Delphiniums, Gladiolus, Pyrethrums, &c., among hardy subjects, and Begonias, Cinerarias, Gloxinias, and others that require a greenhouse or stove. The change in all these has been so great, that the old bear no comparison with the new varieties, which have now become embarrassing from their numbers. Canna seed requires a soaking of twenty-four hours in water before sowing it in heat, and it may be sown at any period of the year—the earlier the better, if results are looked for the same year. Plants from late-sown seed require to be kept growing in gentle heat during the winter—50° to 65°; but strong roots may be kept cool, and have their leaves cut off. *J. S.*

THE POTATO DISEASE.—Amidst the uncertainty which exists in relation to the probable effects of the disease in our Potato breadths this year, it is satisfactory to learn that we have at least one philosopher and friend who, happy in his own foresight can calmly survey the world and advise his perturbed brethren how to follow his example. Unhappily, some of us are not so easily quieted as is Mr. Earley. We have bigger breadths of Potatos, and cannot get them up in a day; and even if we could, we have no storage room vacant at present. And there are many other reasons why we may not, if we would, follow his example. So far as I can learn, it is the very early kinds which are worst diseased this year; and still further, so far as my knowledge of the action of the disease is concerned, I am morally sure that one-half of the tubers got up and stored early in August will be half rotten in a month. The rushing-up plan has been tried before in myriads of cases with terribly adverse results, and there is no reason to suppose that the product will be any better this season. When Potato crops extend to many tons, and thus, if got up early, have to be heaped or pitted, it is most obvious that the chances of disease in the tubers being extended after lifting is greater than when left in the ground. We want sensible practical suggestions, and they must be of a kind which will apply equally to the acre as to the rod or plot; to the ton as well as to the bushel. The suggestion that Magnum Bonums and other late kinds should be lifted long ere ripe or fit for food, is so absurd that I wonder it is made. The faith of the Potato-growing public in the disease-resisting nature of the Magnum, Chancellor, Reading Giant, Abundance, and other strong-growing strains, is so great that they would practically destroy all hopes and aspirations based upon that faith were they to follow the advice of a blind leader. *A. D.*

—— The ordinary form of the malady is more virulent in our part of the county than I had anticipated from the reports of the crops a fortnight ago. Requiring a piece of ground cropped with Potatos (about 8 rods) for planting it with Cauliflowers, and knowing that the tubers would not improve by being left any longer time in the ground, I had them taken up. The crop consisted of some of the leading varieties, and was excellent as regarded the size and quantity of the tubers of all the varieties; but alas! about 12 bushels were badly diseased. Reading Russet, Early Border, Schoolmaster, and Vicar of Laleham were those least affected, but Myatt's Prolific Ashleaf was diseased to such an extent that a dish of sound tubers was scarcely obtainable from several rows of plants. However, it is some satisfaction to be able to record the names of two varieties, which, grown in one row (half a row of each variety), by themselves, and some 40 yards distant from the others, had scarcely any disease among a heavy crop of large shapely tubers. These varieties are Carter's Holborn Perfection and Carter's Reliance. The former, in my opinion, the better of the two. It is a long cylindrical kidney, with a white skin, and slightly uneven surface. The latter is a flattish kidney, with very smooth white skin, and few, scarcely perceptible eyes. Both varieties are of good quality, and very floury when cooked. I never manure garden ground for the Potato crop, but plant that which has been liberally manured and trenched sixteen or seventeen months previously for spring Cabbages or other spring-growing crop; and it is to this practice that I had hitherto attributed the immunity of my Potato crop from disease. The plants do not make an over-luxuriant growth on this kind of land, and if the disease should appear, its attack is, as a rule, of a mild character. I attribute the present loss of crop to the frequent heavy rains and uniformly low temperature of July. Of course, whenever a spell of wet weather comes at about the end of July, the disease usually makes its appearance soon afterwards. *H. W. Ward, Longford Castle.*

TROPÆOLUM SPECIOSUM.—This plant has flowered remarkably well here this season; in fact, far better than we could ever get it to do before, and it looks likely to continue doing well until cut off by frost. It is planted on the south side of the mansion, near to a large plant of the Gloire de Dijon Rose, over which it rambles, and partially covers the naked stems of its supporter. I was not aware until this spring that its stems would survive the winter, and always regarded them as strictly herbaceous in character, but they survived last winter for a height of 6 feet or more without any protection whatever, and I think that the protection afforded by a mat would secure the like result again; at any rate, it is worth trying, as the plant gets to a flowering stage so much sooner in the spring if it has some old stems to start from, and its great beauty when in flower amply repays a little extra care in its cultivation. *W. H. Divers, Ketton Hall Gardens, Stamford.*

PEAS.—I can say with W. A. Cook, that there has been an exceptional crop of Peas this season; but mine have all run above their usual height. I do not sow them in trenches like W. A. Cook, as the ground had been trenched and well manured in the winter, and then sown in the ordinary way, and the plants have been wreathed from top to bottom. My earliest and best Pea among twenty varieties was William the First; Day's Sunrise was next, with a wonderful crop, and of splendid flavour. But I find none so good for mid-season or late work as Veitch's Perfection and the true Ne Plus Ultra; they quite surpass all the newer varieties that I have tried this season. I also find William Hurst the best of the dwarf varieties, which require no stakes. *J. T. Ecclestone, The Gardens, Canwell Hall, Tamworth.*

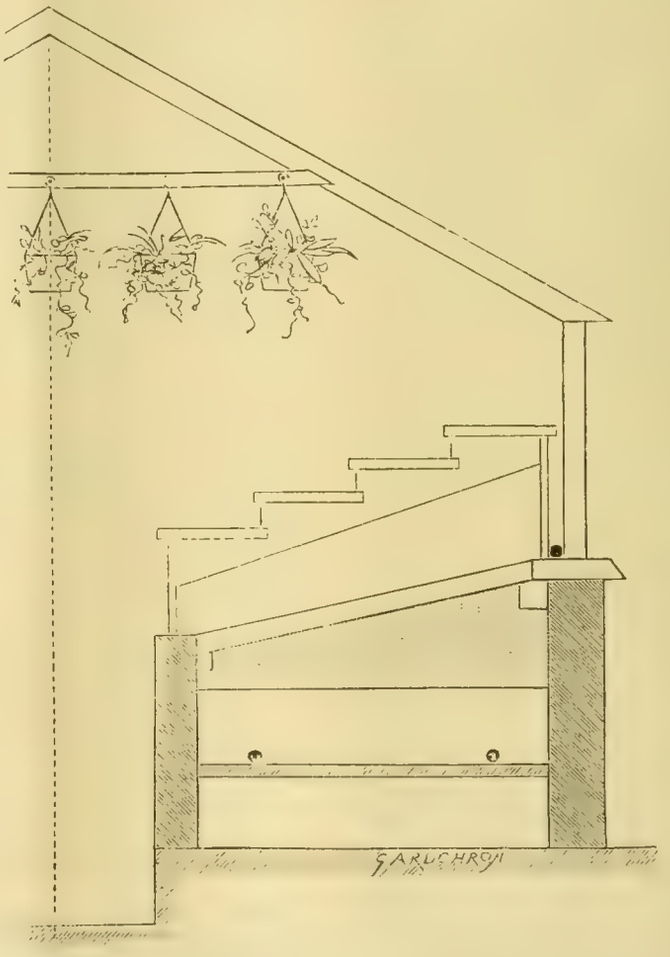


Fig. 37.—Propagating pit beneath moveable stage. (see p. 223.)

LARGE TOMATOS.—I see in your issue of the 16th a note of a large Tomato weighing 23 oz., grown by Mr. T. Hicks, near Manchester. I have in my possession a fruit of the old red variety weighing 29 oz., and perfectly sound. It was grown indoors, by Mr. F. Watts, of Old Town, St. Mary's, Isles of Scilly. The Tomato crops indoors have been remarkably good, but outdoors they are a complete failure. *J. C. Tonkin, Isles of Scilly.*

WEEDS.—The present season has certainly been an exceptionally bad one for weeds, as "Observer" remarks on p. 195, so many showery days have made hoeing of little use, and hand-pulling requires much extra labour, which is not always obtainable. We have had our share, but none have appeared on the gravel-walks until within the last fortnight. All the walks were watered with Smith's Weed Killer on

August 27, 1889, according to the printed instructions, except that we use it a trifle weaker than they advise. This has been a great boon to us here, and saves a deal of trouble during a busy period of the year, only one application being required for that period. That is all right for the walks, &c., but for land under cultivation, there seems to be no means of keeping down weeds except hoeing and hand weeding. *W. H. Divers, Ketton Hall Gardens, Stamford.*

FLOWERING OF PHORMIUM TENAX COLENSOI.—This variety of tenax has flowered here this year for the first time. The different varieties appear to be doing the same thing in many parts of the country this year. Our plant is growing in a small concrete pocket close to the edge of a small piece of water; the space in which its roots are confined is not more than 1 foot square, to which I attributed its flowering so well. During spells of hot, dry weather the plant is freely watered, as, owing to the concrete

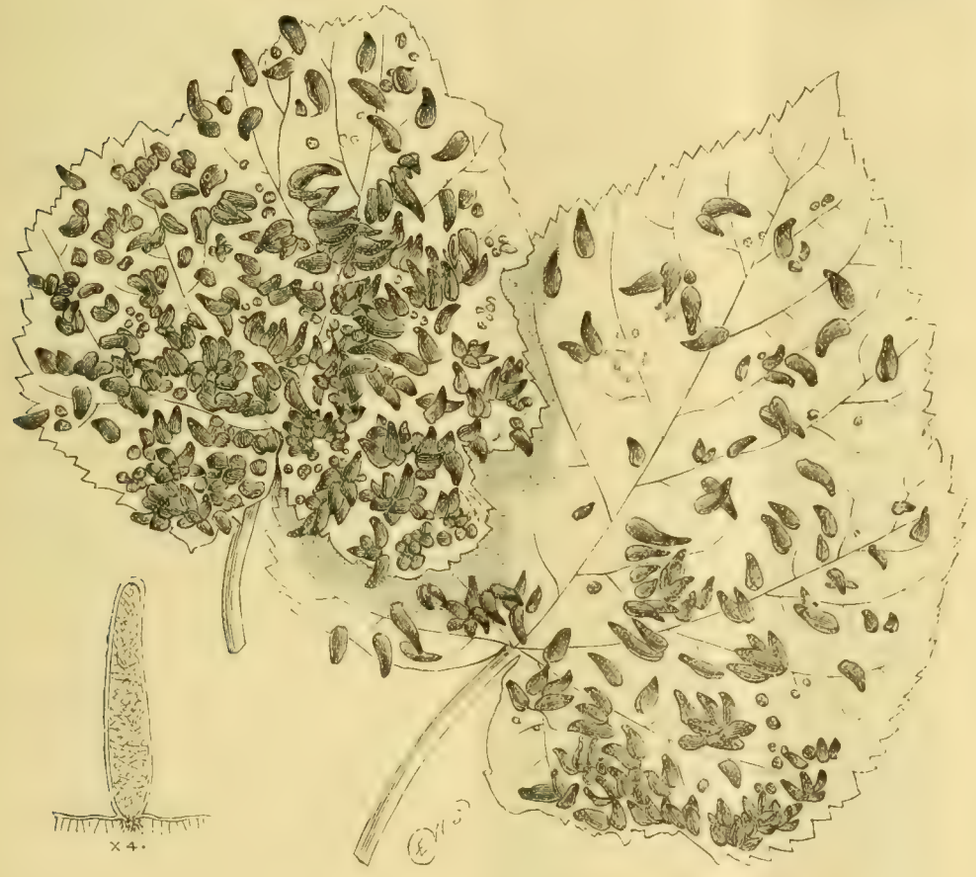


Fig. 38.—the nail-gall of the lime. (see p. 226.)

between the roots and the pond, it cannot derive any moisture from that source. The position is somewhat shaded by large Lime trees, which prevent the plant receiving much sunshine. It has been growing here four years, and is quite hardy, not having received any protection whatever. When the flower-spikes commenced to throw up, they grew very fast indeed, and reached a height of 12 feet; the pods are now forming, from which I hope to obtain seed. The variety Colensoi is distinct from tenax by its glaucous leaves, which are also wider than in the common form. *E. Molyneux.*

—— There is a plant of the above growing near the entrance of the nurseries, Five Oaks, St. Saviour's, bearing twenty-six spikes of bloom, some of which are 11 feet long. The leaves are from 5 to 10 feet long, and the diameter of the whole tuft 10 feet, measured across the bulk. It is a magnificent specimen. The colour of the flowers is a rich brown, with lighter coloured stamens. Whatever the merits of this plant may be, in a manufacturing sense, when dried, I can write most favourably of it in a green state, as the leaves may be stripped into bands of different breadths, according to requirement, the fibre being so strong that the smallest strip may be used for tying. Its hardiness is so satisfactorily proved, that I have no doubt it will be much more planted, both for ornament and use, than it has been hitherto. It is stronger and more lasting than matting or Raffia. *C. B. S., Jersey.*

LARGE PEACHES.—I think Mr. Mauchline, in *Gardeners' Chronicle*, August 9, p. 168, must be referring to my note in June 14th's issue, and not the 21st, as stated; if so, I must ask him to look at it again, when it will be seen I was referring to the variety Waterloo. My note was not intended altogether for size, except that I thought the earliness, size, and variety together worthy of notice. With reference to Mr. M.'s Peach, which weighed 11¼ oz., unless it was a Waterloo—which I should very much doubt—it is only a good average size for such sorts as Barrington, Nectarine Peach, or Lord Palmerston. Of such sorts we have grown here fruits weighing 16½ oz., and perhaps it would interest your correspondent to know that my friend, Mr. Goodwin, of Maidstone, grew one weighing 23 oz. I believe it was noted in the *Gardeners' Chronicle* at the time. [August 27, 1881. Ed.] *G. Woodward, Barham Court, Maidstone.*

JAMES CLARKE, OF CHRISTCHURCH.—It was with feelings of regret, though not of surprise, I learnt of the death of the raiser of the most famous of modern Potatos, Mr. Jas. Clarke. Notably he had long been in indifferent health, therefore his death, at the age of sixty-four, is not remarkable. I cannot now say how many years since it is that he raised Magnum Bonum, but I remember that then he told me of his greatly failing health, but that the production of this fine seedling Potato seemed to inspire him with new strength and energy. Being of a somewhat devotional turn of mind, he did not hesitate to ascribe the finding of the seed-balls on the Early Rose Potato, from out of which Magnum Bonum, Covent Garden Perfection, and some other varieties came, to a Providential dispensation. Of course, practical men were content to ascribe their production to natural causes, but it was all the same very remarkable that without any human effort at fertilisation, Early Rose Potato—a variety which naturally rarely sets a bloom—should have thus produced seed-apples. Mr. Clarke believed that the pollen-parent must have been Paterson's Victoria, as a quantity of that then excellent Potato was growing near. In any case, the product of this accidental cross-fertilisation, and accidental find, was a Potato which has done more than any other, whether of itself or through its progeny, to revolutionise the Potato trade, which prior to the introduction of Magnum Bonum was suffering severely under the repeated blows then so often and harshly given by the Potato-fungus. We have had lots of remarkably fine Potatos produced since Magnum Bonum came into the world, but that had got such a grip of the trade, that it has not been possible to displace it in popular favour. As a result, we have Potatos selling at such low prices that it seems impossible they can pay to grow. Mr. Clarke had raised some very fine varieties since his first great find, and these chiefly have been put into commerce also through Messrs. Sutton & Sons, of Reading. *A. D.*

MAGNOLIA EXMOUTH VAR.—I enclose flower of Magnolia grandiflora Exmouth var. from a stool growing open with others, but it is the only one that produces flowers so double. I submit for your opinion, is it a rare sport, or is there a double var. extant? The stool is twenty-five to thirty years old, and if, as my people say, it has flowered double before, we have passed on, and taken no particular notice of it. *Robert H. Poynter.* [We do not remember ever to have seen one so double before. It is clearly a "sport," and worth propagating. Ed.]

A NEW ARRANGEMENT FOR USE IN GREENHOUSES.

In the nursery of M. A. D'Haene, of Ghent, may be seen a new arrangement of the staging, which is worth notice. On each side of the path, which divides the house longitudinally into two equal parts, there is placed a propagating-case, devoted to the propagation and germination of plants, and covered by lights which can be pushed away when necessary. Above these cases is an arrangement of stages, on which plants may be placed; these stages are also on rollers, and may be moved aside when it is necessary to work at the case beneath, or when the plants upon them have to be changed. Behind these stages, the glass side of the house, 3 feet deep, permits the entrance of sufficient sunlight to the frame, so that cuttings can be taken; and seeds, especially those of Palms, may germinate. The results which the inventor of this system has obtained so far are most satisfactory.

At the top of the house, the small beams are strengthened by horizontal iron bars, from which Orchids, Nepenthes, &c., may be hung; in a word, there are, as it were three tiers, one devoted to the germination and propagation of seeds and plants, another for growing plants, and lastly one for specimens which require to be suspended in baskets or little wooden rafts.

The illustration at fig. 37, shows this convenient arrangement.

SOCIETIES.

CARDIFF.

August 13.—The second exhibition of this reorganised Society took place in the Sophia Gardens, which the present Marquis of Bute presented to Cardiff. They are close to the town, and admirably adapted for the purposes of an exhibition of this character. The newly-formed Society is being well supported, and there was a large attendance at the show. One marked feature about Cardiff is the excellent window plants in the houses of many of the labouring classes, and some of these were present at the show—zonal Pelargoniums, single and double, tricolor and bicolor types; Fuchsias, Begonias, Musk, Myrtle, Mignonette, &c.; and one interesting class was for a collection of six one-sided window

plants, as grown in a window, some good subjects being staged.

Some classes are thrown open to all comers, and one of these was for twelve stove and greenhouse plants in flower, not less than six varieties. Mr. John Lockyer, Pontypool, was 1st, with a good, bright, clean lot of specimens, well grown and bloomed, including Bougainvillea glabra, Allamanda nobilis, Stephanotis floribunda, Ixora Prince of Orange, I. regina, Eucharis amazonica, Clerodendron Balfourianum, &c. 2nd, Mr. James Cypher, Cheltenham, with a few good Ericas and other subjects similar to the foregoing.

Fuchsias were a good feature, some large, freely-grown and finely-bloomed plants being staged by Mr. Clarke, gr. to Col. E. S. Hill, M.P., Llandaff; Mr. T. Hilliard, Cardiff, a good 2nd. The latter had six well-grown and bloomed zonal Pelargoniums, and was awarded the 1st prize.

Foliaged plants were shown in collections of eight. Mr. Cypher being 1st with three fine Kentias, viz., Belmoreana, Forsteriana, and australis; Crotons Mortii, Thompsoni, and angustifolius, &c. Mr. A. Pettigrew, Cardiff Castle Gardens, was 2nd, with smaller, but well-grown examples.

Mr. A. Armytage, gr. to Col. Page, Llandaff, was 1st, with eight exotic Ferns, showing some good Adiantums, a fine golden Gymnogramma, &c.

In the division for amateurs' and gentlemen's gardeners, small but generally well-grown plants were staged, the principal prize-winners being Messrs. Clarke, Pettigrew, Waldron, and Cottes. Cottagers' plants were numerous, and, as previously remarked, of a very interesting character.

Cut flowers included some fairly good Roses and Dahlias. Mr. Pettigrew was 1st, with twelve bunches of hardy herbaceous subjects; and also with twelve bunches of stove and greenhouse cut flowers. Wreaths and crosses were a very good feature, especially those shown by Messrs. Phelps & Co., of Cardiff.

Fruit was present in good quantities, and generally of good quality. The best six bunches of Grapes, not less than four varieties, came from Mr. T. M. Franklen, who had Black Hamburgh, Alicante, Muscat of Alexandria, and Foster's Seedling. Mr. Pettigrew was 2nd, with Alnwick Seedling, well finished. Mr. Franklen also had the best three bunches of Black Hamburgh, also of Muscat of Alexandria and Foster's Seedling; Colonel Turberville taking the 1st prize, with three bunches of Alicantes; Mr. Pettigrew being a close 2nd. Grapes were also shown in single bunches in another division. Mr. J. A. Corbett and Colonel Page were 1st and 2nd, with six dishes of pretty good dessert Apples. With six culinary varieties, Mr. Pettigrew was 1st, with superb examples of Lord Grosvenor, Lord Suffield, Ecklinville, Potts' Seedling, Nelson's Glory, and Emperor Alexander. He also had a dish of Lord Suffield Apple, very fine indeed; and he was 1st with a dish of dessert Pears, showing Jargonelle. Peaches, Nectarines, and Plums were somewhat sparingly shown.

Vegetables were a very good feature indeed, this being a general characteristic this season at flower shows; and, though the Potato disease appears rampant in many districts, good, clean, handsome tubers are staged. The soil about Cardiff seems to be favourable to the production of fine samples of vegetables.

SEVENOAKS.

The twenty-third annual exhibition was held in Knole Park and Gardens on Wednesday, the 13th inst., which had been kindly placed at the disposal of the committee by the Right Hon. Lord Sackville, the President. Four large tents were required to accommodate the various exhibits, which were both extensive and good.

Several groups of plants, not for competition, were staged, the most notable of which was one from Messrs. B. S. Williams & Son.

Messrs. J. Laing & Sons had a fine group of well-grown decorative plants, as did Mr. A. Jeffkins, of Westerham. Mr. Webber, of Tonbridge, showed a group of Ferns; Mrs. Seale, a collection of miscellaneous plants; Messrs. Cannell & Sons, cut blooms of Begonias and Gladioli. Messrs. Cutbush & Son, Highgate, sent a miscellaneous collection of flowering plants, foliage, &c.

For a collection of exotic flowering plants (Orchids excluded), Mr. A. Gibson, gr. to T. F. Burnaby-Atkins, Esq., Halsted Place, led with good specimens. 2nd, Mr. J. Goodman, gr. to Mrs. Crawshay, Bradbourne Hall; who, however, was 1st for six ornamental foliage plants; and again for exotic Ferns, six distinct varieties. Mr. S. Cooke, gr. to De B. Crawshay, Esq., Rosefield, Sevenoaks, had the finest specimen plant, showing Epidendrum prismatocarpum.

The class for a collection of plants arranged for effect in a space of 9 feet by 6 feet, brought out six exhibitors; and in a close competition, Mr. S. Cooke secured 1st prize with an arrangement of Ferns and Orchids.

In the group of Ferns arranged for effect, Mr. Hatton secured 1st. Messrs. Vallins, Heath, Learing, Hatton, and Fennell were also successful exhibitors.

Fruit was not so largely shown as in previous years, owing, no doubt, to the show being held a fortnight earlier. For a collection of six dishes, Mr. T. Osman, gr. to Mr. Baker, Chertsey, led.

Grapes were best from Mr. Sutton, gr. to Lord Stanhope, Chevening; he had also Muscat of Alexandria in good form; and Mr. Goodman a fine Black Hamburgh, which secured 1st in their respective classes.

Peaches and Nectarines were not so good as in previous years. The same remark applies to culinary Apples. Cottagers' vegetables were fine.

TAUNTON DEANE.

August 14. — This is, without exception, the largest and most important exhibition held in the West of England, and in respect of the numerous and fine specimen plants staged, one of the best in the country. A large sum of money is offered in prizes, and competition came from a considerable distance. This was the twenty-third exhibition, and it took place, as usual, in Vivary Park, and there was a large attendance, the takings at the gates exceeding those of last year.

The 1st prize for twelve stove and greenhouse plants in flower, was won by Mr. James Cypher, with a very fine lot, consisting of Ixoras regina javanicum, salicifolia, and Duffii, the two last named with very fine trusses of bloom; Clerodendron Balfourianum, Allamanda Hendersoni, A. nobilis, Bougainvillea glabra, and Ericas, perhaps one of the best collections Mr. Cypher has shown at Taunton for years. Mr. J. F. Mould, nurseryman, Pewsey, was 2nd, his leading plants being Ericas Jacksoni, obbata, purpurea, retorta major, and McNabiana superba. Mr. Cypher had the best six, consisting of good examples of Ericas tricolor majus, Fairrieana, and Turnbulli, Statice profusa, Allamanda grandiflora, and Ixora coccinea; 2nd, Mr. E. Wills, gr. to Mrs. Pearce, Bassett, Southampton.

In the amateurs' division for twelve plants, Mr. W. Rowland, gr. to W. Brock, Esq., Exeter, was 1st, with a very good lot indeed; Mr. J. Currey, gr. to Colonel Pepper, Salisbury, had the best six, including foliaged, staging capital specimens of Cycas revoluta, Croton Queen Victoria, Ixora Dixiana, Erica McNabiana rosea, E. Eweriana, and Allamanda cathartica. Mr. E. Wills was 2nd, staging a fine piece of Eucharis amazonica, and a good Erica obbata.

Tuberous-rooted Begonias were numerously and finely represented: the best eight plants came from Mrs. Altham, Timberscombe (gr. Mr. W. Bond), admirably grown; Mr. W. Godding, nurseryman, Taunton, was 2nd. Zonal Pelargoniums, single and double, were finely grown and bloomed, Mr. V. Slade, Staplegrove, taking the 1st prize in both classes. Fuchsias were not so good as usual, while Cockscombs were fine in all the classes.

The only collection of four Orchids came from Mr. Cypher, who had very good specimens of Cattleya crispa, C. Gaskelliana, Saccolabium Blumei, and Odontoglossum Harryanum. The best newly introduced plant in bloom was Cattleya labiata striata, from Mr. J. Cypher; the best new plant with ornamental foliage, Asparagus scandens dependens, from Mr. W. Jones, gr. to Mr. McAlister.

In the amateurs' classes, such flowering plants as Japan Lilies, Fuchsias, Begonias, single and double, were very fine indeed; Gloxinias, Achimenes, Petunias, &c., were shown in general good character.

Foliaged plants were a fine feature. Mr. Cypher was 1st, having grand examples of Crotons Sunset, angustifolius, and Queen Victoria finely coloured; Cycas revoluta, Dasylirion acrotrichum, Latania borbonica, Kentia Forsteriana, and Cordyline indivisa; 2nd, Mr. W. Rowland, with a very good lot also.

Mr. W. Pepper had the best six, staging fine plants of Crotons Weismanni, Prince of Wales, and Queen Victoria, Cycas undulata, Kentia Forsteriana, and K. australis; Mr. E. Wills was 2nd, also with good plants.

The best eight exotic Ferns came from Mr. J. Lloyd, gr. to V. Stuckey, Esq., Langport, who had some fine specimens, Davallia Mooreana being especially noticeable. Mr. Rowland had the best six, Mr. Wills taking the 2nd in both.

There was but one exhibitor of hardy Ferns, a very good lot being staged by Mr. R. Huxtable, gr. to F. W. Newton, Esq., Pitminster.

The cut flowers, owing to the late period of the year, were small, the red Roses being bright, however. The best forty-eight varieties came from Mr. George Prince, Oxford; with Messrs. George Cooling & Sons, Bath, as 2nd. Dr. Budd, Bath, had the best twenty-four varieties, three blooms of each; Mr. G. Prince being 2nd.

In the amateurs' division for twenty-four blooms, Dr. Budd was 1st, and Mr. Thomas Hobbs, Bristol, 2nd.

The Rev. F. R. Burnside, Hereford, had the best twelve varieties, staging some very fine Tea-scented varieties; he also had the best twelve Teas and Noisettes. Dr. Budd being 2nd in both.

Some good blooms of Dahlias were shown in the open class from Mr. George Humphries, Langley, Chippenham, and Mr. Thomas Hobbs, Bristol; Mr. Humphries also had the best twelve fancy varieties.

In the amateurs' division, Mr. Thomas Hobbs had the best twelve.

Zonal Pelargoniums were very finely shown by Mr. C. H. Collard.

The best twelve bunches of cut flowers came from Mr. W. Iggulden, gr. to the Earl of Cork, Marston, Frome—Orchids being prominent.

In the amateurs' division, Mr. J. Parrish, gr. to Mrs. Eden, Kingston, was 1st. Mr. A. A. Walters, nurseryman, Bath, had the best twelve bunches of hardy herbaceous plants.

In the amateurs' division, Mr. J. Cording, gr. to Dr. Mead, Bishops Lydiard, led.

Some very good fruit indeed was staged. Mr. Iggulden had the best collection of ten varieties, staging Muscat of Alexandria and Madresfield Court Grapes, Smooth Cayenne Pine, Sea Eagle Peaches, Lord Napier Nectarines, Brown Turkey Figs; 2nd, Mr. Jas. Lloyd, with Madresfield Court and Foster's Seedling Grapes, very fine Dymond Peaches, and Pine-apple Nectarine.

Mr. Iggulden also had the best four dishes, staging Black Hamburgh Grapes, Hero of Lockinge Melon; 2nd, Mr. W. Daffurn, gr. to D. Cox, Esq., Weston-super-Mare, who had Madresfield Court Grapes and Noblesse Peaches.

Mr. R. Nicholas, gr. to Earl Fortescue, South Molton, had the best Pine-apple—a fine smooth Cayenne.

Mr. E. J. Hill, Bristol, had the best three bunches of Black Hamburgh Grapes, finely finished; Mr. Iggulden being 2nd; but was 1st and Mr. Lloyd 2nd with Madresfield Court. But in the class for Muscat of Alexandria, Mr. Lloyd was again 1st, and Mr. Iggulden 2d.

The best three bunches any other white came from Mr. J. Webber, gr. to G. F. Luttrell, Esq., Dunster Castle, who had Buckland Sweetwater; Mr. Iggulden was 2nd, with Foster's Seedling.

The best dish of Peaches was Noblesse, from Mr. W. Daffurn. Mr. R. Huxtable had the best dish of Apricots shown—Smith's Early (?), very like Moor Park. The best dessert Pear was Jargonelle; the best green Plums were the Gage section; and some good fruit of purple Plums were staged. The best dish of Cherries was Castle Hill Seedling, a very fine, deep coloured, large, heart-shaped variety—a seedling raised by Mr. Nicholas. Morellos were also finely shown. The best dessert Apples selected by the judges were Quarrenden and Irish Peach. The best culinary Apple, Lord Suffield, very fine fruit being staged. Currants and Gooseberries were in considerable quantities.

Vegetables were extensively staged, and in very fine condition, collections of ten varieties being splendidly shown. Potatos in six varieties were remarkable. Mr. W. Greedy, Taunton, had the best six varieties, staging Charter Oak, Clipper, Reading Russett, Cosmopolitan, Prizetaker, and Satisfaction. 2nd, Mr. George Hicks, Bridgewater, with Abundance, Vicar of Laleham, International, Reading Giant, Prizetaker, and Satisfaction. In the classes for single dishes, very fine tubers were staged.

Miscellaneous exhibits comprised a large collection of plants and cut flowers, including a large lot of cut blooms of Germania Carnation from Messrs. R. J. Veitch & Sons, Exeter. A somewhat similar

collection, but not so large, from Mr. J. Jarman, seedsman, Chard. Hardy flowers from Mr. R. H. Poynter, of Taunton, and a suberb collection of forty-eight spikes of Gladioli from Messrs. Kelway & Son, Langport.

MAIDENHEAD.

August 14.—This Society held its twelfth annual show on this date, and may be congratulated on the general good character of the exhibits, and the display produced. Although not the most attractive, probably the most interesting portion of the show was that devoted to the production of the cottagers. The committee have endeavoured to encourage and extend this department, and nothing could be more gratifying than the results. Some of the vegetables, especially the Potatos, would have been difficult to match in any exhibition. In the other portions of the show, we may notice the excellent group of plants arranged for effect, the prize for which was worthily won by Mr. Aitken, gr. to Major Meeking, Ridings Park, Slough, who also contributed the best stove and greenhouse plants, and the best six Ferns—very nice plants of Adiantum Oweni, A. Lathami, Gymnogramma peruviana argyrophylla, G. Alstoni, Davallia fijiensis, Microlepia, &c. Specimen plants in 6-inch pots, generally a feature of this show, were not nearly so good as usual. Fuchsias and zonal Pelargoniums were fairly well shown. Begonias were especially good. The lots of six each, from Mr. Lockie, gr. at Oakley Court, near Windsor, and Mr. Deedman, gr. to C. Higgins, Esq., Ray Park, Maidenhead, being fine varieties, and well-grown. Cockscombs were wonderfully fine, carrying large combs. We have not seen any finer for some time—the exhibitors, Mr. Lockie, and Mr. Mason, gr. to Miss Goulden, The Green, Cookham, were very properly placed equal. Cut flowers were well shown.

In the class for twelve hardy flowers, the judges had some difficulty as to what was actually meant by the term "hardy," nearly all the stands containing some "not hardy," such as Dahlias, Petunias," &c. The 1st prize was awarded to Mr. Mason for a very beautiful lot.

Some elegant stands of flowers for table ornamentation were put up, the competition being confined to ladies, the 1st prize being awarded to Mrs. O. King, Ray Cottage, Maidenhead. Wild flowers—as one would expect in such a district—were shown in abundance, but put up with little taste. How strange! In some districts, we always see them arranged in elegant style, whilst in others there is none.

Fruit was well shown, and in considerable quantity, especially Grapes, the Black Hamburgh, Alicante, and Muscats, from Mr. Osman, gr. to Mr. Baker, Ottershaw Park, Chertsey, being very fine. Some capital Muscats were also shown by Mr. Aitken, and Black Hamburgh by Mr. March. The 1st prize for a collection of six dishes of fruit was awarded to Mr. Goodman.

Vegetables were a strong feature, the competition for the prizes offered by Messrs. Sutton & Sons and Messrs. Webb & Sons being very keen. Mr. Wilkins, gr. to Lady T. Guest, Inwood House, Hensbridge, Blandford, obtaining the 1st place for the best collection of six varieties in competition for prizes offered by Messrs. Sutton & Sons.

The very numerous and excellent collections of cut flowers and plants exhibited by Messrs. Sutton & Sons, Mr. Owen, Messrs. Such, Messrs. Broughton, and Mr. Charles Turner added materially to the attractions and interest of the exhibition.

MATLOCK BATH.

August 8 and 9.—The nineteenth annual exhibition was held in the Pavilion grounds, situated in the midst of beautiful scenery. A group of plants, covering 1000 square feet, was arranged by Mr. Williams, gr. to Mr. Bœrlein, of Didsbury; Mr. Webb, gr. to Sutton Manners, Esq., Kelham, Mr. Barlas, gr. to F. C. Arkwright, Esq, Willersley; and Mr. Anderson, gr. to W. Walker, Esq., Lea Wood, the whole of the exhibits together forming a large circle, and wonderfully uniform fine specimens of choice plants being sent by each exhibitor. Fruit was arranged round the front of the Dome; Grapes forming the principal feature. Mr. McVinish, gr. to — Curzon, Esq., Lockington Hall, Derby, cleared the board with four bunches, and pairs of white and also of black, showing excellent Muscats and Black Hamburgh. Seventy-two bunches were staged. The Duke of St. Albans' gardener had the best collection of fruit. Bouquets were very choice, not a poor thing staged, Mr. Williams taking the lead with bouquet of Orchids. Messrs. Perkins & Sons, Coventry, had the best basket, and Mr. Barlas was a close 2nd, including in his lot a flower of white Nelumbium.

NEWCASTLE-UPON-TYNE.

August 20, 21, and 22.—The exhibition was held in the Leazes Park, and fortunately the weather was very fine the first day, with the result that a large number of visitors attended. Taking the show as a whole, it was quite up to the average.

Exhibits in the class for eight stove and greenhouse flowering plants were remarkably fine, the best collection coming from the Earl of Zetland, Richmond (Mr. Letts, gr.). His Phænocoma prolifera had large well-coloured flowers; and Erica Parmenteri rosea was large and fine; Statice profusa, rich deep blue, very strong; Dipladenia boliviensis, with its fine white flowers and orange centre; Erica Turnbulii, a superior specimen; Dipladenia amabilis, with large well-coloured flowers, were shown.

Three pots of Lilium from Colonel Angus, Fenham Hall (gr., Mr. J. Wood), easily won 1st in their class.

Heaths, though not in the form of large specimens, were well flowered, and in good condition. The best came from the Earl of Zetland's garden, Upleatham, they were Ampullacea, Irbyana, Austiniana, and Fairrieana.

Mr. Letts was easily 1st, with eight magnificent specimens of foliage plants—Crotons Johannis and Montfortiensis, were of large size, and splendidly coloured. Cycas revoluta and C. circinalis were also handsome specimens.

From Mrs. G. Pease's garden, Darlington (gr., Mr. McIntyre), came the best collection of six Ferns, splendidly grown. The climbing Lygodium scandens was very fine; as also was Gleichenia rupestris, and the handsome Microlepia hirta cristata.

A 1st prize in another class for stove and greenhouse Ferns was awarded to J. B. Hodgkin, Esq., Darlington (Mr. H. Johnston, gr.), Microlepia hirta cristata, an immense specimen, well grown; and Davallia Mooreana being the best plants.

Six immense specimen foliage plants won the 1st prize in their class for J. Lange, Esq., Gateshead (Mr. J. Wood, gr.) They were Cycads and Palms principally, but unnamed.

Fruit.—Numerous collections were exhibited, the quality being quite up to the average. The black Grapes being well coloured, and the Muscats superbly finished for the season. The best collection of twelve dishes came from Sir Joseph Pease, Bart., M.P. (Mr. J. McIndoe, gr.). He had excellent Black Hamburgh and Duke of Buccleugh Grapes, a well-ripened Charlotte Rothschild Pine, Best of All Melon, Violette Hative Peaches, and Elruge Nectarines, Duchess of Gloucester Apples, Early Transparent Plums, Brown Turkey Figs, and Souvenir du Congrès Pears.

The best collection of eight was sent by the Earl of Durham, gr., Mr. J. Hunter, who had very fine well-coloured Cannon Hall and Gros Maroc Grapes, Louise Bonne of Jersey Pears, Magnum Bonum Plums, a Melon, Peaches, Nectarines, and Apples.

Five collections of out-of-door fruits were exhibited, an excellent display; the best coming from A. Pease, Esq., Darlington (Mr. J. Short, gr.), comprised Morello Cherries, Crown Bob Gooseberries, Green Gage Plums, Irish Peach Apples, and Louise Bonne of Jersey Pears.

For six bunches of Grapes, the Marquis of Lothian, Dalkeith (Mr. J. W. McHattie, gr.), was easily 1st; he had Muscat of Alexandria, Madresfield Court, and Black Hamburgh—a splendid even lot, perfect in bunch and berry. The same exhibitor led well for two bunches of black Grapes, having remarkably well-finished Black Hamburgh.

The best Alicantes, well coloured, but a little uneven in berry, were sent from W. P. Moore, Esq., Carlisle (gr. Mr. J. Potter).

In the class for any variety of black Grapes, the Lady Downes', from the Marquis of Lothian's garden, perhaps the finest ever exhibited, won easily. The same exhibitor had the best white Muscats, all of them being most creditable to Mr. McHattie, the gardener.

The best Buckland Sweetwater were from John Hutton, Esq., Castle Eden (Mr. T. Copperthwaite, gr.); large bunches, and well finished. The heaviest bunch of Grapes of Black Hamburgh was sent by the last-named exhibitor, and weighed 4 lb. 2 oz.

The bouquets, epergnes, button-holes, &c., were shown in great numbers, and of the highest order of excellence, local exhibitors winning the leading prizes.

Cut flowers were also well shown; the date being right for Carnations and Picotees, they were exhibited in capital condition. Mr. G. Dixon of Ridinghill, Mr. Flowdy of Gateshead, and Mr. R. Scott, Summerhill Grove, Newcastle, winning the leading prizes. A new purple-flake Carnation, Mrs. Douglas, was very fine.

No fewer than eighteen collections of show and fancy Pansies were staged, most of them being in capital condition.

Collections of herbaceous plants were an excellent feature, the winning lot from the garden of A. Pease, Esq., being well set and in great bunches; Liliums Harrisi, auratum, and lancifolium being of grand quality. Bocconia cordata, Phloxes, Gladiolus, &c., were all in the best possible condition.

Nine collections of Gladioli were exhibited, the collection from Mrs. Barnes, Whitburn (Mr. A. G. Brown, gr.) being very fine; the blooms were of large size, and often as many as ten on a spike.

Hollyhocks were exhibited as single blooms, and though not so fine as they were last year, still the quality was highly creditable.

Roses showed a little the effects of the weather, but Dahlias were good, well up in the centre, and clean.

The miscellaneous collections were a feature, and contained many interesting objects not provided for in the schedule classes.

The following were awarded the Certificate of the Society, viz.:—Mr. W. J. Watson, Newcastle, for Coniferæ and flowering plants; Messrs. W. Fell & Co., Hexham, for Coniferæ, flowering plants, and cut flowers; Messrs. Little & Ballantine, Carlisle, for beautifully-coloured Crotons and other foliage plants; Messrs. Dobbie, of Rothesay, for cut flowers and well-grown vegetables.

The following exhibits were Highly Commended:—Mr. Tate, florist, 19, New Green Market, group of plants; Messrs. Kent & Brydon, Darlington, cut flowers and stove plants; Messrs. Stuart & Mein, Kelso, border Carnations; Mr. Forbes, Hawick, cut flowers; Mr. John Jennings, Palms and other stove plants; Mr. Cuthbertson, Rothesay, Leeks and cut flowers.

CHARD.

Aug. 12.—The open class was the attraction, and there was brought together a fine display of stove and greenhouse plants. There was no competition in the class for Roses; Messrs. Jarman & Co., of Chard, having a walk over. The same firm were pitted against Mr. Humphreys, of Chippenham, for double Dahlias, and the latter took 1st honours with an exceptionally grand display.

In the class for nine stove and greenhouse plants, Mr. J. Cypher, of Cheltenham, took the 1st prize with a grand collection; Mr. W. Brock, of Exeter, was a good 2nd. Mr. Cypher also led for six and for nine foliage plants.

Mrs. Pearce took 1st honours for a group of plants arranged for effect, and the same exhibitor won in other classes. Mr. Duck, of Chard, also showed well.

In the fruit classes were some magnificent black Hamburgh Grapes, shown by the Hon. Sir Ponsonby Fane, of Brympton. A splendid show of vegetables was brought together, the principal prizes going to the collections from Lady Theodora Guest, Mr. W. E. S. Erle Drax, Mr. J. Brutton, Earl Poulett, and Mr. W. M. Bryant, of Ilminster.

There were several contributions not for competition. Messrs. Jarman & Co., had a tastefully arranged group. Mr. W. Helliar, of Donyatt, showed Dahlias which were very fine. Tastefully arranged groups were sent by Mr. Lyons, gr. to Lord Bridport, and from Mr. Crook, Forde Abbey Gardens.

Obituary.

Henry Bennett.—We learn with great regret of the death of Mr. Henry Bennett, of the Rose Nurseries, Shepperton. His career was so exceptional, and afforded a valuable lesson to his brother agriculturists. These gentlemen are not generally credited with excess of enterprise, or with an inclina-

tion to move out of the routine of their forefathers, so that the experience of Mr. Bennett is the more valuable. He was a Wiltshire man, and was a tenant-farmer near Salisbury, till, finding it did not pay to grow Wheat, he commenced to grow Roses. Finding his new venture encouraging, he gave up his farm and established a large Rose nursery at Shepperton. He paid several visits to Lyons and other parts of France to select his stock; and two or three years ago, at a time of life when most people prefer to stay at home, he made a journey to visit our transatlantic cousins, by whom he was warmly received. Mr. Bennett, with a degree of perception unusual, to say the least, in an agriculturist, realised the value of scientific method in his procedures, and boldly struck out in the career of raiser, entering the field, and, successfully, as it proved, in competition with many old-established Rose-growers at home and abroad. Instead of trusting exclusively to haphazard procedures, he acted on the principle of careful selection and judicious inter-breeding. The result was, that the Wiltshire farmer startled the Rose community with "Her Majesty" and Mrs. John Laing; Princess Beatrice, a Tea; and Grace Darling, one of the Hybrid Teas; and others mentioned by Lord Penzance at the Rose Conference in 1889, will long preserve the memory of this unassuming but highly successful Rosarian.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Accumulated. Above (+) or below (—) the Mean for the week ending Aug. 16.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	0 av.	93	0	+ 80	— 72	1 +	160	30.7	27	25
2	1 —	97	0	— 51	— 58	11 +	137	19.3	21	29
3	1 —	113	0	+ 1	— 93	19 +	116	15.5	24	28
4	0 av.	131	0	— 48	— 39	6 +	120	16.0	30	35
5	1 —	123	0	— 71	— 26	3 +	115	14.7	35	31
6	1 +	140	0	— 52	— 68	1 +	114	17.9	36	33
7	0 av.	109	0	— 14	— 73	5 +	139	30.5	24	31
8	2 —	115	0	+ 12	— 81	7 +	131	19.8	23	30
9	1 —	123	0	— 60	+ 12	1 +	135	23.9	40	34
10	3 —	99	0	— 24	— 56	8 +	151	20.2	27	30
11	2 —	107	0	— 9	— 15	0 av.	146	25.7	32	32
12	1 —	131	0	+ 30	— 22	2 —	134	21.5	43	42

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending August 16, is furnished from the Meteorological Office:—

"The *weather* has been very cloudy or dull, with frequent heavy rain over all the more western and northern parts of the kingdom. In the south and south-west the condition, although showery and unsettled, were at times clear and light, and the rainfall much less heavy. Thunderstorms have occurred at times in nearly all districts.

"The *temperature* has been slightly above the mean in 'England, S.,' but in nearly all other districts it has been rather below the normal value. The highest of the maxima, which were recorded on somewhat irregular dates, ranged from 74° in the Channel Islands and 'England, S.,' to 69° in 'England, N.W.' The lowest of the minima were registered in most places on the 14th, and varied from 37° in 'Ireland, N.,' and 40° in 'Scotland, E.,' to 52° in the 'Channel Islands.'"

"The *rainfall* has been more than the mean in all districts, excepting 'Ireland, S.,' and the 'Channel Islands.' The excess has been slight in 'Scotland, N.,' 'England, S.' and 'SW.,' and the 'Midland Counties,' but considerable in all other districts. In 'Scotland, E.,' the fall has been nearly three times as much as the normal, and in 'England, N.E.,' more than four times as much.

"*Bright sunshine* has been very little prevalent generally, but over our more southern and south-western counties and in the Channel Islands a fair amount has been recorded. The percentage of the possible duration varied from 21 in 'Scotland, E.,' and 22 in 'England, N.W.,' to 36 in 'England, S.,' 40 in 'England, S.W.,' and 43 in the 'Channel Islands.'"

MARKETS.

COVENT GARDEN, August 21.

Market very quiet, with scarcely any alteration. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	3 6	5 0	Peaches, dozen	1 0	8 0
Filberts, Kent, per lb.	0 8	0 9	Pine-app'es, St. Michael, each	2 0	6 0
Grapes, lb.	0 9	3 0	Plums, ½-sieve	7 0	11 0
Lemons, per case	12 0	20 0			
Melons, each	0 6	2 0			

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Artichs., Globe, each	0 4	...	Mustard and Cress, punnet	0 4	...
Beans, French, lb.	0 4	...	Onions, per bunch	0 8	...
Beet, red, per dozen	1 0	2 0	Peas, per quart	1 0	...
Carrots, per bunch	0 6	...	Parsley, per bunch	0 6	...
Cauliflowers, each	0 3	...	Shallots, per lb.	0 6	...
Celery, per bundle	1 6	2 0	Spinach per bushel	3 0	...
Cucumbers, each	0 6	1 0	Tomatos, per lb.	0 9	...
Endive, per dozen	2 0	...	Turnips, per bunch, new	0 4	...
Herbs, per bunch	0 4	...			
Lettuces, per dozen	1 6	...			
Mushrooms, punnet	1 6	...			

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Ficus elastica, each	1 6	7 0
Aspidistra, doz.	18 0	42 0	Foliage plants, various, each	2 0	10 0
— speci. plants, each	7 6	10 6	Fuchsia, per doz.	3 0	6 0
Asters, per doz.	3 0	6 0	Heliotrope, per doz.	4 0	6 0
Balsams, per dozen	3 0	4 0	Hydrangeas, doz.	6 0	18 0
Begonias, per doz.	4 0	6 0	Liliums, various, per dozen	9 0	18 0
Calceolaria, p. doz.	4 0	6 0	Lobelia, per doz.	3 0	6 0
Chrsanthem., p. doz.	4 0	18 0	Marguerites, doz.	6 0	12 0
Cyperus, per dozen	4 0	12 0	Mignonette, per doz.	3 0	6 0
Dracæna terminalis, per dozen	30 0	60 0	Nasturtiums, p. doz.	4 0	6 0
— viridis, per doz.	12 0	24 0	Palms in variety, each	2 6	21 0
Euonymus, in var., per dozen	6 0	18 0	Pelargoniums, scarlet, per dozen	3 0	6 0
Evergreens, in var., per dozen	6 0	24 0	— per doz.	6 0	12 0
Ericas, various, doz.	8 0	24 0	Petunias, per doz.	4 0	6 0
Ferns, in var., doz	4 0	18 0			

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Pinks, various, 12 bn.	3 0	6 0
Asters, 12 bunches	2 0	4 0	Pelargoniums, scarlet, 12 spr.	0 3	0 6
— French, bunch	1 0	1 6	— dozen sprays	0 4	0 9
Bouvardias, per bun.	0 6	1 0	Primulas, double, 12 sprays	0 6	1 0
Callæthiopica, 12 bl.	2 0	5 0	Pansy, or Heartsease, 12 bunches	1 0	2 0
Carnations, 12 blms.	1 0	2 0	Poppies, various, doz. bunches	1 0	2 0
— 12 bunches	4 0	6 0	Pyrethrum, 12 bun.	2 0	4 0
Chrysanth., 12 bun.	3 0	6 0	Roses, Tea, per doz.	0 6	1 6
— 12 blooms	1 0	3 0	— coloured, dozen	1 0	1 6
Cornflower, 12 bun.	1 6	3 0	— red, per 12 bun.	2 0	6 0
Eschscholtzia, 12 bn.	2 0	3 0	— Safrano, dozen	1 0	2 0
Eucharis, per dozen	2 0	4 0	— outdoor, 12 bun.	1 0	3 0
Gardenias, 12 blooms	2 0	4 0	Stephanotis, 12 spr.	1 6	3 0
Heliotropes, 12 spr.	0 6	1 0	Sultan, 12 bunches	3 0	4 0
Lilium, var., 12 bl.	0 6	4 0	Tuberoses, 12 blms.	0 3	0 6
Maiden Hair Fern, do	4 0	9 0			
Marguerites, 12 bun.	3 0	6 0			
Mignonette, 12 bun.	1 0	3 0			
Myosotis or Forget-me-nots, 12 bun.	2 0	4 0			

Orchid-bloom in variety.

SEEDS.

London: *Aug.* 20.—Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, London, report Trifolium scarce at higher rates, English samples more particularly being wanted. Seed Rye is also dearer, the late rains having hindered deliveries. Winter Tares continue cheap. Rape seed very steady. Mustard unchanged. Some of the new home-grown Peas showing are soft. Clovers and Trefoils are strong at the late advance. Bird seeds are without alteration.

POTATOS.

Spitalfields: *August* 20.—Quotations:—Magnums, 60*s.* to 65*s.*; Myatt's Kidneys, 50*s.* to 60*s.*; Regents, 50*s.* to 60*s.*; Imperators, 60*s.* to 70*s.*; Hebrons, 40*s.* to 60*s.*; Early Rose, 40*s.* to 50*s.* per ton.

Stratford: *August* 20.—Quotations:—Magnums, black lands, 45*s.* to 55*s.*; do., light, 55*s.* to 70*s.*; Hebrons, 50*s.* to 75*s.*; Regents, 60*s.* to 80*s.* per ton.

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

Books.—Where can I obtain either of the following French works?—*Analogie des Fleurs*, de Tonssenel; *Mythologie des Plantes*, de Dr. Gubernatis; *Flore Populaire*, de Rolland; *Esprit des Plantes*, de Grimaud; *Traité du Langage Symbolique des Fleurs*, de Casimir-Magnat; *Langage des Fleurs*, de M. Martin; *Blumensprüche*, de Burger (Traduction Française); and *Parterre de Flore. Livre.* [Apply to some foreign bookseller, such as Dulau, Nutt, or Williams & Norgate].

Diseased Ferns.—A disease is attacking certain Ferns, such as Asplenium, Filix-fœmina, and Nephrodium spinulosum. What is it? What is to be done? [The specimens sent show the pinnæ brown and shrivelled, as if scorched. They have much of the appearance presented by leaves when they have been wet with dew, and then subjected to the sun's rays. A similar effect is produced by radiation and frost, but neither of these conditions seem likely to have been present in this case. On a superficial examination, there seems to be neither fungus nor insect, though, of course, it is possible one or other, or both, are, or have been, present. The disease apparently begins at the base of the pinnæ, and proceeds upwards towards the tip. The Ferns are growing in the open air].

The Oak Caterpillar.—Will some reader who has had practical experience with forestry tell me if there is a remedy for the caterpillars, or maggot, on the Oaks, as the trees here have been terribly infested? *J. T. Eccleston, Canwell Gardens, Tamworth.*

NOTICES TO CORRESPONDENTS.

Aster: *F. Rœmer, Quedlinburg.* The dwarf Comet Aster you sent is a very pretty one, and the dwarf compact habit is a recommendation. The delicate rose colour of the flower is very pleasing.

Books: *C. H. Fruit Culture Under Glass*, by D. Thomson (Blackwood & Sons).

Carnation: *Stanley.* A flower of good form and substance; petals smooth, scarlet, with a slight flush of purple. The pod is unbroken. We think well of the sample sent, but it lacks fragrance.

Cucumbers and Melons: *A. G. C.* The roots are not affected by the eel-worm, and we can only suggest "gumming," of which, however, there is, as yet, no satisfactory explanation.

Ergot: *C. W. D.* We do not see any trace of this, but will examine more carefully.

Fruit Evaporating: *F. Clowes.* A full report of Mr. Badger's lecture, and the discussion thereon, will in due course appear in the *Journal of the Royal Horticultural Society.*

Fruit Trees for North-east Wall: *H. S.* Plums and Morello Cherries. Of the former, such varieties as Victoria, Pond's Seedling, and Jefferson—but, preferably, the first named.

Galls on Lime: *Leirion.* The galls you send are the work of a mite (Phytoptus tiliæ, fig. 38); generally no appreciable harm is done by them.

Grubs: *R. S.* The grubs are those of the weevil. Lay slices of Carrot about, and trap them when feeding.

London Rocket: *Flos.* Certainly; many more so.

Milfoil: *Flos.* Yellow Rocket, &c. Consult the index to Britten & Holland's *Dictionary of English Plant Names*, and you will find more names than we have space to print. The name given is the one in most common use.

Names of Fruits: *Houston.* It is not possible to determine certain varieties of Peaches from fruits

alone; both of your specimens look like Bellegarde. Apples: 1, Catshead; 2, Cellini; 3, Scarlet Nonpareil, probably—not ripe; 4, Striped Beaufin, probably—not ripe.—*E. A.* Nectarine Victoria, Peach Princess of Wales.—*J. H. B.* Plum Bradshaw.

Names of Plants: *W. N.* 1, Euonymus japonicus variegatus; 2, Rhus typhina.—*Wild Fern.* 1, Asplenium ruta muraria; 2, Ceterach officinarum; 3, Asplenium Trichomanes; 4, Polypodium vulgare; 5, Scolopendrium vulgare; 6, Alchemilla vulgaris; 7, Geranium pratense.—*D. W.* Prunella vulgaris.—*C. B.* 1, not recognised; 2, Stachys lanata; 3, Echinops retro; 4, Antennaria margaritacea.—*E. D. L.* 1, Rhamnus alpinus; 2, Rhamnus Frangula; 3. Cnicus altissimus; 4, Berberis Wallichii.—*J. Aitken.* Scolymus hispanicus. —*W. P. & Sons.* A Diosma, or some such plant; we cannot name it without seeing the flower.—*G. L. B.* 1, Aspidium atratum; 2, Lastrea dilatata; 3, Asplenium adiantum nigrum var.; 4, Lastrea spinulosa; 5, Aspidium caryotideum; 6, Polypodium phymatodes; 7, Polypodium longissimum; 8, Nephrodium molle cristatum.—*J. B. D.* A form of Cattleya Warscewiczii (= C. gigas, of gardens).—*J. B.* Diplopappus chrysophyllus.—*G. P.* Dianthus plumarius.

Nymphæa: *Flos.* Any cooling or heat-withdrawing substance would have such an effect as you describe.

Peaches and Nectarines not Fruiting: *G. H.* We cannot help you, unless we have fuller particulars as to cultivation. You tell us nothing. It may be the result of improper ventilation or watering. It is not likely that the Chrysanthemums have anything to do with the failure.

Proliferous Rose: *George M.* By no means uncommon, but always interesting. Growth has been checked, and then resumed, how or why, we do not know.

Silver Bush: *Flos.* If by this you mean Clematis vitalba, it is found in hedges on a limestone soil, and the name is given from the appearance of the ripe seed-vessel.

Silver Weed: *Flos.* Potentilla anserina, so called on account of the colour of its foliage, and very common, at least in southern England, by roadsides, &c.

Stimuli of Bramble: *Flos.* We never saw the term. Is it a misprint for acini?

Strobilanthes: *J. L.* This belongs to the Acanthaceæ, and is spelt as we give it.

Tomato Diseased.—The fruit sent is affected with the black spot disease, which is caused by a fungus; and, of course, when the diseased part is cut away, you can safely eat the remainder.

Vegetables in a Collection: *Constant Reader.* Red and white Celery, kidney and round Potatos, and Snowball and Red Globe Turnips are each distinct *varieties*, of course; but in a collection for exhibition, distinct *kinds* are generally asked for. The whole question turns on meaning attached to those words, and which, in case of doubt, the committee should be asked to decide.

Vines: *F. T. D.* The portions of the Muscats sent show a great lack of vigour; there is no disease of any sort present. It may be that the border is too rich, and as a remedy you can apply fresh loam—not manure—and do so without disturbing the roots more than you can help.

Water Lily: *M. C.* The leaf of the Victoria regia is capable of supporting the weight of a man, and in our issue for June 18, 1887, you can see an illustration of the plant at Cherkley Court, Leatherhead, with a child setting on a chair, which is supported by the leaf. The plant is successfully grown in the Royal Gardens, Kew, and elsewhere.

Communications Received.—H. Cannell (no letter).—J. B. (your wishes shall be attended to).—H. F.—E. F. G. (many thanks).—H. V.—E. J. H.—C W. D.—H. J. S., Hamilton, Victoria.—T. H. P. (many thanks).—A. D.—W. C. S.—T. H. M.—J. W.—T. L., Dublin.—Veritas, Baroda.—W. H. Rogers.—J. Cole.—E. Walker.—W. Fletcher.—Vesta, (thanks).—H. E.—T. H. M.—G. B. Claydon.—G. F. W.—J. Haysman.—J. A. K.—H. H. (next week).

DIED—Samuel Ponsford, of 7, St. James' Road, Brixton, on August 16, in his eighty-ninth year. He was the originator of the firm of "Ponsford & Son," nurserymen, &c., Brixton, Surrey, S.W.

CHRYSANTHEMUM SEASON.

STANDEN'S MANURE.

Established Nearly 30 Years.

It is now generally acknowledged that this highly concentrated Manure exceeds all others in general fertilizing properties and staying powers, thus rendering its money value at least double that of other Manures.

More prizes have been obtained through the use of this Manure by Chrysanthemum exhibitors than by any other Fertilizer.

It promotes a rapid, healthy, and robust growth to plants generally.

It is a clean and dry Powder, with very little smell.

It is consequently particularly adaptable for Amateurs, equally with Nurserymen.

VOLUNTARY TESTIMONIALS,
the originals of which can be seen if desired:—

MESSRS. CORRY, SOPER, FOWLER & CO.,
Fareham.

"Sirs,—We have used Standen's Manure for Chrysanthemums, mixed with the mould, when potting their last shift, and an occasional sprinkle over the top of the pots during their growth, especially just before the bud shows. We took last season thirty-one First Prizes, Silver Cup at Portsmouth, £25 Silver Cup, Devizes, and £10. We can highly recommend it for plants, especially Roses, Pelargoniums, Azaleas, Gardenias, and Stephanotis. Our Stephanotis this season we can pick by the gallon, from six to eight pips on each spray."

(Signed) W. & G. DROVER.

"We have used Standen's Manure for some years, and have never found any fertilizer so safe and valuable. Its action is literally 'magical.' We have tried it on unhealthy plants which seemed past recovery, and it has restored them to their natural vigour. However valuable other fertilizers may be, none can be compared to this. Camellias grown in the same pots *for ten years* are as healthy as it just repotted."

C. M. HOVEY, Boston, U.S.A.

Sold in Tins of increased sizes—6d., 1s., 2s. 6d., and 5s. 6d. each.

And in Kegs (free), at the following greatly reduced prices:—28 lb., 10s. 6d.; 56 lb., 18s.; 112 lb., 32s.

Sole Manufacturers:

CORRY, SOPER, FOWLER & CO.

(LIMITED), LONDON.

Sold by all Nurserymen, Seedsmen, and Florists.

Great Reduction in Price of

LETHORION

(VAPOUR CONE).



Nothing can surpass this method for the total destruction of Insect Pests in Greenhouses. It cannot fail where the houses are secure. No possible injury to the most delicate plant.

PRICES—For Frames, &c., of 50 cubic feet, 6*d.*; 100 feet, 9*d.*; 500 feet, 1*s.*; 1000 feet, 1*s.* 6*d.*; 4000 feet, 5*s.* each.

Owing to the enormous demand, intending users should give their Seedsmen Early Orders to secure a supply.

Manufacturers:—

CORRY, SOPER, FOWLER & CO.

(Limited), LONDON.

TO BE OBTAINED OF ALL SEEDSMEN.

Tobacco Paper is often Useless and Ineffectual,
but

CAMPBELL'S FUMIGATING INSECTICIDE

is simple to use and free from unpleasant smell.

From Mr. G. Wythes, *Syon Gardens, Brentford.*—"I am pleased with the Fumigating Insecticide. For Orchids I think it will be a great boon."

From Mr. W. Tunnington, *The Gardens, Calderstone.*—"We have again used your Fumigating Insecticide, and have not the least doubt about its efficacy."

From Mr. W. Bennett, *The Gardens, Rangemore, Burton-on-Trent.*—"I am much obliged for your Fumigating Insecticide, and cannot do any other than report favourably. We tried it upon a lot of miscellaneous things, and they are now, a week after, quite clean and uninjured."

From Messrs. J. Backhouse & Son, *Nurseries, York.*—"We have tried Campbell's Fumigating Insecticide, and found it very efficacious, and also pleasant in using."

From Mr. John Roberts, *The Gardens, Tan-y-Bwlch.*—"Thanks for Fumigating Insecticide. I have given it a fair trial. It seems to be a great boon, not requiring any attention after being lighted, and is perfectly harmless to delicate flowers and leaves."

In rolls, post-free, for houses having a capacity of—

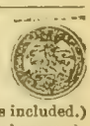
100 cubic ft.,	500 cubic ft.,	1000 cubic ft.,	2000 cubic ft.,
8*d.*	1/-.	1/3.	2/3.
	3000 cubic ft.,	4000 cubic ft.	
	2/9.	3/3.	

CLIBRAN'S, Oldfield Nurseries, ALTRINCHAM;
Also 10 and 12, Market Street, Manchester.

ORCHID PEAT, best quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. RHODODENDRON and AZALEA PEAT. Samples and Prices to WALKER and CO., Farnborough, Hants.



GARDEN REQUISITES.



Two Prize Medals.

Quality, THE BEST in the Market. (All sacks included.)

COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* 4*d.* each; 10 sacks, 12*s.* 6*d.*; 15 sacks, 17*s.* 6*d.*, 20 sacks, 20*s.*; 25 sacks, 24*s.*; 30 sacks, 27*s.*; 40 sacks, 35*s.*; 50 sacks, 40*s.*; Truck-load, loose, free on rail, 30*s.*

GENUINE ORCHID PEAT, 8*s.* 6*d.* per sack; 5 sacks, 40*s.*; BEST BROWN FIBROUS PEAT, 5*s.* per sack; 5 for 22*s.* 6*d.* BLACK FIBROUS PEAT, 4*s.* 6*d.* per sack; 5 for 20*s.* COARSE SILVER SAND, 1*s.* 6*d.* per bushel; 14*s.* half ton; 24*s.* per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1*s.* per bushel. Tobacco Paper, 1*s.* per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, Shell Shingle, Charcoal, Mushroom Spawn, and Russia Mats.

GARDEN NETTING, 2 yards wide, 1½*d.*, or 100 yards, 10*s.*; 4 yards wide, 3*d.*, or 100 yards, 20*s.* SCRIM CANVAS, 1 yard wide, 3*d.*, 2 yards, 6*d.* per yard. TIFFANY, 38 in. wide, in 20 yard pieces, 3*s.* 6*d.* per piece.

BAMBOO CANES, 3 feet 10 in., 3*s.* 6*d.*, 5*s.*, and 7*s.* per 100; extra long, 5*s.* per dozen.

DAHLIA STAKES, and all kinds of Flower Sticks, Cheapest in the Market. Marquees, Tents, Flags, and all kinds of Garden Tools and Sundries.

Terms strictly Cash with order. Price LIST on application from

CHUBB, ROUND & CO., West Ferry Road, Millwall, London, E *Bankers—Smith, Payne, & Smiths.*

THE "STOTT" INSECTICIDE



Price Lists and Testimonials on Application.
THE "STOTT" FERTILIZER, INSECTICIDE DISTRIBUTOR, Co., Ltd.,
BARTON HOUSE, MANCHESTER.

BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1*s.*, 2*s.* 6*d.*, 5*s.* 6*d.*, and 10*s.* 6*d.* each, or 1 cwt. Bags, sealed, 13*s.* By all Seedsmen, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

CARSON'S PAINT

Patronised by 16,000 of the Nobility, Gentry, and Clergy, for all kinds of

OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames, &c.

1 Cwt., and Oil Mixture, Free to all Stations.
Liquid Non-Poisonous Paints for Inside of Conservatories, &c. Prices, Patterns, and Testimonials, Post-free.

LA BELLE SAUVAGE YARD, LUDGATE HILL, E.C.
BACHELOR'S WALK, DUBLIN.—*Discount for Cash.*

THE
"PERFECT"
WEED KILLER



TRIAL SAMPLE post-free.

Without which none is genuine.

Maintains its Superiority over all Rivals

for permanently destroying vegetation on Walks, Carriage Drives, Ash Tennis Courts, Stonework grown green, &c.

Used at Kew Gardens, Royal Horticultural Gardens, &c., &c.

COMPLETE SATISFACTION GUARANTEED

to all using WEED KILLER bearing our Trade Mark, without which none is genuine. *Refuse Imitations.*

PRICE—Gallon, 2/-; 5 gal., 1/9 per gal.; 10 gal. 1/6 per gal.; 40 gal. 1/4 per gal. SPECIAL QUOTATIONS FOR QUANTITIES. *Carriage paid on 10 gallons and upwards.*

DISTRIBUTOR for
"Perfect" Weed Killer.



Holds 40 gallons. Wrought-iron frame-work neatly painted. Galvanized tubes with tap to regulate flow. Gives spray 36 ins. wide. Price £4 net on rail Glasgow.

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HORTICULTURAL & AGRICULTURAL CHEMICAL COY.
Works: 97, Milton Street, Glasgow.
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NOTICE.—*We originally had our Works at Tonbridge, Kent but removed them to* **GLASGOW** *in January, 1887, since which time our* **ONLY ADDRESS** *has been* **GLASGOW.**

London Wholesale Agents, HURST & SON, 152, Houndsditch.
SOLD by SEEDSMEN and FLORISTS.

CLAY'S
FERTILISER
OR
PLANT FOOD

Sold in Packets, **6d.** and **1s.** each, and in
Sealed Bags Only.
7 lb., 2/6; 14 lb., 4/6; 28 lb., 7/6; 56 lb., 12/6; 1 cwt., 20/-

CLAY & LEVESLEY,
TEMPLE MILL LANE, STRATFORD, LONDON, E.

LEMON OIL INSECTICIDE

For certainty in action, every insect it touches being killed, easy of application, for safety, and for cost, it is the finest preparation for Dipping or Syringing Plants. Post-free—Pints, 1s. 10d.; Quarts, 3s. 3d.; Half-gallons, 5s. 9d.

EUCHARIS MITE KILLER

has saved thousands of Bulbs from destruction. If your Bulbous Plants are unhealthy, try this. Post-free—Half-pints, 1s. 9d.; Pints, 2s. 9d.; Quarts, 4s. 9d.; Half-gallons, 8s.

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SPECIAL for Orchids, Choice Plants, Hardwooded and Fern do., and Rhododendrons. Excellent **LEAF-MOULD, SAND, Rich LOAM, PEAT-MOULD, CHARCOAL, COCOA FIBRE, SPHAGNUM, and all GARDEN SUNDRIES. PEAT MOSS LITTER.—EPPS & CO.,** The Peat Dépôt, Ringwood, Hants.

BROWN FIBROUS PEAT for ORCHIDS, 31s. 6d. per Ton, or 12s. per Truck of 4 tons; Bags, 5s. each; 10 Bags, 45s.

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PEAT, for forming Rhododendron, Bog, and American Plant Beds, 21s per Ton, or £4 4s. per Truck of 4 tons.

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BENTLEY'S INSECTICIDE.

Mr. W. C. LEACH, *Albury Park Gardens, Guildford, writes:*—"I must say your Insecticide is the best I have ever used, being death to all insect pests; in fact, a real gardeners' friend."

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In Bottles, 2/- and 3/6; ½ gallon Tins, 5/-; 1 gallon Tins, 9/-; 3 gallon Drums, 8/- per gallon.

To be had of the Trade, or direct of the Sole Manufacturer,

JOSEPH BENTLEY,
CHEMICAL WORKS,
BARROW-ON-HUMBER, HULL.

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COCOA-NUT FIBRE REFUSE,
4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, 22s.; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 26s. per ton, in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—**H. G. SMYTH,** F.R.H.S., 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

S.C.CLAY'S
INVIGORATOR

TRADE MARK.

FOR PLANTS.
QUICK. LASTING. ECONOMICAL.

This is a Plant Food of great excellence, carefully prepared with the view of supplying a manure which shall contain all the elements necessary for the Perfection of Plant Life, and at the same time be QUICK IN ACTION, LASTING, AND ECONOMICAL.

The ingredients have been so arranged that, whilst accelerating luxuriant growth, permanent benefit is secured by a continuance of nourishment to the plant.

It is safe in use, and suitable for every purpose where a manure is required.

Sold by Seedsmen, Florists, and Nurserymen, or direct from the Works, in **6d.** *and* **1s.** *Packets, and SEALED BAGS:—*

7 lb.	14 lb.	28 lb.	56 lb.	112 lb.
2s. 6d.	**4s. 6d.**	**7s. 6d.**	**12s. 6d.**	**20s.**

The above Trade Mark is printed on every Packet and Bag, and also impressed on the Lead Seal attached to the mouth of each Bag.

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MARSH ISLAND, STRATFORD NEW TOWN, LONDON, E.
NO CONNECTION WITH ANY OTHER FIRM.

GENUINE GARDEN REQUISITES, as supplied to the Royal Gardens.
RUSSIA MATS—New Archangel, 9 ft. 4 ins. by 4 ft. 6 ins., 2*6s.* doz.; Heavy Petersburg, 7 ft. by 3 ft. 8 ins., 12s. doz. SPECIALITE TOBACCO PAPER, 10*d.* per lb., 28 lb. for 21s. TOBACCO CLOTH, 1s. per lb., 28 lb. for 26s. ORCHID PEAT, 8s. per sack. PEAT, LOAM, SAND MANURES, and SUNDRIES. Price List free.—W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

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"New Milltrack" Mushroom Spawn and nothing else.
The only exclusive business of the kind in England.

BASON'S WONDERFUL "NEW MILL-TRACK" MUSHROOM SPAWN

is the best, and has achieved more success than any other Spawn in the world, *vide* Press Notices and recent Testimonials, *with dates*, from leading authorities throughout the Kingdom. Price, 6s. per bushel of sixteen cakes, the largest ever offered (*cases and packing free*). Sample Cake, with Cultural Directions, by Parcel Post, 9d.

Sole Proprietor and only Manufacturer of the "New Milltrack" Mushroom Spawn for Home and Export, WILLIAM DD. BASON, 25, Victoria Buildings, Wolverhampton.

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THE CELEBRATED "ACME"
SAFE
WEED KILLER
CHEAPEST & BEST

SAVES MORE THAN TWICE ITS COST IN LABOUR. NO SMELL.

One application will keep the Walks and Drives clear of Weeds for at least Eighteen Months.

Highly commended by the Judges at the Alexandra Palace Rose Show, 1889, after 15 Months' Trial. Awarded a Certificate of Merit by the Scottish Horticultural Association, 1889.

Mr. W. G. HEAD, Crystal Palace, says:—"We were so satisfied with your composition and its price, that we have used it absolutely, and have every confidence in recommending it."

Mr. R. IRWIN LYNCH, Curator, Botanic Gardens, Cambridge, says:—"There can be no question with regard to its efficacy."

Prices:—In 1 and 2-gal. tins, **2s.** per gal. (tins included); in 5-gal. drums, **1s. 6d.** per gal.; 10 and 15-gal. Drums, **1s. 4d.** per gal. Special quotation for larger quantities. Carriage paid on 10 gals. and upwards.

☞ *Used in the proportion of One Gallon to 25 Gallons of Water.*

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STOCK SIZES	
Inches.	Inches.
14×12	20×15
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18×12	22×16
20×12	24×16
16×14	20×18
18×14	22×18
20×14	24×18

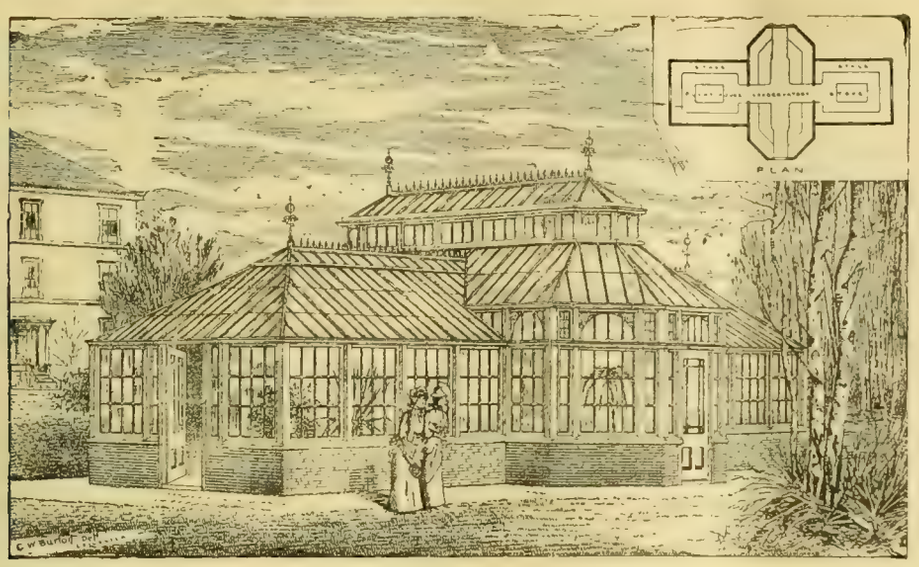
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21-oz. and **15-oz. Foreign,** of above sizes, in boxes of 100 feet and 200 feet super.

English Glass, cut to buyers' sizes, at lowest prices, *delivered free and sound* in the country, in quantity.

"HORTICULTURAL PUTTY." Own Special Manufacture.

GEORGE FARMILOE & SONS,
LEAD, GLASS, OIL, and COLOUR MERCHANTS,
84, St. John Street, West Smithfield, London, E.C.
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Just issued, will be found the most complete, practical, and reliable guide to all about to build, alter, or heat Greenhouses. Illustrations of every description of Glasshouse, from the largest range of Winter Gardens to the simplest forms of Portable Greenhouses, Plant Protectors, and Garden Frames; also of all the best kind of Boilers, Hot-water Pipes, and all appliances for heating. This Catalogue, possessing hundreds of illustrations of all the latest improvements in greenhouse building and heating, is on a scale never before attempted. It should be in the hands of every one interested in gardening, as it contains many practical hints on the subjects of which it treats, the result of many years' experience. **Price 2s. post-free.**

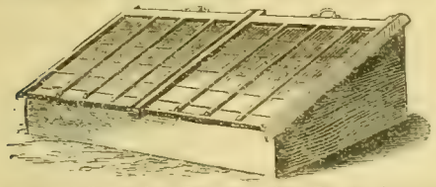
A large number of the illustrations are taken from greenhouses erected by us in various parts of the country, an inspection of this Catalogue shows, therefore, buildings the efficiency of which has been well tested by actual use. The advantages possessed by us enable us to carry out work with the utmost promptness, and in the very best style, at prices which defy competition. Surveys made, and gentlemen waited on in any part of the country. Plans and Estimates free on application.

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HORTICULTURAL BUILDERS, **CAMBRIDGE.**

New Catalogue of Garden Frames now ready, post free



Melon and Cucumber Frames. *Only Best Quality made.*

These Frames are made of good red wood deal, well seasoned, 1½ inch thick, with our improved corners. The Lights are 2 inches thick, with iron cross-bar and handle. Painted three times, glazed, ready for use, with 21-oz. English glass. Stocked in the following useful sizes:—

CASH PRICES; Carriage and Packing Free.

1-Light Frame,	6 feet by 4 feet	£1	18	0
2 ,, ,,	6 feet by 4 feet	2	0	0
2 ,, ,,	8 feet by 5 feet	2	15	0
2 ,, ,,	8 feet by 5 feet	3	0	0
3 ,, ,,	12 feet by 6 feet	4	4	0
4 ,, ,,	16 feet by 6 feet	5	8	6
PIT LIGHTS.	6 feet by 4 feet, painted and glazed ...	0	14	0
	Ditto ditto unglazed ...	0	5	0



TERMINAL END SADDLE BOILERS.	2 ft. 6 in. long	7	0	0
	3 ft. 0 in. ,,	8	5	0
	4 ft. 0 in. ,,	11	10	0

CARRIAGE PAID to Railway Stations in England & Wales, Edinburgh and Glasgow, Dublin, and other Ports.

NETTING! NETTING! NETTING!

For Lawn Tennis Courts.

100 yards long, 2 yards wide, 8s.; 100 yards long, 3 yards wide, 12s.; 100 yards long, 4 yards wide, 16s.; 100 yards long, 5 yards wide, 20s. These Nets can be sent on approval, carriage paid.

Note the Address—

GEORGE ROBINSON,

NET MERCHANT, RYE, SUSSEX.

STEEL FENCING WIRE

of all kinds, Barb Wire, Hay Bands, Wire Netting and Fencing Materials. Wood's Patent Wire Mattresses.

Send for Price Lists to the

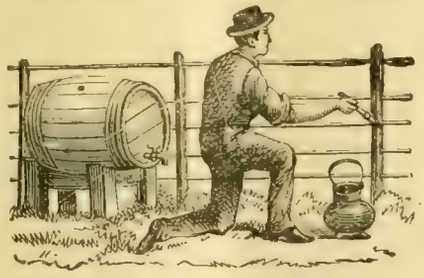
LONGFORD WIRE, IRON and STEEL COMPANY, Ltd. WARRINGTON.

PAINT TRY LEETE'S ON IRON, WOOD & STONE ALL COLORS CASH **2½lb 1d Per**

A. LEETE & Co PAINT WORKS, 129 LONDON Rd. SE

HILL & SMITH'S BLACK VARNISH

for Preserving Ironwork, Wood, or Stone.



(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.

Price 1s. 6d. per gallon at the manufactory, or carriage-paid to any railway station, 1s. 8d. per gallon in casks of 36, 18, or 9 gallons.

CAUTION.—Every Cask bears the above Registered Trade Mark. Beware of cheap imitations.

HILL & SMITH,

Brierley Ironworks, Dudley;
118, Queen Victoria Street, London, E.C.;
47, Dawson Street, Dublin.



CONWAY C. WARNE

(Successor to JOHN MATTHEWS),

Royal Potteries, Weston-super-Mare,

FOR

FLOWER POTS,

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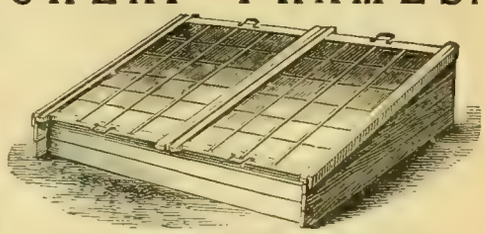
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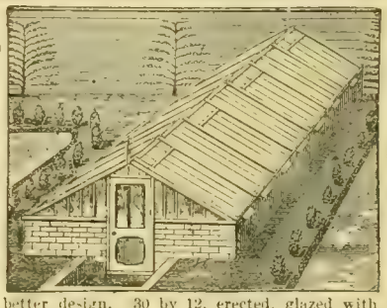
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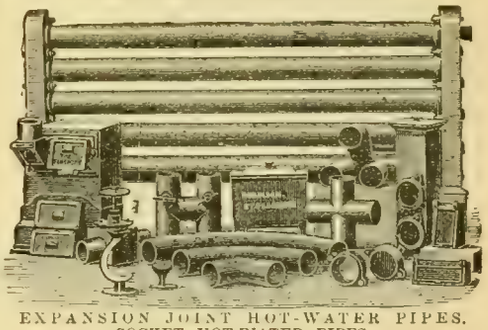
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YOUNG WOMEN who WANT TO BE INDEPENDENT, and make their own way in the world, should write for a Prospectus of the SCIENTIFIC DRESS CUTTING ASSOCIATION, 272, Regent Street, London, W. Situations for all Pupils at good salaries.

GARDENING APPOINTMENTS.

MR. WALTER VINCENT, late Head Gardener to W. L. REDHEAD, Esq., Carville Hall, Brentford, Middlesex, as Head Gardener to J. L. NEWALL, Esq., Forest Hall, Ongar, Essex.

Mr. M. REED, late Gardener to A. COOPER, Esq., The Gables, Surbiton Hill, Surrey, as Head Gardener to S. C UMFREVILLE, Esq., J.P., Ingress Abbey, Greenhithe, Kent.

Mr. SILAS COLE, late Foreman to the Marquis of WATERFORD, Curraghmore, Portlaw, Ireland, as Head Gardener to Viscount FALMOUTH, Tregothnan, Probus, Truro.

Mr. JOHN A. HALL, late Foreman at Batsford Park, Gloucestershire, and formerly of Trinity College Botanical Gardens, Dublin, as Head Gardener to — HARRISON, Esq., Shiplake Court, Henley-on-Thames.

Mr. JAMES EASTWELL, Foreman in the Gardens at Thrumpton, as Gardener to L. W. MUNRO, Esq., Lady Cross Lodge, Hants.

Mr. G. J. CLOKE has removed with Sir W. ROSE, Bart., from Bulmershe Court, near Reading, to take charge of the Gardens at Moor Park, Farnham.

Mr. WM. WRIGHT, late Foreman here (Eastwood Park, Giffnock), has been appointed Head Gardener to the Earl of BREADALBANE, Taymouth Castle, Aberfeldy, N.B.

Mr. J. MILBURN, late Foreman in Blenheim Palace Gardens, Woodstock, as Head Gardener to C. WARD JACKSON, Esq., Normanby Hall, Middlesboro-on-Tees.

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WANTED, a GARDENER, and to live in and take Charge of House during absence of family. Middle-aged couple without children. Glass. Assistance given. Church of England people. 20*s*. to 21*s*. and cottage. —State age and experience to Mr. M., Elmswell Manor, Suffolk.

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WANTED, in the Herbaceous Department, a respectable and intelligent young MAN, with knowledge of Herbaceous and Hardy Plants generally.—HEWITT AND CO., Solihull Nurseries, Birmingham.

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WANTED, an energetic Man as TRAVELLER. Salary and Commission.—Apply, stating experience, salary, and full particulars, to H. ENGLISH, Clevedon Nurseries, Clevedon.

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WANTED, a sharp, active young MAN, well up in all branches. Will have to take part in Management of Large Shop, where a brisk counter trade is done; take journeys, and assist with books. To a suitable man every encouragement will be given, and Partnership might be offered. Salary, or salary and commission, on whole of turn-over. Only those need apply who have taken journeys before. Preference given to one with a knowledge of Lancashire and Cheshire. Interview will be arranged with suitable applicant. State full particulars.—S. J., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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GARDENER (Under).—Age 18; can have good recommendations.—J. BOURNE, Basing, Basingstoke.

GARDENER (Under), where others are kept.—Age 22; good character from present and previous situations.—E. C., Node Garden, Welwyn, Herts.

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JOURNEYMAN (First), or FOREMAN, in a Small Establishment.—Age 25; ten years' experience in good Gardens. Excellent character.—J. SLATER, Coldeast, Salisbury, Southampton, Hants.

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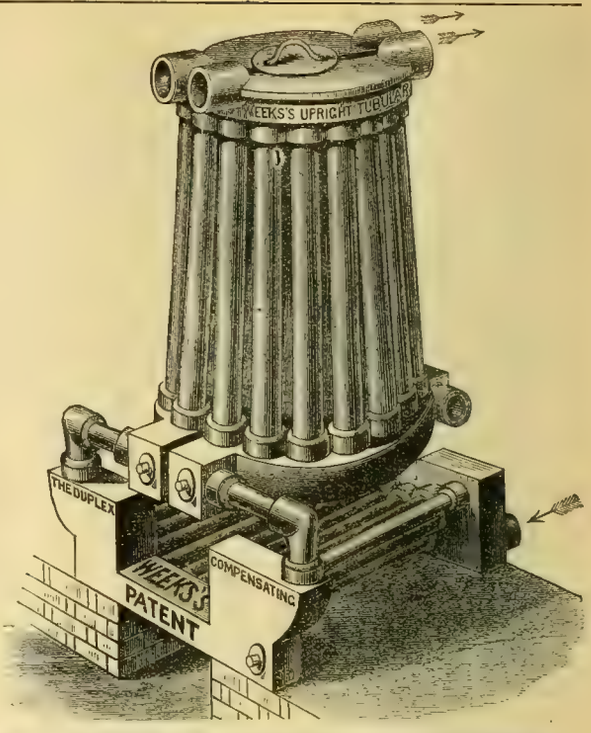
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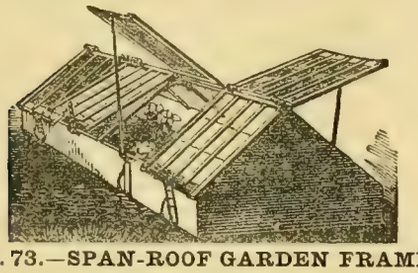
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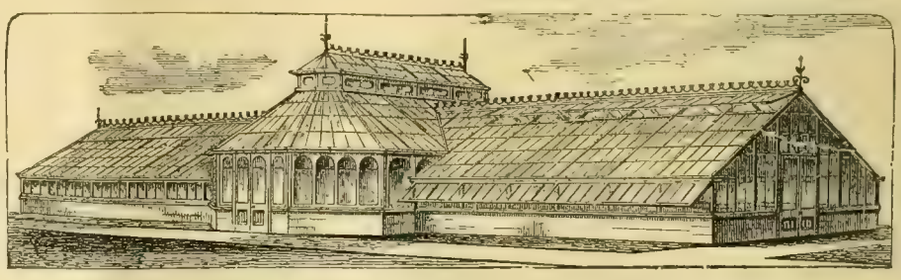
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2,000 ,, Cavendishii	5,000 Maidenhair Ferns in thumbs
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2,000 Carnations, Miss Joliffe and Gloire de Nancy	3,000 Solanums, well berried
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And other Stock.

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45,000

STOVE and GREENHOUSE PLANTS,

remarkably well-grown, and in the best possible condition, including

20,000 FERNS,

for the growth of which this Nursery is so famed, all being of the most useful market sorts, and amongst them many novelties.

10,000 TREE CARNATIONS,

comprising a fine lot of Mrs. Reynolds Hole, Mdle. Carle, A. Alexatierre, &c. A good lot of Old Crimson CLOVES.

2,000 TEA ROSES in Pots (extra strong),

embracing Maréchal Niel, Gloire de Dijon, and W. A. Richardson, with well-ripened growths from 15 to 18 feet long; also The Bride, Niphetos, Souvenir de un Ami, and others.

10,000 BOUVARDIAS,

including President Cleveland, Mrs. Robt. Green, Candidissima, and all the best double and single varieties.

3000 GENISTAS, fine bushy Plants.

Solanums (well berried), Crotons, Dracænas, Eucharis Amazonica, Aralias, Statices, Euphorbias, Ampelopsis Veitchii, Clematis, Ivies, Cyclamen, Primulas, Camellias, Azaleas, Ficus, Palms, &c. Genistas and Bouvardias for growing on, and a great variety of other useful Plants.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Lea Bridge Road, E.

ANNUAL UNRESERVED SALE of fine Winter-flowering HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL by AUCTION, on the Premises, the Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway), on WEDNESDAY, September 17, at 11 o'Clock precisely, in consequence of the large number of lots, a large quantity of WINTER-FLOWERING and other PLANTS, including:—

20,000 Erica hyemalis	2,000 Maréchal Niel, Gloire de Dijon, William Allen Richardson, 8 to 10 feet; Niphetos, and other Tea-scented Roses in great variety
1,000 Tree Carnations	
4,000 Erica gracilis	
6,000 Genista fragrans	
6,000 Ampelopsis Veitchii, 4 feet	1,000 Deutzia gracilis, established in pots, for earliest forcing
1,000 Epacris	
2,000 Lapageria rosea superba	6,000 Bouvardias, including a lot of "President Cleveland."
6,000 Cyclamen persicum (Fraser's superb strain)	
2,000 Passiflora Constance Elliot and cœrulea	5,000 Solanums, beautifully berried
2,000 Variegated and other Ivies	1,000 Clematis indivisa lobata
6,000 Clematis Jackmanii, and other best-named sorts	

and a great number of Erica ventricosa, Cavendishii, caffra, large-flowering white Jasmines, Stephanotis floribunda, Boronia megastigma, Escallonia macrantha, Gum Cistus, Japanese Honeysuckles, Ceanothus, Broad-leaved Gold and Silver Euonymus, Magnolias of sorts, Figs strong in variety, India-rubber plants, Palms, Ferns, a few nice Araucaria excelsa, and other plants. Also a large quantity of young Heaths and Genistas, for potting on.

The whole of the Stock is in the best condition, and ready for immediate sale.

HOE STREET STATION, on the Great Eastern Railway, is within a short distance of the Nursery. Trains from Liverpool Street every half-hour.

May be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Lee, Kent, S.E.

GREAT ANNUAL TRADE SALE, to commence punctually at 11 o'Clock, there being upwards of 1200 lots to sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons to SELL by AUCTION, on the Premises, The Burnt Ash Lane Nurseries, Lee, Kent, S.E. (adjoining the Railway Station, South Eastern Railway), on TUESDAY, September 16, at 11 o'Clock punctually, without reserve, a remarkably well-grown stock of

WINTER-BLOOMING HEATHS,

all beautifully set with bloom-buds; and other

STOVE and GREENHOUSE PLANTS,

consisting of—

20,000 Erica hyemalis	1000 Boronia megastigma, and others
5,000 ,, gracilis	
2,000 ,, Cavendishii	400 Solanum capicastrum, well berried
1,000 ,, coccinia minor	
600 ,, caffra	1000 Adiantum cuneatum
600 ,, melanthera	1000 Lomaria gibba
1,000 Grevillea robusta	800 Tea Roses in pots
1,000 Ampelopsis Veitchii	500 Aralia Sieboldii
500 Acacia armata	500 Clematis Jackmanni
1,000 Palms, of sorts	550 Crotons, beautifully coloured
1,500 Epacris, to name	
5,000 Genistas	

with a large quantity of Epacris and Boronias of sorts. Young Erica hyemalis, E. Cavendishii, E. gracilis, and others; also Genistas, in 60-pots, for growing on.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—An inspection is invited of the Plants included in this Sale, the Heaths being particularly fine, and the whole of the Stock of the same first-class character as in previous years.

Enfield Highway, N.

TWENTY-SECOND ANNUAL TRADE SALE of STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Brimsdown Nursery, Green Street, Enfield Highway, N., adjoining the Brimsdown Station, Great Eastern Railway, on THURSDAY, September 18, at 11 o'Clock punctually, in consequence of the unusually large number of lots, by order of Mr. John Maller, without reserve, upwards of 1200 lots of remarkably well-grown STOVE and GREENHOUSE PLANTS, mostly in No. 48-pots, and fit for immediate Sale, consisting of

15,000 WINTER-BLOOMING HEATHS,

including hyemalis, gracilis, Cavendishii, Ventricosas in variety, &c.

5000 Solanums, exceptionally well-grown and berried.

5000 Ferns, Adiantums, Lomarias, Pteris, &c.

3000 Tree and other Carnations, leading varieties, including Mrs. Moore and Duke of Fife.

1000 Epacris to name	1000 Stove and Greenhouse Climbers, including—Dipladenias of sorts, Allamandas, Bougainvilleas, Stephanotis, Tacsonias, &c.
5000 Bouvardias, including President Cleveland, Vulcan, and other best varieties	
1000 Grevillea robusta	1000 Passifloras
5000 Genistas	2000 Ampelopsis Veitchii
500 Double White Primulas	
500 Crotons, beautifully coloured	

500 Euphorbia Jacquiniflora, Chrysanthemums, new varieties, Palms, Ficus, Large Camellias and Azaleas for cutting, many thousands of small Ericas, Genistas, Ferns, &c.

Large quantities of Acacias, Gardenias, Geraniums, Cyperus, Poinsettias, Euonymus ovatus aureus, &c., suitable for the Trade and other extensive Buyers.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and also at the Brunswick Nursery, Tottenham, and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

N.B.—The whole of the Stock is in first-rate condition, the Ericas being especially well set for flower, and the Solanums unusually well berried.

Leytonstone, E.

ABSOLUTE CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the premises, The American Nurseries, Leytonstone, adjoining the Leytonstone Railway Station, on FRIDAY, September 19, at 12 o'Clock to the minute, without the slightest reserve (the land being required for other purposes), the whole of the choice Stove and Greenhouse Plants, consisting of Camellias, Azaleas, Dracænas, Pandanus,

10,000 CHOICE PALMS IN VARIOUS SIZES,

including Kentias, Cocos Weddelliana, Areca lutescens, Latania borbonica, Seaforthias, and Areca Baueri.

A FINE STOCK OF THE BEAUTIFUL NEW VARIEGATED FICUS,

double white Primulas, Lapageria alba, Bouvardias, a fine assortment of choice Ferns, a small collection of Exotic Orchids, fine pot Roses, with strong canes of Maréchal Niel and Gloire de Dijon; also

ELEVEN GREENHOUSES

containing

3000 FT. OF 4-IN. HOT-WATER PIPING,

Boilers, about 1500 feet of slate slab staging, also the erection of Stabling, Bay Mare, and Ayrshire Cow, capital spring market Van with covered top, a Phæton, a capital Band Saw for hand or steam-power, and numerous other articles.

The stock may be viewed the day prior to the Sale. Catalogues may be had on the premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B.—The whole of the Out-door Nursery Stock will be Sold by Auction during the coming season. See dates in notice of Forthcoming Sales.

Sunningdale.—Preliminary Notice.

Without the least reserve.

SIX DAYS' ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. C. Noble, who is under notice to quit all lands held by him under St. John's College, Cambridge, at Christmas next.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, on MONDAY, October 6, and five following days, without reserve, several acres of unusually well-grown NURSERY STOCK, carefully prepared for removal.

Fuller announcements will appear in due course.

Forthcoming Sales of Nursery Stock.

Important to Noblemen, Gentlemen, Nurserymen, Landscape Gardeners, and others contemplating planting during the coming season.

MESSRS. PROTHEROE AND MORRIS respectfully give notice that they have been instructed to conduct the following SALES of NURSERY STOCK:—

OCTOBER 1, 2, and 3.—At the NURSERIES, WINDLESHAM, near BAGSHOT, SURREY, by order of Mr. Richard Mason, three days' CLEARANCE SALE of the Stock growing upon a part of the Nursery, this portion of the land having to be given up at Christmas next.

OCTOBER 6, 7, 8, 9, 10, and 11.—At the SUNNINGDALE NURSERIES, SUNNINGDALE, by order of Mr. Charles Noble, absolute CLEARANCE SALE of several acres of NURSERY STOCK, the Land having to be given up at Christmas next.

OCTOBER 13, 14, 15, and 16.—At the NURSERIES, CART-HORSE LANE, WOKING, by order of Mr. R. Collyer, four days' Sale.

OCTOBER 20 and 21.—At the PILTDOWN NURSERIES, MARESFIELD, near UCKFIELD, by order of Louisa, Lady Shelley, the remaining NURSERY STOCK, the Land having been let.

OCTOBER 20, 21, 22, and 23—At the AMERICAN NURSERIES, LEYTONSTONE, absolute CLEARANCE SALE of the first portion of the EXTENSIVE STOCK.

OCTOBER 22.—At the ST. MARTIN'S NURSERY, CANTERBURY, by order of Mr. J. Kennett. First portion.

OCTOBER 27.—At the NURSERY, CLIFFE, near ROCHESTER, ANNUAL SALE of FRUIT TREES, grown specially for the Auction, by order of Mr. W. Horne.

NOVEMBER 3, 4, 5, and 6.—At the celebrated AMERICAN NURSERIES, BAGSHOT, by order of Messrs. John Waterer & Sons. Four days' Sale.

NOVEMBER 4.—At the HALE FARM NURSERIES, TOTTENHAM, by order of Mr. T. S. Ware. Annual Sale.

NOVEMBER 10, 11, 12, 13, 14, and 15.—At the EXETER NURSERIES, EXETER, absolute CLEARANCE SALE, six days, by order of Messrs. Lucombe, Pince & Co., who are relinquishing the business.

NOVEMBER 17, 18, and 19.—At the AMERICAN NURSERIES, LEYTONSTONE, unreserved CLEARANCE SALE of the second portion of the EXTENSIVE STOCK.

IN OCTOBER.—At the NURSERIES, GROOMBRIDGE, by order of Mr. E. Hollamby. Two days' Sale.

Other Sales are in course of arrangement, and will be duly announced.

Intending Purchasers of Nursery Stock during the coming season will find these Sales an excellent medium for securing well-grown Stock, and the Auctioneers will be pleased to forward a regular supply of CATALOGUES on application.

Auction Rooms and Estate Offices, 67 and 68, Cheapside, London, E.C.

MESSRS. PROTHEROE AND MORRIS have PERMANENT LISTS for their various SALES, to which they are glad to add names at any time for a regular supply of Catalogues, on learning the nature of the requirements of intending purchasers.

These Lists are compiled at an expenditure of great labour, and with these facilities, together with the advantages of advertising in their Public Sale Rooms (which are so largely attended by all classes of purchasers), they are enabled to give exceptional publicity to all Sales entrusted to them.

London, W.

To Small Capitalists. No Stock. Good Neighbourhood.

COMPACT NURSERY.—Several Greenhouses, Dwelling-house. Rent only £45. Price for Glass on application. Any reasonable offer entertained.

Apply to PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

London (15 Miles from).

TO BE LET, on Lease, well-known NURSERY, 3 acres; 18 Vineries, Peach, Cucumber, and Tomato Houses; 9-roomed Dwelling House, Stable, and Trade Buildings. Rent, £200. Price for crops and stock, £600.

Full particulars of Messrs. PROTHEROE AND MORRIS, Horticultural Auctioneers, 67 and 68, Cheapside, London, E.C.

Wilmington, near Dartford.

CHEAP FREEHOLD LAND.

For Sale, by order of the Mortgagees, to wind up the Estate. Suitable for Nursery Purposes and for the Erection of Glass.

Possession given on payment of small deposit and balance payable by easy instalments.

MESSRS. PROTHEROE AND MORRIS have for SALE in this district several Acres of FREEHOLD LAND. To be sold in plots of 25 feet frontage, by depth of 225 feet, or in larger portions. Full particulars on application. 67 and 68, Cheapside, E.C.

Dutch Bulbs. Dutch Bulbs.

MONDAY, WEDNESDAY, and SATURDAY NEXT.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, WEDNESDAY, and SATURDAY NEXT, September 1, 3, and 6, at half-past 12 o'Clock precisely each day, several hundred lots of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, JONQUILS, SCILLAS, SNOWDROPS, and other BULBS, just received from some of the best known farms in Holland, and lotted to suit the Trade and private Buyers. Also Early White Roman HYACINTHS, Paper White and Double Roman NARCISSUS, and LILIUM CANDIDUM, &c., for Forcing in quantity, &c.

On view mornings of Sale, and Catalogues had.

Thursday Next.

CHOICE ESTABLISHED ORCHIDS, SOME IN FLOWER.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 4, at half past 12 o'Clock precisely, a choice COLLECTION of ESTABLISHED ORCHIDS, some in flower and bud, including

Cypripedium expansum
" amabile
" Schröderæ
" Kirchtoffianum
" Roezli latifolia
" Schomburghianum
" orphanum
" Hornianum
Angræcum ichneumonium
" Rollissoni
Brassia Antherotes
Cypripedium robusticum
Cypripedium chlorops
" insignis Halli
" grande, magnificent specimen
" Sedeni candidulum, the finest variety
" Siamense
Cattleya bicolor Measuresiana
Lycaste leucantha
" Skinneri alba

Also large importations, in splendid condition, of Lælia majalis, and L. autumnalis and varieties, and other imported Plants from Brazil, &c.; ORCHID BASKETS, &c.

On view morning of Sale, and Catalogues had.

Every Thursday.—Dutch Bulbs.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY NEXT, and every THURSDAY throughout the season, at half-past 11 o'Clock A.M., large consignments of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland; also Roman HYACINTHS and Paper White NARCISSUS. Lotted to suit all buyers.

On view morning of Sale, and Catalogues had.

On WEDNESDAY and FRIDAY EVENINGS, at half-past 5 o'Clock, SALES of Choice CUT FLOWERS. Entries invited.

Nursery Stock Sales conducted and Valuations made.

Auction Rooms and Offices, 6, Phillips Street, Birmingham.

Earlsfield, St. Ann's Hill, Wandsworth.

By Order of the Executors of the late Robert Davis, Esq., J.P.

QUANTITY of STOVE and GREENHOUSE PLANTS, including Palms, Stephanotis, Lapageria rosea, Hoyas, Azaleas, Camellias, Arums, Maidenhair and other Ferns, &c.; also 160 Choice Chrysanthemums, grown from the most expensive and best-known sorts; 2 Acres of Turf, Green's LAWN-MOWERS, ROLLERS, GARDEN TOOLS, BARROWS, FLOWER-VASES, FIGURES, 350 Iron HURDLES, 2500 Garden Edging TILES, HORSES, CARRIAGES, pure-bred Alderney and Devon COWS, well-bred POULTRY, FARMING IMPLEMENTS, and a multiplicity of useful Effects.

MESSRS. A. W. TAYLOR AND CO. will SELL the above by AUCTION on SATURDAY, September 13, at 12 o'Clock to the minute.

Catalogues of the Auctioneers, 119, High Street, Putney.

WANTED, TO RENT, a SMALL MARKET NURSERY. Western Counties preferred.
W. R., Claverton Down, Bath.

TO BE SOLD, Lease and Fixtures of a capital MARKET NURSERY, area one acre; 11 good Houses, 200 Pit Lights, Dwelling House, Stabling, and every convenience. Cheap rent. Eight miles from Covent Garden.

Apply, in first instance, to 4, Brook's Cottages, Bradley Road, Enfield Lock.

FOR SALE, a NURSERY, within 10 miles of Covent Garden, containing about 2 acres, 700 feet run of Glass, Pits, Potting Shed, Stable, Cart Shed, &c. New River water laid on in all houses and ground.

Apply, F. H., 3, Irene Villas, Fairfield Road, Upper Edmonton.

FOR SALE, 7 acres of FREEHOLD LAND, well stocked with choice Cob Nut trees (Webb's), also Apple trees are in full bearing. Together with a convenient well-built Cottage and outbuildings, situated about one mile from Liphook Station, Hants, on the South Western Railway.

For further particulars, apply by letter to Mr. LILLYWHITE, Ropley, near Alresford, Hants.

WANTING TO SELL at once, a good SEED BUSINESS in North Notts. Last six years, £900 per year. Fixtures and stock at valuation.

N. N., 41, Wellington Street, Strand, W.C.

FOR DISPOSAL, a very old-established and extensive SEED BUSINESS, Market Town, West of England. Splendid opportunity for adding Corn, Nursery, Florist, &c., business to same. Principals only treated with.

Apply, in first instance, to SEEDS, 7, Green Street, Bath.

East Retford, Notts.

TO BE SOLD or LET, in consequence of the death of the Proprietor, A FIRST-CLASS FREEHOLD NURSERY, consisting of Glass Houses, standing on ground, 36 by 31 yards, and comprising the following:—1 large Span House, 78 by 19 ft.; 4 Span Houses, each 66 by 10 ft.; 3 Lean-to Houses, 70 by 9 ft.; 1 Span Propagating Pit, 34 by 10 ft.—For further particulars, apply to F. W. HODSON, 8, Market Place, Retford.

NURSERY FOR SALE. No reasonable offer will be refused, as the Proprietor is old, and determined to sell at almost any price. Fine saleable outdoor stock.

Apply to Z., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Suffolk.

Capital opening for a pushing Flower and Fruit Grower in Established Business, capable of Extension.

TO BE LET or SOLD, a NURSERY, with two new well-arranged Greenhouses, 100 feet by 16 feet, and 180 feet by 10 feet; Forcing-house, &c. Stock at Valuation.

Apply, JOS. GREENER, 101, Leadenhall Street, London, E.C.

TO BE LET, 1 to 10 acres of GRASS LAND, suitable for Nurserymen and others, on Lease for 7, 14, or 21 years. Rent from £8 to £12 per acre, with the option of Purchasing the Freehold within the first 7 years. No tithe. Near the main road Enfield Highway, about 9 miles from London.

Apply, H. MOORE, 59, Bishopsgate Street Within, E.C.

TO LET, a well-established NURSERY, about 12 acres in extent, well stocked and in fine condition, situated near a large city.—Full particulars on application to A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GRAND EXHIBITION
OF
HOME-GROWN HARDY FRUITS
IN THE
GUILDHALL, LONDON,
OCTOBER 6, 7, and 8, 1890.

THE WORSHIPFUL COMPANY OF FRUITERERS

being desirous of Promoting the Cultivation of **USEFUL HARDY FRUITS** in the **HOMESTEADS** and **COTTAGE GARDENS** of Great Britain, have organised an Exhibition to be held as above, when they will offer for competition:—

MONEY PRIZES amounting to over £200,
GOLD, SILVER-GILT, and SILVER MEDALS, and FRAMED CERTIFICATES of the Company.

The above Prizes will be offered for Exhibits of Fruit by COTTAGERS, TENANT FARMERS, AMATEURS, and GARDENERS in three geographical divisions in England and Wales.

The Framed Certificates of the Company will be given for exhibits by Trade Growers and Nurserymen.

Prizes will also be offered for exhibits of Jams and Preserves by Manufacturers, and also, in a separate class, for home-made Jams and Preserves.

It is hoped that all who are interested in Fruit Culture will make this Exhibition known in their districts.

For Schedules and all other particulars, apply to the Clerk to the Company,

Mr. O. C. T. EAGLETON,
40, Chancery Lane, London, W.C.

London County Council.

TENDERS ARE INVITED for the Work of LAYING-OUT the TENCH STREET RECREATION GROUND, Wapping. Persons Tendering will be required to declare in their Tender that they pay such rates of wages and observe such hours of labour as are generally accepted as fair in their trade. Persons desirous to submit Tenders may obtain a Copy of the Specification, Form of Tender, and other particulars, on personal application at the Office of the Architect of the Council, at Spring Gardens, during office hours, until MONDAY, the 29th day of September, 1890. The Tenders, which must be on the Form supplied from this Office, and be addressed to "The Clerk of the Council," and endorsed "Tender for Laying-out Tench Street Recreation Ground, Wapping," are to be delivered at the Office before 5 o'Clock on the last-mentioned day, and no Tender will be received after that hour. Any Tender which is not fully filled up in every particular will be rejected. The Council does not bind itself to accept the lowest or any Tender.

H. DE LA HOOKE, Clerk of the Council.

Spring Gardens, S.W.—29th of August, 1890.

DAILY PARCELS EXPRESS SERVICE to the CONTINENT, *vid* Queenborough, Flushing, Kaldenkirchen.

This Parcels Service, in direct connection with the German and Austro-Hungarian Posts, is specially adapted for the rapid and regular despatch of Plants, Bulbs, &c. No Certificate required for Germany. Tariffs free on application. Goods also accepted for Conveyance by *Petite and Grande Vitesse*.

BEST, RYLEY AND CO., 88, Bishopsgate Street, London, E.C.
Receiving Office at Holborn Viaduct Station.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

NEW DESCRIPTIVE PRICED CATALOGUE

Post Free on application to

THE VINEYARD AND NURSERIES,
GARSTON, near LIVERPOOL.

FOR SALE, 50,000 COCOS WEDDELIANA, strong plants, fit for 48's, at 75s. per 100. LATANIA BORBONICA, 40s. per 100. 100,000 FERNS, in thumbs, ready for 48's—PTERIS, ADIANTUMS, POLYPODIUMS, &c., in mixture, £5 per 1000; ADIANTUM CUNEATUM, LOMARIA GIBBA (true), POLYPODIUMS, and PTERIS TREMULA, large plants, in 48's, fit for present use, 50s. per 100. Package free and on rail, for Cash with order to—

JAMES WINGFIELD,
Widmore Hill Nursery, Bromley, Kent.

FERNS! FERNS!! FERNS!!!—Trade offer. Great Annual Sale of Surplus Stock; 100,000, in 25 sorts, Greenhouse and Stove, Pteris, Adiantums, Polypodiums, Cyrtomiums, Polystichums, &c.; 30,000 Pteris cretica cristata, fine bushy stuff, soon make 48 if potted at once; 10,000 Adiantum cuneatum, bushy stuff, all at 12s. per 100; store Ferns, variety, 6s. per 100, 50s. per 1000. Packed free, cash with order.

J. SMITH, The London Fern Nursery, Loughboro' Road, S.W.

SUTTON'S BULBS

FOR PRESENT PLANTING.

TO FLOWER at CHRISTMAS.

SUTTON'S Extra Large Early Roman HYACINTHS.
Price, 3s. 6d. per dozen; 25s. per 100.

LARGE-FLOWERED PAPER WHITE NARCISSUS.
Price, 3d. each; 2s. per dozen.

SUTTON'S Collections of EARLY FORCING BULBS.
10s. 6d., 21s., 31s. 6d., and 42s. each.

SUTTON'S BULBS
GENUINE ONLY DIRECT FROM READING.

All Parcels of Bulbs value 5s., Carriage Free.

PLANTING SEASON.

HARDILY-GROWN
FOREST, FRUIT,
& ALL OTHER
TREES & PLANTS,
EVERGREENS, ROSES, &c.
NURSERIES 400 ACRES.
VERY EXTENSIVE STOCK. Inspection Invited.
Priced Catalogues Gratis & Post Free.
DICKSONS (LIMITED) THE NURSERIES **CHESTER.**

BULBS—BULBS—BULBS.—Our stock of Dutch Bulbs is quite ready for inspection. Customers are at liberty to come and select themselves at the—
NEW HAARLEM BULB WAREHOUSES,
34, Mansell Street, Aldgate, City, London.
Proprietors—MICHAEL RAINS AND CO.
Reg. Tel. Address—"BIOTICUS, London." Established 1856.
CATALOGUE on application.
Named HYACINTHS, 2s. 6d. per doz. 1st size Bulbs of any sort.

SPECIAL OFFER of FERNS for CASH.—Extra strong, in thumbs, for immediate Potting, in the following varieties:—Pteris cretica, tremula, cretica cristata, alba lineata, hastata, serrulata, cristata compacta, and Doryopteris palmata. Also a fine lot in 48's, Pteris cretica, cretica cristata, serrulata cristata compacta, Polypodium, Dicksonia antarctica, and Aralia Sieboldi. Price for thumbs per 100 or 1000, and 48's per 100 on application. Inspection invited by
R. PENGELLY, Dyson's Lane, Upper Edmonton.

IMMENSE STOCK of ORCHIDS.—Best Value in the Trade. Must be cleared to make room for Importations. Great opportunity. Established but unflowered plants. Very valuable varieties are certainly to be obtained, and great bargains. Summer Special Offer now ready, affording a paying investment to any one with glass at command, which should not be overlooked—such plants may never again be offered to the public and the trade.
IMMENSE IMPORTATION of that most lovely, free-flowering Orchid, CATTLEYA GASKELLIANA, just to hand. Plump bulbs, leaves green, and dormant eyes; really in splendid condition. Collector states many white ones are to be found in the consignment.
ORCHID PEAT, best in the Trade, 8s. per sack, carriage forward. SPHAGNUM MOSS, 7s. per sack; per bushel bag, 2s.
Apply to WM. GORDON, The Nurseries, Twickenham, Middlesex.

BARR'S AUTUMN CATALOGUES, free on application.
BULBS OF FINEST QUALITY for all seasons, including many rare and beautiful Bulbs and Tubers.
DAFFODIL CATALOGUE, contains the only complete collection of these beautiful hardy spring flowers, with a List of cheap and showy sorts for large plantings.
PLANT CATALOGUE, describing the best Hardy Herbaceous Perennials for Borders, Rockwork, and Cutting.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

STRAWBERRIES for Autumn Planting.
Strong runners from open ground.
LAXTON'S NOBLE, 5s. per 100, £2 per 1000.
" A. F. BARRON, 2s. per dozen.
" COMMANDER, 2s. per dozen.
" LATEST OF ALL, 5s. per dozen.
Other leading sorts at 3s. 6d. per 100.
JAMES HODGES, Springfield Nursery, King's Heath, Birmingham.

STRAWBERRIES.—A fine Collection of the best varieties can be supplied. Orders should be booked now. Descriptive CATALOGUE post-free.
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50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high, 15s. to £10 per 100, free on rail.
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Carriage Paid. Strong, healthy trees, the finest that money can buy. Roses wonderfully cheap. Cordons a spécialité. Before ordering be sure to write for our Illustrated CATALOGUES.
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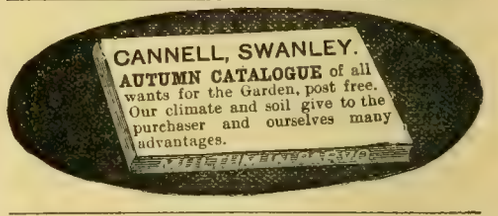
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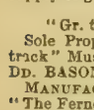
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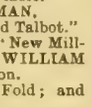
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15, PRINCES STREET, EDINBURGH, *July* 15, 1887.—"Dear Sirs, I have thoroughly tested a sample of a new Insecticide which you were so good to send me. At the rate of 1 oz. to a gallon of water at a temperature of 95°, I find it kills Green Fly immediately. Double this strength, or 2 oz. to a gallon at 120°, seals the fate of Scale of all sorts in a few seconds; while 3 oz. to gallon at same temperature effectually dissolves Mealy Bug, and so far as I have yet observed, without the slightest injury to leaf or flower, and it is withal a most agreeable compound to work with. All our insect remedies are applied through common syringe, or garden engine, a much severer test of efficiency than when applied by hand-washing or spray.—I remain, dear sirs, yours truly. (Signed) A. MACKENZIE," of Messrs. Methven & Sons.

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Tobacco Paper is often Useless and Ineffectual, BUT

CAMPBELL'S FUMIGATING INSECTICIDE

is simple to use and free from unpleasant smell.

From Mr. G. WYTHES, *Syon Gardens, Brentford.*—"I am pleased with the Fumigating Insecticide. For Orchids I think it will be a great boon."

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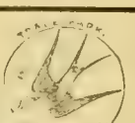
100 cubic ft.,	500 cubic ft.,	1000 cubic ft.,	2000 cubic ft.,
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Holds 40 gallons. Wrought-iron frame-work neatly painted. Galvanized tubes with tap to regulate flow. Gives spray 36 ins. wide. Price £4 net on rail Glasgow.

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Sample Bag sent free of cost.

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ROMAN HYACINTHS.

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Ditto ... ... 14s. per 100.
FINE NAMED VARIETIES ... ... 6s. to 12s. per doz.

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DOUBLE ROMAN ... ... 3d. each, 1s 6d. per doz.
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The following in strong young stuff for Winter Flowering, established in pots:—

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THE
Gardeners' Chronicle.

SATURDAY, AUGUST 30, 1890.

THE VICARAGE, SHIRLEY.

[See Supplementary Sheet.]

SOME two miles north-east of Croydon is Shirley, of which parish the Rev. W. Wilks is the vicar, and here is his garden. It is no part of our business to say aught about the church and the schools, save to say that they furnish indications of the same powers of work and organisation on the part of their vicar as have been so helpful to the Royal Horticultural Society. The churchyard is as carefully kept, if not more so, than the garden, which is not always the case under like circumstances. The garden we have come to see lies on the pebbly stratum that intervenes between the London clay and the Woolwich beds—those same pebble beds which have given their name to a Kentish parish not far off, well known as Chiselhurst, the "Chisel," signifying pebble. We are not learned in Anglo-Saxon, and hence are obliged to spell the word as it is spelt now. Hard by are the imposing Pine woods and park of Addington, concerning which all we need say at present is, that while the Scotch Pines are all flourishing, the Stone Pines, some twenty to thirty years old, are all dying or dead—a warning to planters.

The soil is dry—the level above the sea some 300 feet, so that the natural drainage is good, and the climatal conditions as favourable as they can be in the vicinity of London. But of what avail are such advantages if they are not turned to account? In some gardens it is evident enough that the plants are the first consideration. The garden exists for them. In others the general amenity of appearance is the main object, and the plants are selected and disposed accordingly. In the one the proclivities of the botanist, in the other the taste of the artist prevail. These are, of course, statements to be taken broadly and with allowance for exceptions, but as a matter of fact, one has usually little difficulty in assigning any particular garden to one or other of these two types.

Now, to which type shall we assign Mr. Wilks' garden? We begin to experience the difficulty

which every classifier has to face. If we place it in one group we do violence to some of its aspects, if we allot it to the other we do injustice to the others. What is to be done? Compromise seems to be the only resource, and we assure ourselves that this is right, that the garden in question is of a composite type. The owner has a real love of plants, a catholic love too, not one limited by the rigid sectarianism of the specialist, and he has an eye for the picturesque, an eye that prefers undulating surfaces, curving lines, variety of form and colour to the geometrical regularity, crude colouring and monotony of flower-beds. A broad lawn with scattered trees and specimen shrubs of varied habit is surrounded by shrubbery borders, faced with herbaceous plants. Very simple, is it not? and yet when we saw the garden on one day in June, we thought that we had never seen at one time, in an area of the same size, so many and such a varied assortment of plants in flower. Leaving out of consideration a rockwork like that at Edinburgh or Kew, to which there is nothing comparable at Shirley, we remain of the same opinion. The fact precludes the necessity of going into detail, for if we did so we should have to write a catalogue, and that is not entertaining to the personally uninterested reader.

Handsome shrubs and select herbaceous plants, these form the staple; but Mr. Wilks has his pet hobbies, and several of them too. The visitor receives his first intimation of that fact on catching sight of the collection of hardy Ferns filling up a portico to the house, besides we have vivid remembrance of Daffodils *hors ligne* exhibited from Shirley at the Daffodil Conference. They were all down at the time of our visit, but in full bloom then was a collection of Pæonies, consisting of fifty or sixty varieties. Imagine the sight; description is impracticable. There they were, of all hues, from pure white to the deepest crimson, one white one measuring 9½ inches across—a grand relation this for the Buttercup! Of course, we ought to have noted the names of these varieties, but we did not; to see and to gossip were pleasanter occupations, and withal more practicable just then than to analyse and note. The Pæonies would be followed by the Roses, dwarfs, without a standard among them, and placed like the Pæonies in a slip apart from the garden proper, where the soil, presumably, is stiffer, and where certainly a mulching affords both shelter and food alike to Rose and to Pæony. As to that other hobby—that which has made Shirley synonymous with Poppies—it is as exacting as ever. One "quarter" of the kitchen garden is given up to those which were sown in autumn, another quarter to those whose seed was committed to the ground in the spring, and others are to be seen here and there. We are not going to enlarge upon these lovely annuals—their history has been given in our pages by Mr. Wilks himself (March 9, 1889, p. 308, with figure). The loops of coloured wool affixed to some of the gorgeous beauties attest that the trained eyes of the raiser has found new shades of colour which await development, that the ideal has not yet been so fully realised, but that constant care results in steady progress.

While we ramble on, charmed with all we see, and interested in all we hear, the conversation naturally drifts ever and anon to the affairs of the Royal Horticultural Society. Those who have followed the fortunes of the Society well know that when it was at its very lowest ebb, and all was confusion, Mr. Wilks was one of those who boldly stepped forward, and insisting that horticulture only should be the aim and object of the Society, has worked from that time to this with such diligence, such directness of aim, and withal such never-failing courtesy and consideration for others, as to win the gratitude of those who have the interests of the old Society at heart. That, of course, must be gratifying to him to feel, but beyond this, we take it is the satisfaction that these labours have been attended with success. The Society has been pulled out of the slough; it has not yet reached its proper place, but it is on the high road to do so. It has turned the corner, says Mr. Wilks to us, "and if the horticulturists will but co-operate harmoniously, exercise a little patience and charity towards shortcomings, show a little sympathy with those who are working hard for the Society in place of carping at little oversights or matters of detail, concerning which diversity of opinion may well exist, the Society's influence for good will be greater than ever." "But," adds Mr. Wilks, "we do want more Fellows. The guinea subscription may have been a popular movement, but it has not yet been popular enough to be financially satisfactory. *Do* bring in some more members! When the Horticultural Hall is an accomplished fact—and we are determined, so far as in us lies, that it shall be—no doubt our muster-roll will be largely added to; but we cannot wait for that, and sadly need a larger present income to maintain Chiswick as it ought to be maintained, and to carry out our programme." May we add emphatically, not ironically, we heartily wish the Society may get it.

We had written thus much when the last number of the *Journal of the Royal Horticultural Society* came to hand, and there, from Mr. Wilks' own pen, is an account of his garden, that, had we seen it before, had precluded the necessity of our saying aught about it ourselves. As it is, we cite the following passage, which, we think, confirms what we have already said, and, at any rate, gives the writer's notions as to what a garden should be:—"A good expanse of bright green grass, shaded with one or two large trees, and dotted about hap-hazard (or rather with the artfulness which conceals the art) with shrubs and large-growing herbaceous plants, like the Acanthuses, the Rhubarbs, and the Fennels, and good clumps of Pampas-grass, the Bamboos, Arundo conspicua, and such-like, and then the whole surrounded by wide borders, some sunny, and some shady, and all backed up with shrubs, such as Rhododendrons, Kalmias, Bays, Azaleas, Portugal Laurels, Lilacs, Philadelphus (commonly known as Syringas), Laurustinus, Weigelas, Hollies, and so on—that is my idea of a good serviceable English pleasure-garden—a garden with abundant variety of form and colour, of flower and foliage; a garden in which every day finds something fresh to look at, to admire, and to watch; a garden where every step brings variety, and every season its own especial charm; a garden not only to take pleasure in, but to be itself the pleasure." How could we better bring this note to an end than by citing words such as these, which will command the sympathies of all gardeners.

New or Noteworthy Plants.

NEPENTHES STENOPHYLLA, *Mast., sp. n.**

In the rich collection of Nepenthes grown by Messrs. Veitch is a species imported from Borneo, and at first considered to be a form of N. Curtisi, from which, however, it differs in several particulars. The plant is free-growing, with narrow, elliptic, nearly glabrous leaves, sharply pointed at each end, and scarcely at all clasping the stem at the base. The pitchers measure from 6 to 7 inches in length by about 1½ inch in the broadest portion. They are green, thickly mottled with longitudinal dark reddish-purple spots, cylindric, somewhat dilated in the lower third, narrowed in the middle, and provided with two moderately deep laciniate-fringed wings, which extend half-way down the pitcher. The mouth of the pitcher is very oblique, with a narrow, revolute, finely striated rim. The lid of the pitcher is much smaller (in the adult stage) than the mouth; ovate-orbicular, subcordate, two-nerved, glandular on the inner surface, and with a central knob-like projection on the inner side at the base. The inner surface of the lower third of the pitcher is glandular, the remaining portion being smooth and glaucous. In N. Curtisi the inner surface is glandular for nearly its whole extent. We shall give a figure of the plant in a subsequent issue.

Lindneria fibrillosa, *Durant and Lubbers, in Bull. Soc. Bot. France*, vol. 36; *Report of Paris Congress*, p. 117, t. 18.

This remarkable new genus of Liliaceæ was discovered in Damara Land in 1886 by the Belgian traveller after whom it is named, and was flowered for the first time in 1889 at the Royal Botanic Garden in Brussels. It has a large bulb, crowned with bristles, six to eight fleshy erect lanceolate leaves above a foot long, a naked stiffly-erect peduncle, much overtopping the leaves; a dense raceme of sixty or eighty greenish gamophyllous flowers 1½ inch long, with obtuse segments, united in their lower two-thirds, and short stamens inserted at the throat of the perianth-tube. Its nearest affinity appears to be with Galtonia. *J. G. Baker.*

* *Nepenthes stenophylla*, sp. n.—Glabra vel ad nervos hirtella; caule tereti subglabro; foliis 18—20 × 3—4 cm., coriaceis elliptico lanceolatis basi in petiolum canaliculatum, 2 poll. long., subamplexicaulem angustatis, apice in cirrum hirtellum rigidum crassite pennæ columbinæ desinentibus, subtus nervo medio prominente nervisque quobus parallelis intra margines parum revolutas; ascidiis 16 cm. long, 3 cm. lat., viridibus sæcus longitudinem irregulariter purpureo maculatis, medio parum angustatis versus basin ventricoso-dilatatis; antice alatis, alis modice profundis laciniato-fimbriatis ultra medium ascidii vix productis, ore obliquo postice producto, peristomio 2—3 mm. lat., revoluto rubro æqualiter tenuiter que costulato, operculo demum ore multo minore cordato ovato, 2-nervio medio intus basin versus processu unciformi parvo prædito glandulisque paucis, dorso ad basin processu filaceo calcariformi munito, ascidii facie interna ad basin spatio 4—5 cm. glandulosa, superne tenuiora glandulosa lævi glauca. *M. T. Masters.*

Fruit Register.

EARLY BÜHL PLUM.

By the same mail I beg to hand you a sample of fruits of the Bühler Frichzwetschi. This Plum is a very early variety; it begins to ripen by the end of July or beginning of August, and stands travelling very well. During the harvest, ten to twelve waggon-loads are despatched every day from the Bühl station. They go to many parts of Germany, Switzerland, to Holland and Belgium, and even as far as London. The tree is a strong grower, and a sure and heavy cropper. The bloom stands 3° of frost without being injured; therefore it seldom misses a crop.

About the origin of this variety, I learned that it was first found in the small village of Rappel, near the Badish town Bühl, where a few strong trees, about forty years old, are still to be found. The tree propagates itself freely by offsets. In fact the people hereabout say grafted trees do not last' long; they grow all right for a few years, then they suddenly die off without any visible cause. Besides supplying the markets of the neighbouring towns, especially that of Baden-Baden, the fruits were formerly chiefly used for the making of brandy, but now the demand for them as a dessert fruit for exportation has so increased that it pays better to sell them on the trees. The demand for this fruit is increasing with every year, and therefore the peasants keep on planting them largely; they say it pays better than growing wine, which has been a complete failure these last ten years. *G. W. Uhink, Lichtenthal, near Baden-Baden.* [The fruits sent are rather below medium size for Plums, slightly pointed at each end, skin black, heavily bloomed, and of a good brisk flavour. It is a nice variety, well worthy of cultivation for its earliness. Ed.]

A Hybrid Moss.—In the *Boletim da Sociedade Broteriana*, 1889, p. 222, edited by Professor Henriques, of Coimbra, a bigeneric hybrid between Leptotrichium subulatum and Pleuridium subulatum is described. The two genera are usually placed wide apart in the scheme of classification.

MANURIAL VALUE OF WOOD ASHES.

Large quantities of unleached wood ashes are now brought into Connecticut yearly from Canada and the north-western States of America, and are sold for from £2 to £3 per ton. Ashes vary a great deal in composition, but the following data show the average value in a manurial point of view of unleached wood ashes, analysed by Dr. Goessmann, of Massachusetts, between the years 1868 and 1889 (*Rep. Mass. Ex. St.* 1888, p. 202, and *Bull.* 33).

Average percentage Composition of Wood Ashes.

	Average	Maximum	Minimum
Potash	5·5	10·2	2·5
Phosphoric acid	1·9	4·0	0·3
Lime	34·3	50·9	18·0
Magnesia	3·5	7·5	2·3
Insoluble matter	12·9	27·9	2·1
Moisture	12·0	28·6	0·7

The quality as well as the quantity of ashes from a given weight of wood depends very much on the kind of wood, as well as on its freedom from dirt and spurious matters. A valuable series of analyses recently made at the Georgia experimental station, and published in the Connecticut *Agricultural Report* for 1889, illustrates this. According to the analysis, 10,000 lbs. of several different varieties of wood (exclusive of bark, and having a uniform water content), contained the following quantities of the ingredients named. The samples were selected from trees growing as nearly as possible under like conditions, and of medium size:—

Ten Thousand Pounds of Wood contained Pounds of the Ingredients named.

	Dogwood, Cornus florida.	Sycamore, Platanus occidentalis.	Post Oak, Quercus obtusiloba.	Ash, Fraxinus americana.	Red Oak, Quercus rubra.	Hickory, Carya tomentosa.	White Oak, Quercus alba.	Magnolia, M. grandiflora.	Georgia Pine, Pinus palustris.	Yellow Pine, Pinus mitis.	Black Pine, Picea nigra.	Chestnut, Castanea vulgaris.	Old Field Pine, Pinus mitis.
Potash	19·0	18·1	16·9	14·9	14·0	13·8	10·6	7·1	5·0	4·5	3·0	2·9	0·8
Phosphoric acid	5·7	9·6	7·0	1·2	6·0	5·8	2·5	3·2	1·2	1·0	0·9	1·1	0·7
Lime	26·4	24·7	35·6	7·6	27·4	18·4	7·9	14·2	18·0	15·2	12·5	7·9	12·1
Magnesia ...	4·7	0·5	5·3	0·1	3·1	4·9	0·9	2·9	2·0	0·7	0·1	0·3	1·2

Percentage Quantities in the Pure* Ashes of the Woods.

Potash	28·0	23·2	21·9	46·0	24·7	28·6	42·2	19·5	15·4	19·7	14·3	18·1	3·9
Phosphoric acid	8·5	12·2	9·0	3·6	10·6	12·0	9·5	8·8	3·8	4·2	4·3	6·8	4·1
Lime	38·9	31·6	46·4	23·6	48·3	37·9	29·9	38·9	55·2	65·5	59·0	49·2	67·7
Magnesia ...	6·8	0·6	6·9	0·6	5·4	10·0	3·4	8·1	6·3	3·2	0·5	2·1	6·5

* Free from carbon and carbonic acid.

It appears from this statement that a very large proportion of the ashes of the trees mentioned above consists of lime, and this is chiefly as carbonate; the same material chemically as chalk or limestone, but finer, and so likely to be quicker in its action. It has long been known that chalk or limestone may benefit both very heavy and very light lands, making the one looser in texture and less apt to puddle, and the closer and more compact. It does this in the one case by separating the particles of sticky clay, and in the other by filling up the interspaces of a coarse soil. A writer on agriculture in the early part of the last century says of chalk, "it causes great fertility, especially on such lands as are apt to lose the riches of dung laid on them, and to forget in a little time that they have had any kind and indulgent benefactor. Here chalk is of excellent use to drive away such ingratitude, having a retentive quality to enclose and stay the salts."

It needs to be borne in mind that potash or soda-lye binds a clay soil, making it heavier, more tenacious and cloddy than before, and it may be, that on this account a heavy application of unleached ashes to a clay soil would either not help it at all or even damage it, while on light soils unleached ashes would be more beneficial than leached ashes. This favourable action on light soils has made ashes popular in districts where the soil is for the most part light and sandy. They "keep the soil moist," as the saying is, that is, by filling up the pores and compacting it, the soil water is made to rise more readily in it from the subsoil, bringing plant food with it and preventing draught. Besides this action of ashes, which is in large part at least mechanical, they also tend to correct "sourness" of the soil. In most cases this is not due to free acid, but to the presence of soluble iron-salts which in undue quantity are injurious to plants, and in smaller quantity show that the soil is stagnant, and needs aëration. Wood-ashes precipitate these salts, and open the soil that contains them to the air by making it looser in texture.

When potash-salts have been used in large quantities, and the potash has been largely taken up by a rapidly growing crop, as Tobacco, for instance, leaving most of the acid with which the potash was combined in the soil, ashes, or lime may profitably be used to neutralise it. The best Tobacco growers use stone lime or cotton-hull ashes largely on their Tobacco land with excellent results.

A third way in which wood ashes benefit land is in promoting nitrification; that process by which the more or less inert nitrogenous matters in the soil are made to yield nitrates, from which our field and garden crops obtain most, if not all, their nitrogen supply. This process is in some way connected with the life of low organisms, which are invariably present in fertile soils. Nitric acid can only be produced, however, when carbonate of lime is present to supply a base with which the acid may combine, and a soil mildly alkaline is the one most favourable to the growth of these organisms and the formation of nitrates. The report goes on to say it is clear that the quantities of potash and phosphoric acid present do not wholly measure the value of wood ashes, nor does it pay to buy them simply to supply a deficiency of these two ingredients in the manure. The quantities of potash and phosphoric acid in a ton of ashes costing £2 to £3, can be bought in the form of muriate of potash and superphosphate of lime much cheaper. But wood ashes temper certain soils, making them easier to work, moister, and more retentive of manure, correcting "sourness," promoting the solution of plant-food in them, and so preparing the way for the use of fertilisers which, directly applied, might be wasted. To accomplish these ends ashes have to be used in considerable quantity, and probably a single heavy dose would help more than the same quantity applied in fractions through three or four successive years if the object is to change the mechanical condition of the soil strikingly. *J. J. Willis, Harpenden.*

Hybrid Lily.—Mr. Anthony Waterer showed informally on Tuesday last, at the Royal Horticultural Society, flowers of a beautiful hybrid between L. auratum and L. speciosum rubrum. The flowers were of medium size, flat, pure white, with purple outgrowths.

LIST OF GARDEN ORCHIDS.

(*Continued from p.* 355, *vol. viii.*)

LÆLIA.

(18.) L. harpophylla, Rchb. f. in *Gard. Chron.*, 1873, p. 542; *Fl. Mag.*, n. s., t. 70; Warn. and Will., *Orch. Alb.*, iii., t. 117; *Gard. Chron.*, 1885, pt. 2, p. 405, fig. 89 (fruit); Sander's *Reichenbachia*, i., p. 89, t. 40; *The Garden*, xxiii., p. 116, t. 400; Veitch, *Man. Orch. Pl.*, pt. 2, p. 72, with fig.; *Bletia harpophylla*, Rchb. f., ex Sander's *Reichenbachia*, i., p. 89, in note.—South Brazil. It appears to have first flowered in this country in the collection of Mr. J. Day, at Tottenham, in April, 1867. The plant, with another in the collection of Mr. Rucker, of Wandsworth, had been in cultivation since 1865. Of late years it has become more common in collections, but its precise habitat does not appear to have been recorded.

L. Horniana, Rchb. f. = Lælio-Cattleya Horniana.

L. irrorata, Rchb. f. = Lælio-Cattleya Schilleriana.

(19.) L. Jongheana, Rchb. f., in *Gard. Chron.*, 1872, p. 425, fig. 128; *Bot. Mag.*, t. 6038; *Fl. Mag.*, n. s., t. 177; *Revue Hort.*, 1873, p. 291, with plate; Puydt, *Les Orch.*, p. 202, fig. 199 (a woodcut on p. 37 so named is an error—it is *Cattleya dolosa*, Rchb. f.).—South Brazil. Discovered by Libon about 1854, and sent to M. de Jonghe, at Brussels, after whom it is named. Nothing, however, appears to be recorded of it until 1872, when a plant flowered in the establishment of MM. Thibaut and Keteleer, near Paris. It still seems to be rare in cultivation.

(20.) L. Leeana, Rchb. f., in *Gard. Chron.*, 1882, pt. 1, p. 492. Brazil. Described as a doubtful natural hybrid, which appeared in the collection of Mr. W. Lee, at Leatherhead. The description is very vague. Reichenbach says he first thought of Cattleya Dormaniana, but the bulb and flower suggested C. superba, while the column-top made him think of Lælia pumila. I have not seen it, and should feel much obliged if its present possessor would forward a specimen.

(21.) L. lilacina, Philbrick, ex Veitch, *Man. Orch. Pl.*, pt. 2 (1887), p. 89.—Brazil. A supposed natural hybrid between L. crispa and L. Perrinii, which appeared in the collection of Mr. Philbrick, Q.C., and was exhibited at the Royal Horticultural Society in March, 1886. It is very similar to L. Pilcheri, an artificial hybrid between the same two species, differing chiefly in the form of the lip and the season of flowering.

L. Lindeni, Lindl. = Cattleyopsis lilacina.

L. Lindleyana, Veitch = Brasso-Cattleya × Lindleyana.

L. lobata, Veitch = L. Boothiana.

L. majalis, Lindl. = L. grandiflora.

L. Measuresiana, Williams = Lælio-Cattleya Schilleriana.

(22.) L. monophylla, N. E. Br., in *Gard. Chron.*, 1882, pt. 2, p. 782; *Bot. Mag.*, t. 6683; Warn. and Will., *Orch. Alb.*, ix., t. 395; *Trigonidium monophyllum*, Griseb., *Fl. Brit. W. Ind.* (1864), p. 629; *Octodesmia monophylla*, Benth., in Benth. and Hook., f., *Gen. Plant*, iii., p. 526.—Jamaica. Grows on St. Andrew's Mountain, at an elevation of 3500 to 5000 feet above sea-level, on the stems and lower branches of trees. It was sent to Kew by Mr. D. Morris, when Director of the Botanic Gardens and Plantations, Jamaica, in 1881, where it flowered in the following year. Its slender quill-like habit is peculiar, besides which, it is interesting, as the only Lælia found in the West Indies.

L. × Mylamiana, Rchb. f. = Lælio-Cattleya × Mylamiana.

L × Novelty, N. E. Br. = Lælio-Cattleya × Novelty.

L. pachystele, Rchb. f. = ? Lælio-Cattleya × elegans.

L. peduncularis, Lindl. = L. rubescens.

(23.) L. Perrinii, Lindl., *Bot. Reg.*, xxviii. (1842), sub t. 62; Paxt., *Mag. Bot.*, xiii., p. 5, with plate; Warn. and Will., *Orch. Alb.*, ii., t. 60; *Cattleya Perrinii*, Lindl., *Bot. Reg.*,

xxiv. (1838), t. 2. *Cattleya intermedia* var. *angustifolia*, Hook., *Bot. Mag.*, lxvi. (1840), t. 3711. *Bletia Perrinii*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 421.—Brazil. Introduced from Rio de Janeiro, by Mr. Harrison, of Liverpool, after whose gardener it is named. The date is not recorded, but when describing it in 1838, Dr. Lindley states that he had then known it several years. Its habitat is said to be on the northern slopes of the Organ Mountains, not far from Novo Friborgo. The following varieties have been described:—

Var. alba, O'Brien, in *Gard. Chron.*, 1888, pt. 2, p. 446; Rchb. f., *l. c.*, p. 565.

Var. irrorata, Rchb. f., in *Gard. Chron.*, 1881, pt. 1, p. 717.

Var. nivea, Rchb. f., in *Gard. Chron.*, 1880, pt. 1, p. 264; *Fl. Mag.*, n. s., t. 429; Warn. and Will., *Orch. Alb.*, iv., t. 181.

Lælia × Philbrickiana, Rchb. f. = Lælio-Cattleya × Philbrickiana.

(24.) L. × Pilcheri, D'Ombrain, *Fl. Mag.*, vi. (1867), t. 340. *L.* × *Pilcheriana*, Rchb. f., in *Gard. Chron.*, 1868, p. 875.—A hybrid raised by Mr. Dominy for Messrs. Veitch, from L. crispa ♀ and L. Perrinii ♂, and named in compliment to Mr. Pilcher, formerly gardener to the late S. Rucker, Esq., of Wandsworth.

Var. alba, Veitch, *Gard. Chron.*, 1870, p. 315 (in note).—A white variety for which Messrs. Veitch were awarded a first-class certificate on March 2, 1870, by the Royal Horticultural Society.

L. porphyritis, Rchb. f. = Lælio-Cattleya × porphyritis. There is a coloured figure in *Revue Hort. Belge*, 1888, p. 37.

L. præstans, Rchb. f. = Lælia pumila var. præstans.

(25). L. pumila, Rchb. f., in *Fl. des Serres*, ix. (1853), p. 102; Id., *Xen. Orch.*, ii., p. 44, t. 115, figs. 3-10; Warn., *Sel. Orch.*, ser. 2, t. 32; Veitch, *Man. Orch. Pl.*, pt. 2, p. 78, with fig.; *Gard. Chron.*, 1885, pt. 1, p. 596, fig. 110. *Cattleya pumila*, Hook., *Bot. Mag.*, lxv. (1839), t. 3656; *Bot. Reg.*, xxx., t. 5. *Bletia pumila*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 421. *C. marginata*, Paxt., *Mag. Bot.*, x. (1843), p. 265, with plate; *Florist*, 1850, t. 34. *C. Pinelii*, Lindl., *Bot. Reg.*, xxx. (1844), sub t. 5; *Florist*, 1851, t. 44. *C. spectabilis*, Lindl., in Paxt., *Fl. Gard.*, i. (1851), p. 44. *Lælia præstans*, Hook. f., *Bot. Mag.*, xci. (1865), t. 5498 (plate only). Brazil. This species is said to have been introduced through Mr. John Alcard, who had received it from Essequibo, in British Guiana, and in whose collection it flowered in 1838. If, however, no mistake has been made in the country, it must have been a cultivated plant in the locality mentioned, for it is now known to inhabit a region in Southern Brazil, extending from the eastern part of the province of Rio de Janeiro southwards to Santa Catherina, where it grows upon trees on the mountain slopes at 1500 to 2500 feet elevation, in which region it was detected by Gardner sometime between 1836 and 1841. Shortly afterwards, M. Pinel, a French merchant, sent plants to France, and Messrs. Loddiges, of Hackney, imported a considerable number of plants.

Var. Dayana, Rchb. f., ex Dean, in *Fl. Mag.*, 1877, n. s., t. 249; Veitch, *Man. Orch. Pl.*, pt. 2, p. 79. *L. Dayana*, Rchb. f., in *Gard. Chron.*, 1876, pt. 2, p. 772; Warn. and Will., *Orch. Alb.*, iii., t. 132; *Belg. Hort.*, 1880, p. 185, t. 10.—Discovered by Mr. Boxall, in 1876, when collecting Orchids for Messrs. Hugh Low & Co., in Brazil. It first flowered with Mr. Day, of Tottenham, in December of that year. Flowers a little deeper in colour than the type, also appearing a little earlier. Disc white, with 5 to 7 raised purple lines, and some shorter radial ones on either side, expanded part deep purple.

Var. præstans. Veitch, *Man. Orch Pl.*, pt. 2 (1887), p. 79. *L. præstans*, Rchb. f., in *Berl. Allg. Gartenz.*, xxv. (1857), p. 336; *Bot. Mag.*, t. 5498 (description only); *Fl. des Serres*, t. 1900; *Bletia præstans*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 425; Id., *Xen. Orch.*, ii., p. 43, t. 114. *Cattleya pumila major*, Lem., in *Ill. Hort.*, (1859), t. 193; *Lælia pumila major*, Lem., *l.c.*, in syn.—Lip trumpet-shaped, not straight as in the type, the convolute side-lobes over-lapping, and very rigid. Disc of the lip orange-yellow, the lines almost obsolete. A rare variety found in the province of Santa Catherina. *R. A. Rolfe, Herbarium, Kew.*

(To be continued.)

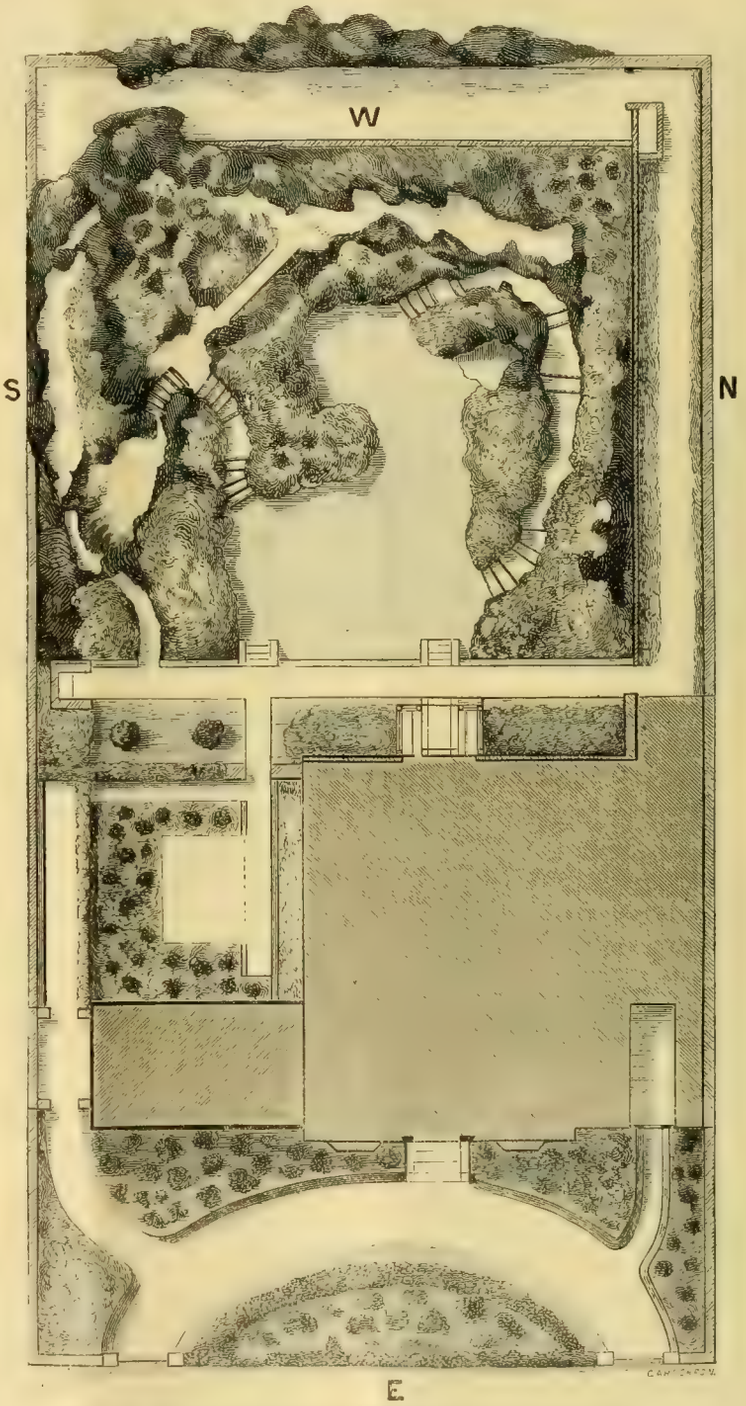


Fig. 39.—Plan of Mr. Bateman's Garden. (See p. 246.)

Forecourt at E; this leads to the Lapageria-house to the left. Under the S. wall, facing the billiard-room, is the spring garden with a northern aspect. A terrace, to which access is gained by a porch on the west side of the house, runs from north to south across the garden; to the west of it is the lawn, bounded on three sides by the rocks. At W is a mountain border, overtopped by rocks at the extreme west, which rest on arches. Under the N. wall is a south border, and one devoted to Tritomas.

Plant Notes.

RUBUS ODORATUS.

As far as my knowledge of this species goes, the specific name is incorrect, that is, as regards its application, for I fail to trace any odour from the flower, or any other portion of the plant; but still, it forms an attractive plant when allowed to grow into large masses. In planting it, it should have plenty of space to grow. The plant has an erect habit, and is 3 to 6 feet high, differing from the Blackberry, and others of the genus, the thorns in this case being also replaced by numerous glandular hairs, which cover the stems, petioles, and backs of the sepals, upon which small flying insects alight at the expense of their lives. The leaves are large, from three to five-lobed, the peduncle bearing many flowers of a rose colour, the flowering extending over a long period. It is a most distinct species, hailing from North America, and deserves a place in all collections.

Impatiens comorensis.

This plant was received at the Cambridge Botanic Garden from Kew some time last year, and we were

a little anxious to see it flower, to know if it was worthy of being added to the list of useful decorative species, of which I. Sultani or I. Episcopi, I. Hawkeri, I. Hookeri, and I. flaccida are such fine acquisitions, because of their perpetually flowering habit (excepting I. Hookeri). I. comorensis is certainly distinct from the rest, but as regards beauty and usefulness, it certainly must be put in the background when compared with the others we have mentioned. The habit is dwarf, the stems of a red colour, and the leaves similar to those of I. Episcopi. The flowers are of a shade of rose, and are about the size of those of I. Sultani, and slightly longer, and more irregular in outline. Another marked difference is, that of having two twin-like spurs. It should be grown in the stove. *W. Harrow, Cambridge Botanic Garden.*

dubbed them "Kings of the Woods," and the variety which on flowering at Streatham, Professor Reichenbach named L. e. Tautziana, he distinguished as the "King of these Kings" (*Gardeners' Chronicle*, March 17, 1888), and well has this grand plant borne its title, although the richly-coloured L. e. melanocheilos is the better of the two for form and substance. There is also a large specimen of another variety as yet unnamed, which is a gorgeous flower in every respect. Other richly-coloured and distinct varieties of the same section (*i.e.*, with purplish-rose sepals and petals, and brilliant purplish-crimson front lobe to the lip) are L. e. Mooreana, a very neat and distinct variation, and L. e. Houtteana. Perhaps exceeding these in beauty in the opinion of many, are the yellow or sulphur-coloured petalled forms, which as yet are confined to the Woodlands collection; these embrace L. e. Nyleptha, whose portrait appeared in our issue for February 11, 1888, and whose pretty pale apricot-yellow flowers, with intensely rich crimson lip, measured over 7 inches across. Another fine form of this section is L. e. Measuresiana, Rchb. f., *Gardeners' Chronicle*, February 12, 1887; and there is yet a third, whose beauty is well demonstrated by the production of fine spikes this year, viz., L. e. incantans, pale yellow, tinged with purple, and exhibiting a beautiful tracery of rose colour on the petals. Many others are in bloom, as well as some good examples of the Lælia Schilleriana type; also L. amanda, L. euspatha, and others which are succeeding to the display of L. purpurata just over. Here, too, is the unique plant of L. Perrinii alba, the only form in which no trace of colour appears.

Among the Cattleyas, the C. Gaskelliana make the greatest show; one specimen of Measures' variety presenting a grand picture, having twenty-seven spikes, carrying together eighty richly coloured flowers. Cattleya Hardyana is also in bloom, and many fine varieties of C. aurea and C. Dowiana, together with some C. Eldorado and other notable species.

Miltonia (Odontoglossum) Schroderiana also presents a charming appearance, several plants of it bearing four or five spikes each; for brightness of tint of the rosy-crimson base of the lip and contrast with the snow-white apex, this species stands unrivalled; it is also a very neat grower. Among other interesting plants were Lycaste Denningiana, L. Schilleriana, and a new form of L. Skinneri alba, with snow-white flowers, but with a bright yellow base to the lip; Broughtonia sanguinea also bears several spikes of its rich crimson blooms; Angræcum Scottianum, and various Aërides, Vandas, Saccola-

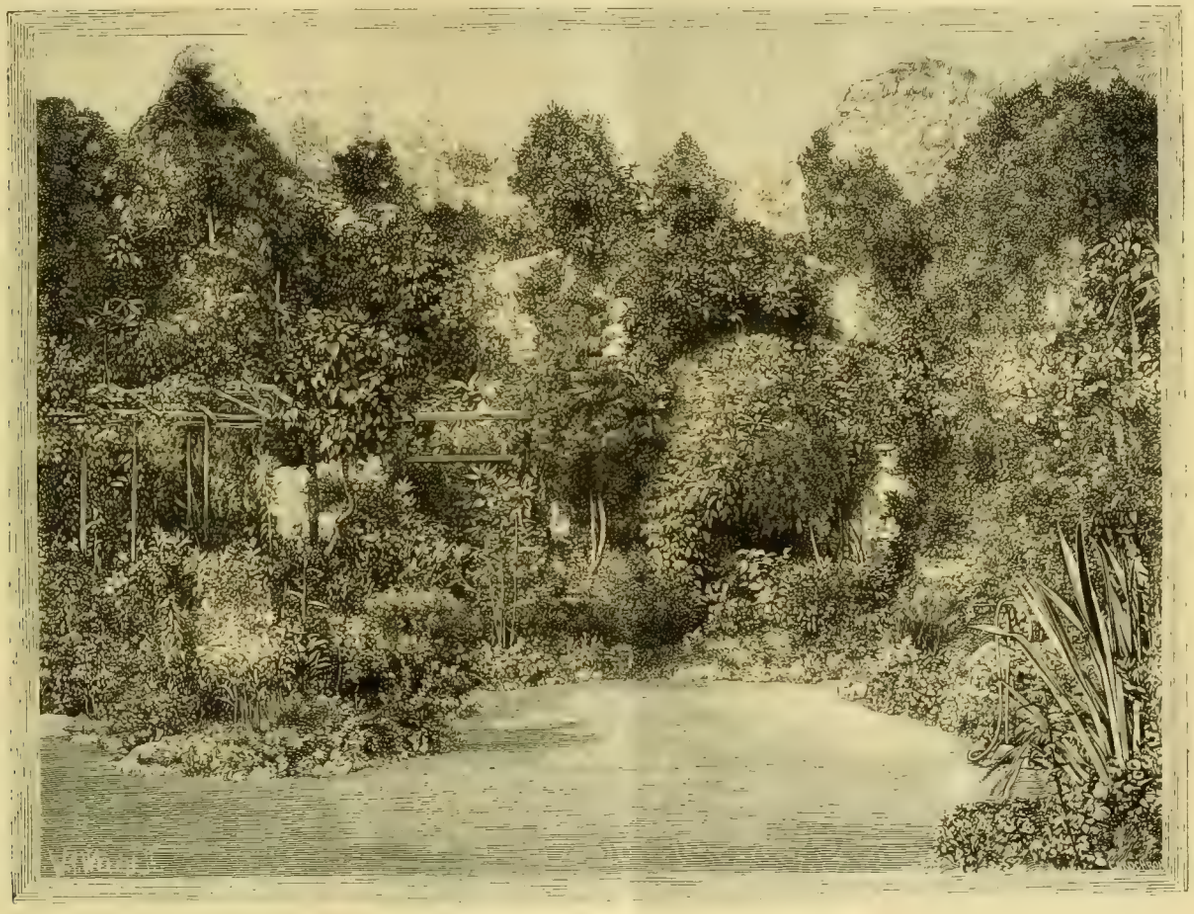


Fig. 40.—view in mr. bateman's garden. (see p. 246.)

Orchid Notes and Gleanings.

ORCHIDS AT THE WOODLANDS, STREATHAM.

The collection of R. H. Measures, Esq., forms a noteworthy example of a collection of rare plants, all of which are so well cultivated that they improve every year. The collection of varieties of Lælia elegans always forms the chief attraction at this time of year, and this season the plants have flowered better than usual; the most remarkable and interesting are the many fine varieties of the L. Turneri section which almost fill the house set apart for them, and among the many in flower at least fourteen distinct varieties appear, all of which are great improvements on the type. Most of these came from a small importation of Messrs. F. Sander & Co., which appeared so beautiful in the eyes of the collector, that he

biums, and Epidendrum prismatocarpum are in flower. Cycnoches chlorochilon (the Swan Orchid) bears several sprays of its quaint flowers; the rare Eulophia Guineensis has a stout spike of rose-lipped blooms, and the various houses containing the Cypripediums, which are perhaps the owner's special fancy, have many rare kinds in bloom. The extent of the collection of these plants will be understood when we say that the neat little morocco-bound book, devoted to an enumeration of the Cypripediums, includes and gives the origin or parentage of over 600 species and varieties. At present, some of the most noteworthy in bloom, so far as showiness goes, are The Woodlands form of C. Curtisii, which bears richly-coloured flowers, nearly 6 inches in length, and just under 3 inches across the pouch; C. Chas. Canham×, as grown here, is also a noble variety; C. Seegerianum, very pretty; C. calanthum×, and C. Dayanum, distinct and handsome; while C. œnanthum and others, among the many varieties in flower here,

present an unusually fine appearance when seen in such large specimens. *J. O'B.*

Bramerton, Tulse Hill, Surrey.

It was recently my good fortune to be enabled to inspect the collection of Orchids got together by S. G. Lutwyche, at the above place.

The collection is rather rich in hybrid Dendrobes, as D. Schneiderianum, a cross between D. Findleyanum and D. aureum, and partaking in flower, pseudobulbs, and foliage of the characteristics of both. D. Endocharis = D. japonicum and D. aureum, with the perfume of the latter. D. Ainsworthi was a notable species in flower amongst the other Dendrobes, and appeared to be very vigorous and healthy. The pseudobulbs were 2½ feet in height, and it appeared to be an extra good variety. Of other Dendrobiums noticed, mention may be made of D. nobile nobilius, D. crassinode album, D. Wardianum album, and quite a large stock of the D. nobile Cooksoni.

Many fine specimen plants of Lycaste in variety were also to be seen, amongst them forms of L. Skinneri, L. Skinneri alba, the pure white form; L. alba xanthoglossa, white with a yellow blotch on the throat; L. plena Tautziana, L. plena rubroglossa, which, when in flower, Mr. Lutwyche says, is quite dazzling.

Cypripediums form a special feature of the collection, and many rare plants were found. One very striking thing was to see the unequalled vigour with which C. bellatulum was grown in a compost consisting entirely of stiff clay, the leaves on these plants were marvels in size and substance. This is a hint which it would pay many growers to take notice of. A very nice plant, the Studley House variety of C. Boxallii atratum is much valued, and the plant was throwing up a good flower-spike; several healthy plants of the rare C. Seegerianum, all very clean and healthy, were observed. Mr. Lutwyche is signally successful with C. insigne, not that they want any particular coaxing, for he grows them outside in a cool frame as he would a Fuchsia or Pelargonium, giving them just a little shade when the sun is scorching; he also prevents heavy rains filling the growing points. There were about two dozen of these plants, all of specimen size, and which must make a capital display in their season. Quite a number of the Cypripediums have been fertilised, many bore seed-pods, while on many of the pots are some seedlings, all Mr. Lutwyche's own handiwork. Many other plants in the way of Odontoglots, Oncids, Masdevallias, &c., were all looking well, thereby paying Mr. Lutwyche for the constant attention which he bestows on them. *Visitor.*

Cattleya Eldorado venusta, &c.

This, the handsomest white-petalled Eldorado which has yet appeared, is now in flower in the Orchid-houses of Edward Moon, Esq., at Cassiobridge, Watford. It belongs to the major form of C. Eldorado, which bears three or four flowers on a spike, the ordinary form rarely producing but two. Its sepals and petals are pure white; the lip is broad and beautifully fringed, orange-coloured at the base, and rich amethyst-crimson in the middle area; the front of the lip is of various shades of rosy-lilac, through which a beautiful pencilling of clear white extends to the tips of the fringing of the labellum. This fine variety is also very fragrant like the others of its section. A noble specimen of Cattleya Sanderiana, some fine C. Gaskelliana, Vanda Kimballiana and other good Orchids are also in bloom at Cassiobridge. The beds of various kinds of Alstrœmeria outdoors also are a fine sight.

Cynoches chlorochilum.

An importation of this lovely "Swan Orchid" has recently been received by Messrs. F. Sander & Co., St. Albans. The great size of the pseudobulbs is such that they are worthy of our notice. From particulars received with the plants, it appears that many of the pseudobulbs in their native home exceed 20 inches in length and 6 inches in girth. Some of the plants were in flower when unpacked.

The Apiary.

NOVEL METHOD OF CLEARING SUPERS.

We have just come across an amateur who showed us an ingenious method of clearing large supers of bees, which seems to be very effectual. Large supers are always more or less difficult to clear of bees, and great care is necessary not to kill any, as they are harder to remove dead than alive. His method was as follows:—Remove the super from the hive and turn it (the super) upside down. Cover up the super at once with a flat-topped skep, and in the hole of the skep insert a long tube made of wire-gauze. Fit the tube well in, and take care that light is excluded from every part except up the tube, or shaft. The bees will soon commence flying to the only spot where light can be found, *i.e.*, up the shaft. After a few begin to fly out, the rest will soon follow suit. The bees have no sense to return down the shaft, but will fly away to their hive to join the queen. Should robber bees come about, they will also be unable to find their way, especially if the shaft tapers towards the top, but will keep playing all round the tube, and try to get in through the gauze, which, of course, is an impossibility. A large super may be cleared in less than an hour by this method. When the super is taken off the hive, it is well to do it very gently and quietly, as if the bees are much disturbed they will tear probably some cells down to get at the honey. In fact, with all the operations about a hive, it is best to be collected, as well as cool and determined. Do not shake or jar the bees, as that puts them into a bad temper at once. The above method of clearing supers is evidently very practical and inexpensive.

If ordinary care is used, no dust or dirt will get anywhere near the honey, especially if a piece of paper is used to stand the super on. We have given our hives a thorough examination, and as we are just going to drive some bees for the cottagers round about, shall then be able to give some information about preparing bees for the coming winter. *Bee.*

Florists' Flowers.

THE CARNATION AND PICOTEE.

The handsome offer from Mr. Martin Smith (a member of the Council of the Royal Horticultural Society) of prizes for border Carnations, and the remarks made by that gentleman at the Conference at Chiswick, have naturally led to some discussion. Mr. Smith, and others desirous of growing the Carnation and Picotee as a hardy border flower merely, complain that the finer varieties sadly degenerate when left to themselves in the open border. I fancy those who are possessed with this notion have not sufficient knowledge of the plant; they are either unacquainted with its cultural requirements, or do not take pains to grow it well.

The Carnation and Picotee require a rich open soil, with free exposure to light and air; and when the plants are left to struggle for existence, as they often have to do in an ordinary herbaceous border, they come off badly. Even those who give herbaceous plants their best attention know well how difficult it is to prevent the plants with tough fibrous roots from altogether ousting those of delicate constitutions. I do not admit that the Carnation and Picotee are delicate plants, but they require special culture, and those who are not prepared to give it, had better not grow them at all. To grow Carnations and Picotees in anything like good condition, they must be layered annually; but some people neglect this point, say the plant is delicate, and requires to be sheltered from the cold and wet in glasshouses.

I have been tempted to write this after seeing the splendid flowers of exhibition Carnations and Picotees staged at the show held in the Leazes Park, Newcastle-upon-Tyne. The plants are grown in what must certainly be termed a wet, cold district, especially in the late autumn months. They are not cultivated in pots, neither are they protected by glasshouses, nor yet in frames during the winter. The best growers are working-men of small means, like Mr. George Dixon, of Riding-mill; Mr. Flowdy, of Gateshead; and Mr. Scott, of Summerhill Grove, Newcastle. They exhibited flowers quite as good in form and quality of petal as any shown at Chiswick at the National Society's exhibition, or at the Royal Aquarium a week later; but the markings of the bizarre Carnations were not so clear, nor so well defined, and the flakes might also be a little behind in this respect. This I should be inclined to attribute to the more uncongenial climate of the North. The Picotees, on the other hand, were even more bright in colour than those of the South. The best Carnation blooms were Admiral Curzon (Easom), S.B.; Fred (Dodwell), S.B.; J. D. Hextal, C.B.; James Douglas (Simonite), P.F.; Thalia (Douglas), R.F.; and Alisemond (Douglas), S.F. Of Picotees, Thomas William (Flowdy) was in superb condition; one or two heavy red edges, such as Dr. Epps and Brunette, were most brilliant in colour; while some of the rose-edged varieties, such as Liddington's Favourite, were very fine; but the varieties exhibited, as a rule, were the same as those grown in the South.

The method of cultivation is this. The soil is dug or trenched deeply. Manure (the sweepings of the cattle-market) is laid in a heap to rot, and is applied to the ground. The layers are planted out on this well-prepared ground as late as November, and as high winds prevail the taller plants are staked. In this position they need but little attention, except to see that slugs, &c., do no harm. Stirring the soil with a hoe, and keeping the ground quite clean, are essential.

Some amateurs like Cloves and self Carnations best, but these do not seem to obtain so much favour in the North, as but two stands, of rather poor quality, were shown for competition. The yellow ground Picotees have yet to find favour in the North, as doubtless they will when better known. *J. Douglas.*

Plants and Their Culture.

Greenhouses.—Many of the summer occupants should now be in the open to get the wood thoroughly matured for next season's bloom. Careful watering will be necessary in the case of the New Holland plants when in their summer quarters, as often large plants suffer for want of moisture at the roots even in wet weather, as their dense tops throw off any moderate rains. In a short time the whole collection will require housing in their winter quarters. Special attention should at once be paid to the heating apparatus, if repairs are required. Painting can best be done inside when many of the occupants are in the open. The Ericas in the open are often attacked at this season by mildew, which, if allowed to spread, soon disfigures the plants; therefore, a careful look-out is required, syringing with sulphur in water, and dusting all affected parts with dry sulphur, repeating the application every few days in stormy weather. Small plants of Erica and Epacris should be laid on their sides, or have a light placed over them, if wet weather should set in. Many of the strong-growing greenhouse plants, such as Acacias, Genistas, and Neriums, will take frequent supplies of liquid manure. Azaleas should be turned round so as to get all their sides thoroughly matured; small plants must not suffer for want of moisture, and should be syringed every day during dry weather, and watered with soot-water once or twice a month. Vallotas, where the pots are full of bulbs and the plants pot-bound, will be benefited by a good fertiliser. The early Amaryllis will have completed their growth, and may be transferred to shelves in a cool-house, and kept dry from this date; late-flowering bulbs should be induced to finish off their growth as soon as possible, so as to give a long rest. A sunny shelf in a late vinery suits them. The bulbs of Lachenalias should be potted up. Triteleia uniflora is also a useful bulb for conservatory decoration, and requires the same treatment as the

Lachenalia. The useful Sparmannia africana is not often used as a winter decorative plant, but if grown for that purpose it is difficult to beat, as it flowers freely through the autumn and winter. Young plants in 6 or 7-inch pots are best for this purpose, and should be propagated in spring, so that by the autumn the pots are full of roots, when if fed well they will bloom in a greenhouse for a long time. Another useful plant for autumn decoration is Cassia corymbosa, of easy culture; it has flowers of rich yellow, and keeps in bloom a long time. We usually grow our plants in the open through the summer, bringing them into the greenhouse early in September. When they commence to bloom feed freely, and do not over-pot; it may be made to bloom earlier if kept indoors. The hybrid Rhododendrons should be put into a cool-house, standing the plants on an ash bottom, or any other place retaining the moisture. By giving cool-house treatment now, the plants will ripen their new growths, and bloom profusely when placed in a slightly higher temperature, in October and through the winter months. They should never be allowed to become dry, and should, as I have observed previously, be frequently syringed upwards, thoroughly wetting the underside of the leaves. *G. Wythes, Sion House, Brentford.*

The Orchid Houses.

Cattleyas.—Many growers complain of rot in the plants. This is not surprising when we consider the extraordinary weather we have experienced this summer. During the months of April and May we had more sunshine here than I ever remember before, which induced plants to start too soon into growth, not allowing the usual period of rest after flowering; more especially was this the case with Cattleyas Trianæ and Percivaliana, which, after having started, were severely checked by the cold and dull weather of June and July. Great care must now be taken to sufficiently ripen the growths upon Cattleyas. I would strongly advise my readers to err rather on the side of too much air than too little, always keeping a gentle heat in the pipes, as this will moderate very severe reverses of temperature. Cattleya Bowringiana has made immense growths, but we shall see if there is a corresponding quantity of flowers; I am afraid not. The temperature must not yet be allowed to fall below that mentioned last week.

The Intermediate-house.—Pleiones will have now sufficiently finished their growths, and should be taken into a dry airy house, where a good supply of light can be given. No better position can be found than the shelves in a Strawberry-house. I would again remind readers not to starve these plants because they are comparatively resting; they should never be allowed to get dust-dry at any time, or the plants will suffer severely. The later-flowering plants of Miltonia vexillaria and M. v. rubescens will now be ready for repotting, good sphagnum moss and peat are all that is requisite for the wellbeing of these plants. Many growers, I find, are too much afraid of applying water to the foliage; my advice is, where a hose is used for the damping of the house, to well drench the plants at the same time. This will not hurt them in any way, unless they have been very recently repotted, in which case it should, of course, not be done. Vanda cœrulea must be kept very damp now, as it is sending up flower-spikes, but a good airy place must be afforded, or spotting of the foliage will ensue. If the temperature is kept up to 62° at night, with a good circulation of fresh air, all will be well. *A. G. Catt, Parkfield, Hallow.*

The Hardy Fruit Garden.

Any trees that are growing too robustly, and which need a check, may be slightly root-pruned. Dig out a trench at a reasonable distance from the bole, according to the size of the tree, and cut off the ends of a few of the thickest roots, especially the perpendicular ones. Sometimes it is necessary to prune only a portion of the roots, leaving the rest for another season. As a rule, it will be found that when root-pruning is done effectively the second or third year after planting, the fruiting vigour induced is sufficient to keep growth in check, unless a season of failure, such as the present, ensues. Early autumn, as soon as the fruit is gathered, is the best time to do the work.

The planting season is at hand, and notes should therefore be made of all renewals required, and varieties which have been found to succeed under the same conditions, or in the locality, should be selected. This also is a good time to look round the orchard, and observe the yield; if there are good crops on any old trees which have not borne for years, they may, if healthy, be marked for cutting back, to be grafted on in the spring with varieties most suited to the district.

Peaches now beginning to ripen must have full exposure to sun and light, by turning the leaves aside. The points of many of the shoots marked for removal when the crop is gathered also may be pinched; this will also throw size into the fruit. It is a good plan to give late Peaches a good supply of water at the root, and over the branch when they commence the last swelling, afterwards giving an extra mulch of long litter. Look well after the protection of the fruit by netting. The gathering in of late hardy fruit in many gardens will not be a heavy business, but the little we have will well repay protection, especially where large desserts are in demand, and fruits under glass not plentiful.

Plums, like the late Peaches, will repay for extra attention. Feed with good liquid manure, and pinch in close to let in sun and light. Cleanliness must be closely observed. Wasps must be guarded against; during the past fortnight they have become abundant with me. Protection against birds must also receive attention. *A. Evans, Lythe Hill, Haslemere.*

Fruits Under Glass.

Melons.—Crops now ripening should have atmospheric moisture gradually reduced; abandon syringing, and simply damp down as necessary. Maintain a brisk, buoyant temperature day and night, either by sunshine, or with the assistance of fire-heat, and give free ventilation, as a damp stagnant atmosphere is fatal to the development of flavour. The house must not be closed in the afternoon, as that might lead to cracking of the fruit. Complaints of this malady have been unusually numerous this season. The most common cause of cracking is subjecting the plants at this stage to the extremes of a dry arid air by day, and the opposite at night. Another cause is an insufficient bottom-heat; that, combined with a compost not made firm enough, which will hold water in suspension, and become water-logged, will cause damping off of the plants at the collar. When such a state of things ensues, lime, charcoal, &c., are only temporary remedies, not cures. As soon as the fruit shows signs of ripening by cracking away at the footstalk, it should be cut and stored on moss or wool in a cool room, when the flavour will be up in a few days.

Plants growing on dung-beds do not require very much water, but if the weather be cold or dull, attention must be given to the linings. Keep the growths thin, in order to secure sturdy leaves, and the laterals should never be allowed to crowd the principal leaves; strive to bring the soil about the roots into a nice moist condition, preparatory to ripening, so that it will be unnecessary to water at the roots during the final stages; earth over any exposed roots as they appear on the surface. Fumigate moderately if attacked by black aphis, but young plants resent fumigation.

Plant out the latest batch at once, train with a single stem until two-thirds of trellis is reached, pinching out alternate laterals on each side of the plant. Maintain a day temperature of 80° and a night temperature of 70°, with a bottom-heat of 75° to 80°. As soon as three or four laterals show female flowers, stop each at the first joint beyond, and fertilise each flower twice daily when perfectly dry. If a little cross pollen be introduced, better results are sometimes realised, except for seed purposes. As the fruit swells, give every encouragement in the shape of liquid-manure.

Cucumbers.—Clear out old exhausted plants, as they will only produce crooked and deformed fruit of bad flavour. The best fruits are got from young healthy plants grown on the extension system. If other inmates of the house can be removed, advantage should be taken to thoroughly cleanse and disinfect by burning a little flower-of-sulphur. Nice sweet hillocks of light turfy soil should be prepared to receive the plants, or Cucumbers are under good control grown in 16 or 18-inch pots filled with sweet fermenting material, when stood on temporary pedestals of dry bricks. Plants thus grown will continue to bear well up to February, by which time the batch now sown will be ready, and should last up to the end of the following summer. February being the most difficult month in which to supply Cucumbers of good quality, every preparation should be made to keep the plants stocky and healthy all through the dark days. Should mildew attack them, dusting a little fresh flowers-of-sulphur will arrest it, if done early. As growth progresses, add a little fresh and partly decayed turfy-loam over the roots as they appear on the surface; maintain a sweet, buoyant air, with a temperature of 75° by day and 65° by night, with bottom-heat for winter of 70° to 75°. Train thinly, and preserve carefully the large stem-leaves; removing, as made, superfluous laterals. A good strain of Rollison's Telegraph is yet unbeaten.

Orchard-house.—Early forced trees, now standing outdoors, should be taken in hand and top-dressed, removing as much old soil as possible down the inside of the pots, picking it out with as little disturbance of the larger roots as possible, and if the ball is found to be dust-dry at the centre, it would be advisable to stand it, pot and all, in a tub of water for a few hours, till air-bubbles cease to appear, then to drain for two days. After several inches of inert soil has been removed around the outside, and as much as possible elsewhere, examine the drainage, and see that it is in good condition; then fill in the space with compost, firmly rammed down, and consisting of turfy-loam six months' stacked, adding a peck of crushed bones to one barrowful, and 2 pecks of old mortar rubble, free from wood. If a little Thomson's Manure be added, or a sprinkling of wood-ashes, so much the better. Peaches, Nectarines, Plums, and other orchard-house trees, may all be attended to at once, providing growth has ceased, and the fruit gathered. As the fruit is taken, continue to prune away all useless snags, and weak exhausted shoots, so as to let in air and sun to complete the ripening of the buds. *W. Crump, Madresfield Court, Malvern.*

The Kitchen Garden.

If not already done, prepare the ground for the main spring crop of Cabbages. For the early hearting kinds, I prefer to plant on rich but firm ground, such as a Strawberry bed, with no preparation beyond breaking up the surface with a Canterbury hoe; but poor soil should receive a thorough dressing of rich farmyard manure, and be either double dug or well trenched to a good depth. This is especially necessary for the large-hearted Imperials, &c., and those intended to supply a second crop from the old stumps during the following summer months. If the early and later kinds are to be planted in one bed, keep the Ellams on one side, so that these may be planted thickly, and, when ready, cut and cleared off at once, liberating the ground for other crops; 1 foot apart is a fair distance for the early kinds, but the larger sorts should be allowed more room—from 18 to 20 inches will not be too much. Put out the strongest medium-sized plants as soon as ready — in showery weather, if possible—in shallow furrows. Lime and soot should be freely used where slugs abound, and as a means of preventing club, puddle the roots in a mixture of soot, lime, and clay, with an additional handful of sulphur. As the hearts from the spring-sown plants become fit for use, and there is no further need for the twelvemonths-old bed, get the remainder of the stumps, &c., dug up and cleared off.

When large enough to handle, thin out the plants of the main autumn and winter crop, first to 3 inches apart, and finally to from 6 to 8. Keep the hoe in constant use between the rows, to destroy weeds and encourage free growth. Thin the late crop of early Nantes Horn Carrots to about 2 inches apart, further thinning being done when pulling for consumption. To keep up a constant supply of Parsley through the winter, plants should now be lifted and transplanted to quarters where protection can be easily afforded; where seed has been sown in frames for this purpose, or where frames can, when required, be put over the bed, the seedlings should be thinned out early, plenty of room being essential for the development of the leaves. Onions will have grown strong in top, and to hasten the maturing and to increase the size of the bulbs, the tops should now be bent down almost flat. *H. Markham, Mereworth Castle, Maidstone.*

EDITORIAL NOTICES.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY,	SEPT. 2	East Lothian.
WEDNESDAY	SEPT. 3	Glasgow and West of Scotland (two days). South of Scotland (Dumfries). Bath (two days).
THURSDAY,	SEPT. 4	Paisley (two days). Dundee (two days). Stirling (two days).
FRIDAY,	SEPT. 5	Crystal Palace Fruit, and National Dahlia Society.
SATURDAY,	SEPT. 6	Dalkeith.

SALES.

MONDAY,	SEPT. 1	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY,	SEPT. 3	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	SEPT. 4	Established Orchids and Importations from Mexico, Brazil, &c., at Stevens' Rooms Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	SEPT. 5	Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	SEPT. 6	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—59°.7.

Mr. Bateman and his Garden.

INTERWOVEN beyond power of obliteration with the history of horticulture in this country for the last half century is the name of JAMES BATEMAN. It was not long after he ceased to be a "gentleman commoner" at Magdalen that he manifested his early passion for Orchids and their culture. No orchidist is unaware of the services he rendered as a pioneer in their successful cultivation, no botanist interested in these plants but recalls the sumptuous atlas folio on the Orchids of Mexico and Guatemala which he published; or (on account of its greater accessibility) the more valuable monograph on Odontoglossum. Both these works are in the Lindley Library, where they may be consulted by gardeners. A good many are, happily, still left who remember the bright, crisp, lecturettes that Mr. BATEMAN was wont to give at the three o'clock meetings of the Royal Horticultural Society in former days, when with lightness of touch he gossiped pleasantly but without sacrifice of accuracy on whatever happened to be of interest among the plants shown. Mr. BATEMAN more nearly realised the ideal of a "popular" lecturer to a mixed and not very learned or exacting audience than any one before or after. He managed to convey solid information in an attractive form, and in language intelligible to the people; he put his audience on good terms both with himself and with themselves, by never allowing them to feel oppressed either by their own ignorance or by the superior acquirements of the lecturer.

To his garden in Staffordshire, of which full descriptions were given in our columns in 1856 and 1862, we can only now make passing allusion. But now that we have to mention his garden at Worthing, it becomes almost essential, as a matter of historical continuity at least, to refer to the wonders that were effected at Knypersley (where his first Orchid-houses were erected), and Biddulph Grange. The conditions in North Staffordshire and on the south coast, within rifle-shot of the sea, are as different as can well be imagined. Nevertheless, the same taste, the same playfulness of fancy, the same judgment in the selection of plants, the same knowledge of their requirements, the same intuition as to the best methods of fulfilling them are obvious in the smaller garden, as they were, according to the testimony of those who had the good fortune to see it, in the larger establishment. Mr. BATEMAN'S garden at Worthing is, indeed, a small villa garden of six years' growth only, flanked by neighbouring gardens on three sides, subject to be buffeted by south-west winds, and in size, shape, situation, natural surface, like scores of others in the same town, like thousands upon thousands of others elsewhere. And yet such have been the taste and skill displayed, that this little parallelogram stands out unique in its way. True, we have seen many gardens in which something of the same sort has been attempted, but the result has in general been of the cockney tea-garden order. When the reader hears of a range of Alps visible from the back-door of a Worthing villa, he will be apt to think of the garden of Mr. WEMMICK, or some such suburban elysium. The pen of a ready writer, were he never so ready, would, we fear, fail in entirely removing this impression. Nothing short of actual inspection can suffice to give an idea of the taste and ingenuity which are displayed in this garden, and of the refinement and judgment which are manifest in the selection and cultivation of the inmates. Where both Mr. and Mrs. BATEMAN have been in such thorough co-operation throughout, it would be difficult, and perhaps not altogether gracious, to attempt to discriminate the work of the one from that of the other. The co-operation is, however, patent, and the result is delightful.

Emerging from the house, the visitor steps out upon a terrace walk, a little raised above the lawn, the difference in level giving an impression that the lawn is larger than it is in reality. On one side, (to the left), is a flat "spring garden," where Lilies and other bulbs thrive amid choice shrubs and herbaceous plants. On the other sides of the mountain-pasture, called the lawn, rise in a semicircle undulating mounds with winding walks between, rustic bridges vaulting over cavernous valleys, tunnels which suggest the "galleries" on the Simplon route, and picturesque gorges, while above all tower Ivy-covered rocks, whose jagged weather-worn peaks do not indeed reach the snow-line, but extend well above the region of the forests. The rock strata are of igneous origin, that is to say, they are of bricks and clinkers, resting in part on an ordinary wall, which, like the subjacent rock, is completely hidden by a superficial calcareous and silicious drift; in other words, cement, which gives an appearance of "weathering" to the rock, and which the six years that have elapsed since its deposit have already toned down to a soft grey tint, relieved by deeper shadows where snow and ice, rain and frost, have done their work of disintegration. "Snow and ice at Worthing!" We are forgetting—this is but an illusion, but it is a beautiful one. The subalpine range forms an excellent shelter from the wind, and its varied surface affords endless coigns of 'vantage for suitable plants, which, in this mild climate, are by no means few, and in the selection and cultivation of which the appreciation and judgment of Mr. and Mrs. BATEMAN are specially conspicuous.

Chinese Pæonies or Moutans, and Sikkim and Himalayan Rhododendrons are favourite plants of Mr. BATEMAN, and he has a few very choice forms in each section. In the case of Rhododendrons, he finds that if the choicer sorts are much exposed to the sun, they start into growth too quickly, and the buds soon drop off. Too much sun and a superabundance of rain are also frequent sources of disappointment with the Moutans, and Mr. BATEMAN has contrived ingenious protections from both evils. A mere cursory glance around this garden will serve to show how great a number of plants may be grown in a small space. Choisya ternata, Buddleia globosa, Azalea rosæflora, Hydrangea manchurica (with its black petioles), H. roseo-alba, Eucalyptus Gunnii, Phormium tenax, Escallonia macrantha, Andryala lanata, Polemonium himalaicum, various Bamboos, and very many other plants flourish here all the year round without any protection in winter. Three plants of Dracæna indivisa, 10 feet high; and a fine bush of Carpenteria californica, several beautiful single Japanese Roses in full bloom, and a few species of Lilium, including L. Batemanniæ, also deserve mention.

There can hardly be any question about the uniqueness of Mr. Bateman's garden, and the more one looks at it the more surprising does it appear that a flat and desolate wilderness could be transformed into such a little paradise in the short space of six years. It is another illustration of the fact that the possibilities of gardening are truly infinite.

From what has been said, it is, moreover, obvious that mere description will not suffice to give any adequate idea of this garden—it must be seen to be thoroughly appreciated; but as this is not in all cases practicable, we are pleased to be able to supplement our account by an illustration (see p. 243) from a photograph of Mr. RAVENHILL, an amateur of no mean pretensions, and which has been kindly communicated to us, while the plan (p. 242) will suffice to show the relative position of the hollow walls, the rocks, the mounds, the trackways, and the bridges of this bijou garden.

MR. DOUGLAS ON THE HOLLYHOCK.—At the end of August it is natural that people should prefer to see the Hollyhocks in their own gardens. There they can see them in all their stateliness; at a flower-show or a committee meeting they can only see cut blooms in stands, like buttons on a card, and about as interesting. It is not wonderful then that the audience that was collected to hear Mr. DOUGLAS at the Royal Horticultural Society on Tuesday last was not numerous. Everybody (according to the phrase), is out of town. Nevertheless, the address, it is needless to say, was a good one, and the discussion which ensued, led by Mr. SMITH, of Dulwich, better and more useful than is sometimes the case. One feature of Mr. DOUGLAS' address we strongly commend to the notice of those who favour the Society with their remarks, in the hope that, where practicable, and the subject admits of it, they will follow his example. Not content with saying this is what you ought to do, Mr. DOUGLAS there and then, in full view of his auditory, performed the operation of taking cuttings, root cuttings,





VIEWS IN THE GARDEN OF THE REV. W. WILKS, SEC. R.H.S.

and grafts. This is simple enough to professed gardeners, but there were many present to whom the operations in question had previously only been read about. The best thing, of course, is to do the operation for one's self, under the direction of an expert; the next is to see it done; the least useful of all is to read about it. Mr. Douglas touched lightly on the history of the flower and its introduction to this country, showed what had been accomplished by Mr. John Laing in crossing the English and Scotch varieties, so as to secure a moderate guard-petal, and a full centre, then detailed the best methods of culture and of propagation; and, lastly, mentioned the principal diseases to which the plant is subject, including the too prevalent Hollyhock fungus, for which the use of Condy's fluid was prescribed. In the discussion which followed, Mr. Smith, the veteran florist of Dulwich, gave some cultural details, differing in some particulars from those of Mr. Douglas, and which will in due time be reported in the *Journal* of the Society. Mr. Cannell and Mr. R. Dean also contributed some useful remarks to the discussion. The Chairman, after making some comments on some of the points raised, and advocating the use of sulphate of copper as cheaper than Condy's Fluid, showed some leaves from Camberwell Park, brought by the Superintendent to show the effect of the hail-storm on Sunday last. Such a spectacle of lacerated leaves and riddled foliage we do not remember to have seen to such an extent on any similar occasion. It was then announced that M. Lemoine, of Nancy, will make a special visit to the Society, in order to speak on Gladioli. M. Lemoine is so highly distinguished a cultivator, that this announcement will be received with great interest, and will, we hope, suffice to secure a large and appreciative audience even in September.

The B. S. Williams Memorial Fund.—At a general meeting of horticulturists, held in the Rooms of the Horticultural Club, Hotel Windsor, Westminster (kindly lent for the occasion), on Tuesday, August 12, 1890, Dr. M. T. Masters, F.R.S., in the chair, the proposition, respecting which some particulars have been made public, was fully discussed, and definite conclusions thereupon were agreed to. It was felt that money prizes and certificates, for the encouragement of the cultivation of stove and greenhouse plants and Orchids, would properly represent the special talent and sphere of activity of our departed friend, while a work of beneficence would commemorate his private worth and well-known generosity. A resolution in accordance with this feeling, after careful consideration, was adopted with unanimity, as embodying the full intent and purpose of the Fund. It will be seen that the original proposal is adopted in substance, but is added to in the interest of philanthropy. This enlargement of the original plan will necessitate the accumulation of a considerable sum of money, but it cannot be doubted that the needful means will be forthcoming, seeing that the objects in view will commend themselves to the sympathies of all true horticulturists, and more especially to those who knew the subject of the memorial. The resolution is as follows:—

"That this committee desires to raise a fund to perpetuate the memory of the late Mr. B. S. Williams, and, by investing a sufficient amount, trusts to be enabled to place a certain number of orphans of gardeners on the Gardeners' Orphan Fund as 'Williams Memorial Orphans,' and also to give prizes in money with Williams Memorial Certificates for excellence in the cultivation of plants."

Immediately on the unanimous adoption of the foregoing resolution, subscriptions were announced, and many other promises of support were given.

Journal of the Royal Horticultural Society.—The part dated July, 1890, has just been issued, and proves to be one of great value. The report of the Daffodil Conference is very interesting, and the papers read were, as was said at the time, of permanent importance. Fig. 20, we may incidentally remark, does not represent a double form of Cernuus, but the double form of the native Daffodil. Mr. Veitch's paper on Hippeastrum is a substantial contribution to the history and method of cultivation of these splendid flowers. The rules for the nomenclature of Orchids are printed, and must for the present be loyally obeyed; but it is to be hoped that the inconvenience of making use of misleading forms of nomenclature for forms of garden origin, will ultimately bring about a reform in this particular. The employment of Latin names for almost all cases was strongly insisted on by the majority of the committee, and, this being the case, it is to be hoped some of our friends versed in classical lore will be able to devise a form of epithet which, while fulfilling the desires of those who wish to retain Latin names, shall not conflict, as it does now, with botanical usage. The Fellows of the Society, even those who live far down in the shires, receive decidedly good value for their money.

Rose Duchess of Albany.—We greatly regret to find that the expression, on the part of a correspondent, of a doubt as to the distinctness of this Rose from La France, has caused great annoyance to the firm by whom the Rose in question was sent out. Those who, like ourselves, saw the two Roses as shown on Tuesday last at the Royal Horticultural Society side by side, will by no means share the doubt alluded to, but will consider the two as quite distinct. Duchess of Albany, we learn, is a sport from La France, but it is alleged to flower more freely, while the colour, as shown, is obviously much darker, and the edges of the petals rougher. The Rose has been Certificated both at the Royal Horticultural Society and the Royal Botanical Society. There is greater justification for bracketing Jean Soupert and Grand Mogul among the "too-much-alike" Roses; but it is stated that, whilst Jean Soupert rarely produces a good flower, Grand Mogul (a seedling from A. K. Williams), produces a fair average of good flowers.

Royal Horticultural Society.—We specially commend the following notice to the attention of gardeners, feeling assured that anything connected with the Vine will be of great interest to them:—A great exhibition and conference on Dahlias and on Grapes, will take place at Chiswick, on September 23 and 24, 1890. The schedule provides classes for collections of Dahlias of all kinds, including varieties of show Dahlias, fancy Dahlias, Cactus or decorative Dahlias, single Dahlias, pompon Dahlias, and new varieties, seedlings, and miscellaneous. The co-operation of amateurs for whom special arrangements will be made is particularly requested.

Grapes.

Two bunches of each variety should (if possible) be shown. In Class I. each exhibitor may stage his whole collection together, but should have it arranged from right to left in the following order:—

Class I.—General collection of Grapes: Group A.—Sweetwater Grapes, including Chasselas and Muscadines. (1.) Black or purple-berried varieties. (2.) White, green, or golden-berried varieties.—Group B.—Muscat and Frontignan Grapes. (1.) Black or purple-berried varieties. (2.) White, green, or yellow-berried varieties. (3.) Frontignans.—Group C.—Vinous or late-keeping Grapes. (1.) Black or purple-berried varieties. (2.) White or golden-berried varieties.

Class III.—Grapes of very high flavour (any kind).

Class IV.—American varieties.

Class V.—Grapes grown entirely in the open air.

Class VI.—Grapes grown under glass without artificial heat.

Class VII.—Foreign grown Grapes.

Class VIII.—Pot vines with fruit.

Class IX.—Examples of packing Grapes for market to be sent by rail.

Class X.—Examples of packing Grapes, 4 to 6 lb., for private use, to be sent by rail.

Class XI.—Examples of the enemies of the Grape Vine: Diseases, injuries, insects, &c.

Arrangements for the Conferences.

Dahlia Conference:—Tuesday, September 23. The Conference will begin at 2.30 p.m. punctually. Mr. Harry Turner, F.R.H.S., President of the Conference, in the Chair. Papers will be read as follows: Mr. Shirley Hibberd, F.R.H.S., "The Origin of the Florists' Dahlia." Mr. T. W. Girdlestone, M.A., F.L.S., "Single and Decorative Dahlias." Mr. W. H. Williams, F.R.H.S., "Show Dahlias." Mr. C. Harman Payne, F.R.H.S., has kindly promised to exhibit a very large collection of coloured drawings.

Grape Conference:—Wednesday, September 24. The Conference will open at 2 p.m. Dr. Hogg, F.L.S., F.R.H.S., President of the Conference, in the Chair. The following papers will be read:—Mr. T. F. Rivers, F.R.H.S., "Cultivation of Grapes." Mr. R. D. Blackmore, F.R.H.S., "The Enemies of the Vine." Mr. W. Thomson, F.R.H.S., "Soils and Manure." Mr. W. Coleman, F.R.H.S., "Packing Grapes."

Intending exhibitors are requested to communicate with Mr. Barron, Superintendent, Royal Horticultural Society Gardens, Chiswick, on or before Friday, September 19, stating the classes in which they propose exhibiting, and giving an approximate idea of the amount of space they will require.

"Kew Bulletin."—The August number contains articles on Natal Aloes, formerly obtained from Aloe ferox, but of which the manufacture is now discontinued. Gambia Mahogany is reported to be the produce of Khaya senegalensis, a handsome tree, which forms the principal feature of the forests of Bargny on the Gambia. Its timber is like Mahogany, and almost equally valuable. The leaves of Ramie, Bœhmeria nivea, a valuable fibre-plant, are stated to be valuable, as affording food for silkworms.

Linnæus.—The *American Florist* says that a statue of Linnæus will shortly be placed in Lincoln Park, Chicago, as a gift from the Swedish residents in that city.

Railway Trains obstructed by Caterpillars.—Those who remember George Stephenson's famous dictum, that it would be "so much the waur for the coo" if that animal ventured to cause obstruction on the line, will be disposed to regard the above heading as too much of an American tale to be accepted literally. Nevertheless, it appears to be strictly and literally true. The twentieth annual report of the Entomological Society of Ontario, (Canada), deals with the matter in sober earnest, and names the obstructor as the forest tent-caterpillar (Clisiocampa silvatica). The rails and driving-wheels were rendered so greasy by a layer of caterpillars—in places half an inch thick—that the train was brought to a standstill. For a distance of eleven miles the obstruction continued, and a second engine had to be employed, while labourers endeavoured to free the rails with switches of Alder.

The Origin of the Bordeaux Mixture.—Great discoveries are frequently made by accident, or, at least, by indirect means. It appears that the mixture of copper-sulphate and lime which is proved to be so valuable for the Vine-mildew, Peronospora, Potato-mildew, as well as for insects, was, first of all, used in the vineyards near Bordeaux to keep off thieves! The outer rows of the Vines were sprayed with this substance to render the berries distasteful to marauders. After a time it was discovered that these outer rows did not suffer from the mildew, whilst the inner rows, which were not washed with the copper solution, suffered; and this particular mixture, says Professor Riley, has since remained at the head of the cheap remedies for many fungous diseases.

Night-flowering Cereus.—Mr. E. F. Guy obligingly sends us a photograph of this glorious flower from The Grange, Bury St. Edmund's. We can remember seeing some two dozen blooms open at

one time in the Exotic Nursery at Canterbury, many years since, and more than once have we sat up till the small hours of the morning to witness the magnificent sight and watch the movements of the stamens. On one occasion it fell to our lot to have to notify the fact of the opening of the flower to some of the cathedral dignitaries, and to summon them to come and witness the magnificent spectacle. Mr. Guy writes:—

"I have for some years grown and flowered the night-blooming Cereus (Cereus grandiflorus), but as it never opens its flowers until late in the evening, and then lasts so short a time, it becomes more of a curiosity than an ornament, as it necessitates the use of artificial light to see it when fully expanded. However, a few evenings ago, two flowers in my greenhouse opened in sufficient daylight to enable me to secure a photograph, a print of which I enclose. The flowers are large, about a foot across, and exhale a faint perfume of Vanilla. I find that with liberal treatment (*i.e.*, top-dressing of well-rotted manure, and plenty of water at the growing season), it flowers quite freely, and the bud, if cut when partly opened, and taken into the dwelling-house, will open freely in the lamplight, and remain so for an hour or two."

Mr. John Buchanan. — The Companionship of the Order of St. Michael and St. George conferred on this gentleman, marks a step in a useful and adventurous career. During the late troubles with the Portuguese in Nyassaland, it was mainly Mr. Buchanan who guided the government at home by a series of valuable despatches, which on several occasions could only be sent through the enemy's country by secret messengers. Mr. Buchanan also acted as the adviser of the native chiefs and tribes, his policy consisting in avoiding war and bloodshed, by getting the people temporarily to retire into the interior when their territory was illegally invaded by the Portuguese. The confidence which he inspired them with in British protection has been justified by the happy course of events. Mr. Buchanan was, we learn from the *Strathearn Herald*, originally educated at Muthill, under Mr. Girdwood, and trained in Drummond Gardens, under Mr. Macdonald. In 1876 he went to Blantyre, as gardener and agriculturist to the Mission, which he served faithfully for five years, and then bought land and stock of his own, so that now he is the largest Coffee planter in the country—setting up his own mills both for coffee and sugar. He is also a scientific botanist, having been the first to introduce Strophanthus as an article of commerce for medical use. From time to time he has for years past been in the habit of sending home to the Botanic Gardens of Edinburgh and Kew collections of African plants, accompanied by careful notes and articles on their classification, habits, and capabilities.

Gardeners' Royal Benevolent Institution.—We are glad to learn, that by permission of Sir Greville Smythe, the gardens at Bower Ashton, near Clifton, were thrown open to the public on the 23rd inst., on payment of a small sum, the receipts being handed over to the Institution. We learn from Mr. Bethell that, in spite of a wet morning, the net sum obtained for the Institution amounted to £15. We trust many gardeners will follow Mr. Bethell's example, and induce their employers to open their gardens for one day for so excellent a purpose.

Valenciennes.—An international exhibition of fruits, vegetables, and cut flowers, will be held in this city from September 28 to 30, and a special international exhibition of Chrysanthemums in the same city from November 23 to 25 inclusive. The Secretary is M. Lemaille, à Beuvrages, near Valenciennes.

Proliferous Barley.—Messrs. Carter & Co. send us a branched spike of spring Barley. A similar condition is not uncommon in Wheat, and one form of it is absurdly called Mummy Wheat. It seems as if the production would be increased by this branching, but we presume there are compensating disadvantages, as the proliferous Wheat has never come into general use in these latitudes.

The Weather during the past week has been very cold, wet, and unseasonable about London. On Sunday afternoon a terrific thunderstorm visited the southern portions, and rain and hail fell heavily, doing serious damage to plants. In certain parts of Kent much damage to the fruit and Hop plantations was done on the same day. The night of August 24 (Sunday) was very cold, the thermometer in a sheltered position at Chiswick registering as low as 35° Fahr., and on succeeding nights the temperature has been but little above that.

A Reminiscence of Roezl.—Mr. T. Meehan sends us the following interesting note:—"The *Gardeners' Chronicle* (p. 134) quotes from the Bohemian *Casopis* that the designs in honour of the late Benedict Roezl represent the botanist 'at work in appropriate costume, carefully scrutinising some of the treasures discovered by him.' It forcibly brings to my mind my first introduction to him, under somewhat romantic circumstances. I was collecting on the right bank of the Missouri River, about 150 miles above St. Louis. I had just come unexpectedly on what was an exceedingly rare Oak in my own State of Pennsylvania—Quercus prinus acuminata, as we then knew it—and was resting on a rock, noting the differences between it and the common Chestnut Oak, when my attention was drawn to a rather roughly dressed man, kneeling on one knee over a shallow stream of water, rubbing something together between his knuckles, as a woman would wash clothes. Not expecting to see any human being in that lonely wilderness, I went to him, and found to my great delight, I had caught Benedict Roezl. It was strange to me, a thousand miles away from home, to meet one of whom I had heard; as it was to him, still so many more miles away, to meet one who seemed not wholly unknown. He had met with some strong plants of Laportea canadensis, a near relative of the Bœhmeria nivea, or Ramie plant, and he was full of the idea that the fibre of this plant was as good as Ramie. He had washed out of the pulp several ounces of the fibre, and together we tested its strength by tying large stones to the ends, to ascertain what it would bear without breaking. The slender silk-like fibre exhibited great strength. He was sure he had discovered something of great value to humanity, but I never heard that anything came of it—at least, as regards this particular plant. This must have been over a quarter of a century ago, and, of course, before he lost his arm, which, curiously enough, was, I believe, while experimenting with the fibre of the Agave. Your reference to his attitudes brought vividly to mind the picture of that lonely man bent over a spring of water as I saw him that day."

The British Fruit Growers' Association.—The arrangements for the September conferences of the above Association are as follows:—Crystal Palace, September 5, at 3.30 p.m., W. Rait, Esq., in the chair. "Ireland as a Fruit Growing Country," by Messrs. Gordon and Castle; "Peaches and Nectarines," by Mr. T. F. Rivers; "Plums for Market," by Mr. J. Smith, of Mentmore; and "Cherries for Market," by Mr. G. Bunyard. At Brighton, on September 10, in conjunction with the show in the Royal Pavilion, a conference will be held at 4 p.m., at which the Mayor of Brighton has kindly consented to take the chair.

"Wattles and Wattlebarks."—Under this title Mr. Maiden, whose valuable work on the useful plants of Australia we noticed some time since, has published a pamphlet which should be of great value to Australian farmers. "Wattles" is a term applied to various species of Acacia, the bark of which contains tannin in sufficient quantities to be used by the tanner. Mr. Maiden, following in the steps of Baron Von Mueller, gives details as to the points of distinction and commercial value of the species. The whole paper is an interesting example of the way in which scientific knowledge, botanical and chemical, may be applied to commercial agricultural purposes. When the percentage of tannin varies in different species from 3 per cent. to 46 per cent., it will be seen that botanical discrimination becomes very important. The Sydney Technical College, from which this publication emanates, seems to be doing good work.

The Scottish Horticultural Association.—The schedule for the Chrysanthemum show to be held in the Waverley Market, Edinburgh, on November 20, 21, and 22 next, is published. About £400 in money and plate are offered in prizes. £40 are offered for the best forty-eight blooms (Japanese). This is named "The City of Edinburgh Prize." The first prize of £20 is presented by the Lord Provost, magistrates, and councillors of the City, and open to all. "The Scottish Challenge Cup," open to Scottish gardeners and amateurs only, includes the Cup of the Society, the National Chrysanthemum Society's Centenary Medal, and £5 for the best thirty-six blooms—eighteen Japanese and eighteen incurved. £20 in four prizes are offered for eight bunches of Grapes, not less than four varieties. The Gold Medal of the Society being offered for a table of home and foreign fruit, ripe or unripe.

East London Boulevards.—The improving spirit has at length taken a firm grip of the governing bodies of London. Within the past few years scores of acres have been handed over to the community at large, without hindrance or qualification of any kind. In some few instances, property has been acquired at a ruinous rate to be transferred into public spaces. There are circumstances and conditions under which the governing body of this city would be almost justified in laying violent hands upon the property which has become valuable only as a consequence of the progress and extension of London. Our forefathers made but little provision for posterity in the way of parks and public spaces, and posterity, therefore, has to pay "through the nose" for its breathing spaces. But the most expensive plot of land converted into this purpose cannot but be a good speculation, for the health of the toilers in great cities and large towns is one of the utmost importance. It is for this reason, if for no other, that we heartily welcome the proposal which is about to be made for converting the banks of the River Lea into boulevards for the recreation of the inhabitants of East London. It is intended to acquire the interest in the lammas lands, extending for upwards of 12 miles, and to lay the ground out as parks, cricket fields, and so forth. The idea is really a somewhat tremendous one, but the most careful inquiry and calculation have led us to the conclusion that it is not only perfectly feasible, but that it must be carried out to the letter. The idea is bound to receive the assent of all parties, for the advantages to be gained in many ways are simply incalculable. Much of the land which it is intended to utilise in the manner briefly indicated, is absolutely valueless under the present condition of things. The course which will unquestionably take effect sooner or later will not only transform a dull and dangerous portion of the country into a series of charming boulevards, but it will have the effect of immediately enhancing the value of the property in the vicinity. But upon sanitary grounds, the improvement which is as yet in embryo ought to be effected.

Messrs. J. Carter & Co. have at their nurseries at Forest Hill, a good lot of their Tomato Blenheim Orange. It is evidently a free-fruiting sort, and, where exposed to the sun, assumes a red flush. It is recommended as a dessert fruit, and has a sweet, soft flavour, and a smooth skin; it certainly is not a good variety for the nurseryman, as it produces hardly any seed. Sandwich Island is a red variety, and bears moderate-sized fruits. Among other things to be noted are the Petunias, including the recently exhibited blue variety, which is an acquisition; a large lot of Model Cucumber, seeding within twenty-eight weeks of sowing the seed; and in the open is a large breadth of Duchess of Albany (Daisy) Pea, a dwarf variety, which carries good crops.

THE FRUIT CROP IN NOVA SCOTIA.

We have been favoured by the Agricultural Department of Nova Scotia with the following statement, which will be of interest to dealers and growers on this side of the water:—

"Owing to the lateness of the season throughout May and June, the returns received at the end of the latter month were not as fully indicative as usual of the season's crop. The fruit crop differs from all others in this respect, that if the trees are not well set with fruit in spring, no after-conditions throughout the season, however favourable, can greatly swell up the yield. On the other hand, the fruit may set well; its maturation will depend upon the after-climatal conditions of the summer and autumn. The returns show a great increase in Apple orchards in Antigonish and Cumberland Counties. There is also a considerable increase of area in King's, not so much in Annapolis. There was fair promise in June of at least an average fruit crop this year, but the later returns show a serious change for the worse. This will be seen fully by comparing the indications given on pp. 39 to 41 of the Report with the following more recent returns received at the end of July and during the present month of August.

As regards Annapolis County, the report from Lawrencetown is that Apples set badly, and many are dropping now. It is thought the blossoms were damaged by cold. What with caterpillars and drought, there must be a shortage of from 25 to 40 per cent. In Nictaux (July 31) a great change had taken place in the Apple orchards since the previous report; at first they promised an abundant yield, but indicate at present not more than 60 per cent. of an average crop. The following supplementary report is from the Rev. J. R. Hart, Bridgetown, July 30, 1890:—In this district, Apple trees blossomed very freely. A number of orchards were attacked by forest tent caterpillars and canker-worms. Fully 10 per cent. of the trees were either entirely stripped of leaves or so far injured that no fruit set. Even where London Purple or Paris Green were used, and the foliage, in part, saved, the trees appear to have so much suffered that little fruit formed upon them. There was a great wealth of foliage upon all trees, and where they were not almost completely denuded of leaves, they have made a very rampant growth. Because of this abundant foliage, it was difficult to tell till recently whether fruit had well set or not. Now that Apples are showing some colour and size, it is evident that the crop will be very light. While we must ordinarily take into account the new trees just coming into bearing, we may omit them in our estimate this year; young trees, as a rule, are without fruit. The dry weather in the latter part of June and the greater part of July has caused much fruit to drop from the trees.

	Quantity.	Quality.
Nonpareil	40	100
Baldwin	30	100
Ribston	25	75
King	30	75
Bishop Pippin	20	60
Golden Russet	25	100
R. I. Greening	40	75
Gravenstein	50	75
Pears	75	100
Plums	50	100

King's County affords a somewhat similar prospect. Mr. Leander Rand writes, July 31, from the Cornwallis Valley Dairy and Fruit Farm, Canning, that Apples will be about half of usual crop. Gravensteins are especially poor. Small fruit, a fair crop. Pears and Plums, a small crop. The canker-worm and caterpillars made bad work with quite a number of orchards. Some were entirely stripped of their foliage. Mr. R. does not think the English sparrow fancies the taste of either, for he has not been noticed to do anything to destroy them. Where there is an abundance of both caterpillars and sparrows, they appear to be the best of friends, neither offending the other. At Tatamagouche (August 4), Apples are a very light crop, and Plums a failure. At Shelburne, Apples, which are being raised more extensively than formerly, are an average crop; Plums 10 per cent. below. In Pictou County (Western Pictou), late frosts injured the fruit crop. Apples probably a half crop; stone fruit a failure; small fruits a light crop; fruit crop average, say, 60 per cent."

POTATO DISEASE.

It is even now not too late to do something towards saving some proportion of the crop in Ireland and elsewhere, where the tubers are not already rotten, by means of the Jensen system of earthing-up, so that

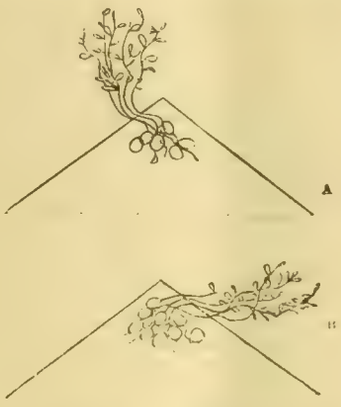


Fig. 41.—To illustrate the Jensen system of moulding. A, with the tops left erect; B, with the tops bent downward.

the tubers are well buried up and kept out of the way of the rotting haulm. We believe the system would be specially useful to cottagers and small growers. Although we have repeatedly called attention to the matter, the case is so urgent that we need not apologise for reproducing the illustrations showing the method of procedure, and for again adverting to the very remarkable results that were obtained at Chiswick by a simply devised experiment suggested by Mr. Plowright, when 16 per cent. of the tubers

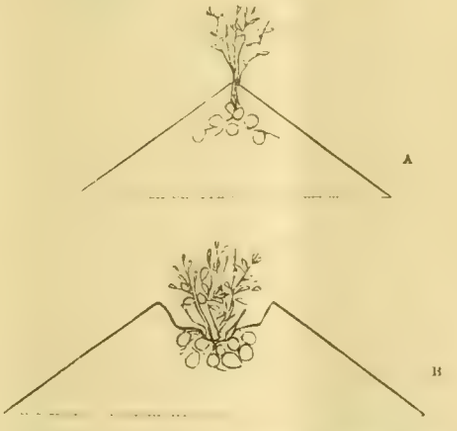


Fig. 42.—To illustrate ordinary moulding, where the tubers are more or less exposed or so placed as to allow of ready access of the spores of the fungus.

were rescued when the case seemed utterly hopeless. We are glad to learn that the experiment is in course of repetition this year, but, unfortunately, the results cannot be known in time to be of service. Meantime, it is important to note that the Chiswick experiment, which was so remarkable in its results, was foreshadowed by the results of the elaborate experiments carried out in previous years, and on a larger scale, at Chiswick, but which did not offer sufficient evidence, one way or the other, owing to the relative absence of disease in those years. See also Mr. Wright's observations in the report of the Scientific Committee on p. 252.

HOME CORRESPONDENCE.

WOMEN AS GARDENERS.—The subjoined paragraph is taken from the *Manchester Evening Mail*, of August 18. I think the lady's experience of male gardeners must have been so very limited, that indeed she never possessed one. I should like to see a "Lady" gardener gathering Peas on a wet morning, or having to work amongst a flat of Broccoli in October. "It may interest some of my readers (says a gossiper), to know that the lady who recently advertised for a lady gardener is already, in her capacity of the editress of the *Woman's Penny Paper*, a considerable employer of female labour, and, doubtless, it is her pleasant experience of ladies as reliable workers which makes her anxious to employ one in quite a different field of labour. She and her staff work together upon the most friendly terms. I was only talking to her last week about lady gardeners. She declared the terrible experiences she had undergone of male specimens of the genus thoroughly disheartened her. They were all lazy, untrustworthy, and knew as little about flowers, as a rule, as a bull in a china shop. It was in despair that she determined to give up the male gardener, and advertised for a lady. The number of applicants was legion. Many were clergymen's daughters who had gardened all their lives, with help, in their fathers' gardens. She was occupied two days in seeing them all, and has engaged one. She already employs two lady helps who manage her house, and it works admirably, and the store of home-made jams and jellies which her industrious lady housekeeper made for her last season fairly astonished me as I looked into the well-stored cupboard, and saw the piles upon piles, all neatly labelled and put away. They were all made out of the fruit gathered from her own garden. There is a flavour of real English domesticity about this delightful picture of the English garden tended and cared for only by ladies, which is truly refreshing in these days." *S. W.*

BIGNONIA PURPUREA.—In this species we have a plant much more amenable to cultivation than many other members of its family. It requires more warmth than is usually afforded in an ordinary greenhouse, the intermediate-house being its proper place. It is a free-grower, but has not that grossness of habit characteristic of some of the species, such as B. Cherere; moreover, it is more floriferous than most of the genus, and flowers about the end of August, when distinct good-flowering climbing plants are not over plentiful. It is seen to best advantage when treated as a rafter-climber in a fairly lofty house, where the secondary shoots are allowed to hang down loosely for about a yard, the greater part of which ought to flower. The flowers are produced in flattened panicles of from six to twelve blossoms in the axils of the leaves, the leaflets being about 2 inches long by half that breadth, firm and leathery, indicating adaption to full exposure. When well grown, the colour of the flowers is a light yet rich purple; the interior of the tube is shaded to white, with reddish-purple longitudinal lines; the fine rounded segments of the limb are notched at their apex. The flowers measure about 2 inches across. Cultivation is simple and easy. Any fairly good loamy compost would do; and, if possible, it should be planted out. Any pruning required should be done just after flowering; afterwards the growths would need regulating, and perhaps a few of the weaker may be cut out—these, if it is desired to propagate, are easily rooted. *F. R.*

THE HARDY WHITE PASSION-FLOWER CONSTANCE ELIOTT.—I was interested in the paragraph at p. 619 of the last vol., by Mr. Evans, concerning this climbing plant. Its merits and great beauty have been frequently noted in more than one way, and it is now pretty generally known how I discovered this charming plant in Devonshire in 1882, when travelling for Messrs. Lucombe, Pince & Co., of the Exeter Nursery. It is, I believe, the last of the many good things introduced by that old establishment. In 1884, the Royal Horticultural Society bestowed on it a First-class Certificate, and it was figured and described in the *Gardeners' Chronicle* about that time, the *Garden* also publishing a coloured plate. Since then it has spread, especially in America, where I am told it is even better known and appreciated than it is in this country. It may

be interesting to record that it was named after a Mrs. Eliott, of Exeter, an English name having been suggested as preferable. The name is often wrongly spelt in the gardening papers with two "l's", and at Kew Gardens the fine specimen there was also incorrectly labelled. Of course, this is but a trifling error. A man named Fuller is reputed to have raised it from a seed of the common blue Passion-flower; there is, however, some doubt on this point, and for my own part I do not believe this person has any claim whatever to such honour, for I possess two letters which were written to me in 1887 by a Miss M. F. Morris, of South Hill, Lustleigh, Devonshire, in which she says:—"The story of the white Passion-flower is as follows: in 1879 I lived at Forde Park, Newton Abbot, and in the garden found a stump, with no appearance of life. Being near the water-cock, I threw gallons of water on and around it, and about the first week in September I picked the lovely white bloom, on what I had taken for an ordinary Passion-flower. The stump looked as if it had seen many summers, but neither I nor my friends ever saw a bloom like mine, which till known in the market as Constance Eliott, always went by my name, and I gave many plants away. Fuller had nothing whatever to do with mine, or I with his; mine was blooming in 1879, his in 1882. How he got his I had no knowledge of, except his naming it to me one day." *W. Napper, Chelsea.*

JUDGING POTATOS.—Some judges of Potatos adopt the practice of cutting open a tuber in each dish of Potatos, whether shown in collections of several varieties, or in one dish only. This practice was carried out at Taunton, where Potatos are largely and finely exhibited, twelve tubers forming a dish. If the cut tuber showed any flaw in the inside, the dish was passed over. This seems to me to be unfair, because if it be necessary to cut Potatos, all, and not one only, should be cut; a second and third Potato might show altogether different results. I cannot think any cultivator has control over any inward flaws in his tubers. I think the old Crystal Palace plan, of judging solely from their external appearance, is sufficient. One result is, that the best samples of the finest quality are sometimes set aside, and inferior ones selected for prizes. *R. D.*

LIQUID MANURE IN GARDENS.—One of the common mistakes made by amateurs is over-manuring. To grow plants properly, little or no crude manure should be incorporated with the soil, as it induces a too luxuriant growth of foliage and wood, greatly at the expense of the flowers. That the liquid form of manure is the best to apply there can be no doubt, and this should be in a weak form if it be of a very stimulating character. The great value of liquid manure is, that its effects are under control. If wood and foliage be desired, manure should be given soon after the buds begin to swell in the spring, or when the leaves begin to develop. The vigour of growth can be maintained during the season by frequent applications of the liquid; they should cease about the first or second week in August, as growth naturally decreases then, and the wood begins to harden. When the production of extra fine blooms is desired, liquid manure should be applied when the flower-buds begin to show themselves prominently, and commence to swell; but, if applied too early, it is liable to produce monstrous flowers. Some plants, such as Tulips, Hyacinths, &c., form an exception, the strength of the flowers being wholly dependent upon the luxuriance of the previous year's leaf-growth. In these cases, the applications should be continued for some time after they have done blooming. When applied to fruit trees the best time for its application is after the fruit has commenced to swell, but a little weak manure-water applied to old trees which are flowering freely will greatly assist them. If the manure be too strong, a too luxuriant leaf-growth is brought about. As the season for the maturing of the fruit approaches, the supply should be reduced, otherwise the fruit becomes watery, and never attains its proper flavour. If the trees be old and well rooted, the borders are invariably hard, and the best way of applying liquid manure to trees is to make holes with a stout stick, about 1 foot to 18 inches deep, near them, or near the limits of their root extension. The holes should be about 2 feet apart, and may be filled with liquid manure; it will soak away into the soil immediately in contact with the roots. We have good cement tanks, built for the reception of all waters from the stables; of course, these waters are strongly charged with ammonia, very stimulating to all trees and vegetables. The safest way, I find, in applying this, is one part to six of water; of course, many plants of the strong growing Brassica tribe will take the crude liquid. I would recommend everyone to make receptacles of some kind for the preparation of liquid manures for outdoor purposes, the following quantities to a hogshead of water:—8 oz. to 60 gallons will produce the average strength, to be applied about every nine days or a fortnight; one bushel of horse, sheep, or deer manure, or half a bushel of hen or pigeon manure, 8 lb. of guano, or half a bushel of soot; this must be allowed to stand two or three days before using, stirring it once a day, and using the clear liquor. *A. Evans, Haslemere.*

THE OAK CATERPILLAR.—In last week's issue, Mr. J. T. Eccleston, of Canwell Gardens, Tamworth, asks if there is any remedy for the caterpillars or maggots on Oak trees, which are there terribly infested. The damage is doubtless due to the caterpillars of Tortrix viridana, which feed in such numbers on the young leaves as to strip the trees of their foliage, and retard the growth of the first shoots, entirely ruining the Acorn crop of the season. Where practicable, shaking the branches has a good effect; the caterpillars drop down by silken threads, and should be collected and destroyed. In the case of young trees, drenching by means of a large garden-engine, with washes of soft-soap, sulphur, soot, and gas-water, would probably be the most effective remedy. I believe Fir-tree oil is a remedy which proves successful when used as a solution of 1 pint of the oil to 4 gallons of water, and applied with a syringe, but the cost of the oil does not permit it being used on large trees. *J. J. Willis, Harpenden.*

POTATO DISEASE.—"A. D." makes an attempt to refute my previous remarks anent Potato disease. At the age of 21, I began a fourteen years' charge of, and the manipulation, distribution, &c., of 6 acres of field and garden-grown Potatos, amidst trying periods of disease, &c. Towards the end of that time, I exhibited successfully in the metropolis, and elsewhere, collections of tubers at the very commencement of modern Potato exhibitions. Joining the Chiswick committees, I had the advantage of judging what the annual displays grown thereat were worth; then came the International Potato Committee. During the last decade, though I have been one of the judges of market-garden farms, for the Royal Agricultural Society have taken a prominent part in the Potato Centenary, vegetable judging about the country, &c., I have ceased to exhibit, owing to the heavy pressure of other duties. I, nevertheless, reside in the centre of some 2000 acres of market-garden farms, whereon many 20 to 30 acre plots of Potatos are grown. I cultivate my own supplies, &c., and should certainly be *au fait* in practical modern culture. So much for blindness in connection with the subject I have written about. "A. D." says large growers cannot clamp their produce in bulk, lest they rot. He seems unaware of the fact that modern stores are clamped on level surfaces nearer to the surface of the ground than of yore; the rows being narrower, and piled up higher. There can be no difficulty, therefore, in digging early, clamping in this wise, covering with litter for a few weeks, then shoveling all over from end to end for removal of infected tubers before final covering for the winter. I once saw thirty tons shot into a hole on "A. D.'s" plan, and covered over with a mass of straw and soil, produce a mass of steam, and when opened all was heat, and putrescence. In my late remarks, I advocated barn or shed storing as a preliminary where possible, owing to heavy rainfalls, and because I knew hosts of private growers amongst the readers of the *Gardeners' Chronicle* could follow the simple plan. "A. D." says, early sorts only show signs of disease, or are smitten with it. He appeared ignorant of the fact that late sorts had not arrived at the stage of growth when the attack invariably commences. As I write, a 30 acre plot of Magnum Bonums, in the field adjoining my paddock, and to windward, is so smitten as to discharge a most offensive odour, which, added to that from other plots, pervades the district. Yet a few short weeks since they looked charming, in pristine green, with unwonted vigour. Again, "A. D." writes of somewhat early dug Potatos, as being "unfit for food." Yet from the earliest dug kidneys, onward, during the months of June, July, and August, millions of his countrymen consume green tubers with pleasure beyond what they derive from late storings. It is the all-but-matured tubers, I suggest, should be dug before they are destroyed wholly by this pestilential disease. Now, I did not advise digging crops so badly smitten as to inevitably turn putrid when in clamp. My suggestion is, even though the haulm appear green, if the tubers are grown to goodly size—the haulm meantime losing its original greenness, which is a sign of preliminary ripening and that it has done its duty, digging can be done, and a good crop of sound tubers secured. Again, even when the first spots of disease are detected, dig them immediately, before the myriads of spores engendered have time to find their way to the tubers below. In the latter case, all will not be saved, but, on an average, not more than two or three per cent. will be destroyed. The three-quarters of a ton of Hebrons I had dug on St. Swithin's Day, tossed into a dry corner and covered over, were not looked at until Saturday last. They were then shovelled over, and bad tubers removed; and, in view of this controversy, I had the latter weighed, and they barely made 9 lb. all told. The bulk is again covered over, and will not need further attention during use until after mid-winter, when sprouts must be rubbed off. It is interesting to know Mr. McKinlay, on eof our best exhibitors, believed in early digging, and that Potato-seed growers practise it, even though, on the score "'tis an ill wind blows no good," they may draw a bait of another kind across the advancing improvement begun or contemplated by market or home growers. I send the Editor two or three middle-sized tubers of Hebrons and Magnums, dug on St. Swithin's Day, to show they are firm, weighty, and how admirably new skins have taken the place of all patches rubbed off in process of early digging. *William Earley* [Good samples. Ed.]

ANDROSACE LANUGINOSA AND VAR. LEICHTLINI.—This is a charming plant for the rockwork, and is deserving of general cultivation. It has umbellate, light rose-coloured flowers, with a yellow eye, and is prostrate in habit, with small leaves covered with soft, silvery hairs. It should be planted in a sunny situation in a compost of loam, leaf soil, and sand, with some pieces of rock broken up finely and added to it. When established it will thrive with very little water, unless the position be a very dry one indeed, growing freely and covering the face of the rockwork. During the winter the plant is all the better for being protected by a piece of glass placed above it. There is a variety named Leichtlini. Whenever we find the name of Leichtlin attached to a plant we are pretty safe in conjecturing that it is something worthy of cultivating, and this statement is fully borne out by this charming and distinct variety, which is not yet in general cultivation. It differs from the species in having white flowers, some flowers having a yellow eye, while the majority have a deep rose colour—one on the same umbel. The leaves are less woolly, not of the silvery character of its parent, and this darker green contrasts well with the flowers; and those who grow the type let me also advise to grow the variety. *W. Harrow, Botanic Garden, Cambridge.*

LILIUM AURATUM PLATYPHYLLUM.—At a recent meeting of the Royal Horticultural Society at the Drill Hall, Westminster, I noticed this Lily in Messrs. J. Veitch & Sons' collection, and the same evening I saw a plant of the same variety growing in a small front garden in Brixton. I take it that the plant is a chance break from the ordinary auratum; anyhow, for outdoor culture it appears to be especially suited, the spike and leaves also are larger, stiffer and more defined than in the general type of auratum. The blooms, too, stand out more stiffly, but there is no difference in the colour than can be found in the ordinary types, but on account of its sturdiness it is worthy of cultivation. *S.*

A POPULAR FLORA.—The well-known French bookseller, M. E. Rolland, of the Rue des Chantiers, Paris, is publishing in monthly parts, and under the title of *Variétés Bibliographiques*, a very interesting and useful "popular flora." This flora gives as far as possible all the common names of, and also all proverbs, stories, and superstitions relating to plants, flowers, and trees in various parts of the world. M. Rolland has already published in six volumes (1877–1883) *Une Faune Populaire*, and it is only natural that the same attention should be paid to the vegetable kingdom. The generic classification followed is that of M. Candolle, *Théorie de la Botanique*, 1819, whilst the arrangement of the species is based upon Dr. Nyman's *Sylloge Floræ Europeæ*, 1854–55. As an example—an extreme one certainly—it may be mentioned that over 200 common names are enumerated for Clematis vitalba. Some of these names

show an obvious resemblance to one another—so close, indeed, as to be scarcely worthy of independent mention. The Spanish and Italian names show a marked resemblance to the specific name, of which, indeed, they are only mere corruptions. Extracts from German, French, and Italian authors are quoted in the section devoted to the "usages de la clématite grimpante." The "folk-lore" of this plant, which Gerarde named Traveller's Joy, because he himself loved to see it "decking up the waies," is, curiously enough, confined by M. Rolland to a short paragraph which appears to be derived from a manuscript in the *Bibliothèque Nationale* at Paris. The legend is so pretty, that it may be given here in its entirety:—"Le rossignol chante la nuit parce qu'autrefois il s'endormit sur une branche d'arbre, où il y avait une *guidalbe* [Clematis vitalba]. Les vrilles de cette plante grimpèrent pendant la nuit et lui entortillèrent tellement les pattes qu'il ne put s'envoler; aussi pour éviter d'être ainsi retenue pendant la nuit, il chante: '*dormirai pu, pu, pu . . . . me toursounaio la vi!*' (Je ne dormirai plus, plus . . . . m'entortillerait la vigne!)." *W. Roberts.*

ANDROMEDA HYPNOIDES, AND DIAPENSIA LAPPONICA.—Again, these two pretty Scandinavian plants have come to me from Norway, but I search in vain for any instructions as to their cultivation, in which I have hitherto failed. Loddiges, who figures the Andromeda, says that it must be grown under a bell-glass in the shade, but I have tried this. The suggestion, however, indicates one necessary condition for these Norwegian plants, viz., an atmosphere charged with moisture in which little or no evaporation takes place. It is difficult to supply this in England without including stagnant air, always bad for alpines. Any hints that readers of the *Gardeners' Chronicle* can give would be acceptable. *C. Wolley Dod.*

TROPÆOLUM SPECIOSUM.—With reference to the remarks in last week's issue, I may say that I have grown this plant for over thirty years, and have always found it quite hardy. The only secret in growing this beautiful climber to perfection is, to plant it close to any shrub right in between the roots, and let it grow. In two years it will cover a Box tree 6 or 7 feet high. I always leave its old stems on. I have now in full bloom a specimen only planted two years since. It is on an Arbor-vitæ (Biota orientalis), 8 feet high. I planted at the same time some roots on a rockery with hardy Ferns, where it grows like the common Bindweed. It likes leaf-mould and rough sand to grow in, and I always lay a few large stones over the root when planting. Seed ripens about September; they soon drop, and come up freely the next spring, if sown in any light soil. *Wm. Smythe, Basing Park Gardens, Alton.*

ROSCOEA PURPUREA VAR. SIKKIMENSIS.—I am able to confirm Mr. Elwes' statement, that the variety of the above plant, introduced by him from Sikkim, is very distinct from that hitherto cultivated under this name, and which I suppose to be the type. Eight or ten years' since, I procured from a leading Dutch firm the plant offered by them as Roscoea purpurea, and it still remains one and indivisible. Although treated as a greenhouse plant, it started so late in spring, and its growth was so restricted, that I have never ventured to plant it out till the present season. The solitary stem is scarcely more than half the height of those of the Sikkim plant, but its flowers are rather larger, with a longer and broader lip, and a stouter tube. The colour, too, is strikingly different, being a very pale lilac; by no stretch of meaning can it legitimately be called purple. The specific name is far more appropriate to the Sikkim variety, which bears flowers of the deepest violet-purple, somewhat smaller, and with slenderer tube. Each tuber throws up several stems, and from each spathe from ten to twenty flowers are produced. It has succeeded very well in shallow sandy loam, getting all the morning sun, but shaded in the afternoon by a hedge. As to its hardiness, I believe it will need only a covering of ashes in the southern half of the Island, to judge from my own experience; but no plant can be preserved in dry soil with greater readiness, if soil or climate render it desirable to lift it in winter. Considering the notable differences existing between the typical form of this plant (or what I have assumed to be such), and Mr. Elwes' introduction, horticulturists may, I hope, fairly claim that the varietal name proposed by him should be recognised by botanists. *W. Thompson, Ipswich.*

PLANT PORTRAITS.

Angræcum citratum. This elegant little species, with pendulous racemes bearing numerous small, white flowers, is figured in the *Lindenia*, t. 238.

Aristolochia caudata, *Bulletino del. Soc. Toscan. di Orticultura*, June, 1890.

Azalea indica Mdlle. Marie Vervaet, *Illustration Horticole*, t. 104, flowers large, double, white, flaked with rose.

Bifrenaria Harrisonle. This handsome species has been referred to various genera; but under whatever appellation, the flowers remain conspicuously beautiful, with their broad ivory-white segments and 3-lobed lip, marked with purple veins. It is figured in the *Lindenia*, t. 239.

Cherry Governor Wood, *Canadian Horticulturist*, July.

A SCUFFLE HOE.

We copy from the *Canadian Horticulturist* a figure of a useful tool (fig. 43), which is not, indeed, new, as we remember such a one in use many years ago.

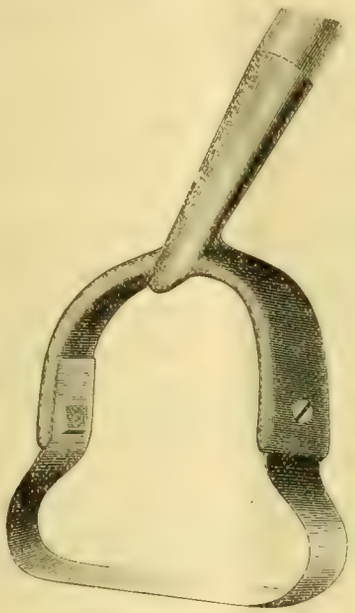


Fig. 43.—The Scuffle Hoe.

Its chief advantage is, that it may be used between the plants with little risk of injuring their leaves.

SOCIETIES.

ROYAL HORTICULTURAL.

August 26.—Exhibits staged for the inspection of the committees were not very numerous last Tuesday, but there were some interesting plants shown. Mr. J. Douglas delivered an interesting lecture on the Hollyhock, and reference to his remarks will be found on p. 246.

Floral Committee.

Present:—W. Marshall, Esq., and Messrs. S. Hibberd, W. C. Leach, H. Cannell, B. Wynne, W. Kelway, H. Turner, C. Noble, G. Paul, H. H. D'Ombrain, T. W. Girdlestone, J. Walker, and F. Ross.

An extensive collection of herbaceous flowers was sent by Messrs. Paul & Son, Cheshunt, and embraced a good number of Phloxes, the pretty Shirley Poppies, Helianthus multiflorus maximus, and the double form; Senecio pulcher, various Delphiniums, Œnothera speciosa, and others; Eryngium planum, Rudbeckia purpurata, Montbretia crocosmæflora, and many other showy flowers. Certificates being awarded to Potentilla formosa pallida, a variety bearing flowers of soft flesh-pink; and to Phlox Le Soleil, pinkish-rose, with a white eye. Specimens of Rose Bruce Findlay were also sent.

Perhaps the feature of the show was a remarkably fine lot of Gladioli, contributed by Messrs. W. Kelway & Sons, Langport, Somerset, and which attracted considerable attention. There were a dozen boxes of cut spikes in capital condition, and Pentstemons, pompon Dahlias, and Gaillardias were also sent. Certificates being awarded to a pompon Dahlia named Rouge Chauvrière, a medium sized flower, yellowish-white, with carmine tips to the petals; to Pentstemon Le Borda, a variety with large flowers of dingy claret colour, darker round the throat; and also to Gaillardia Wendell Holmes, crimson, with a narrow gold edge. Among the Gladioli, the variety named Baron Schroder stood out conspicuously by reason of its light but brilliant scarlet colour; and the twelve spikes shown each bore from eight to twelve flowers. It is a well-formed solid spike. Emperor of Germany is rich scarlet, with white on the throat; Baron Rothschild, intense scarlet, with a crimson flush in the throat, is also a showy flower; and in Jerome Kelway is a flower of flesh colour, flaked crimson, with a yellow throat.

Messrs. J. Veitch & Sons, Chelsea, sent a large number of cut branches of hardy ornamental shrubs, embracing many which deserve wider cultivation; they were from the Coombe Wood Nurseries of the firm, among them being Cornus siberica Spathii, a fine golden variegated form, and somewhat rare; Ulmus campestris Petersii, weeping form—very elegant; Stephanandra flexuosa, which forms a spreading, airy-looking bush, the stems of which are red, and the foliage red-brown. Several richly-coloured Acers, as A. colchicum rubrum and A. palmatum sanguineum; Salix laurifolia, with firm shiny green leaves; the bold-habited Daphniphyllum glaucescens, Quercus Daimyo, a Japan Oak with very large leaves; and as a contrast, Q. bambusifolia, with entire leaves; the Oak-leaved form of the Laburnum, which is a very elegant tree; Cydonia japonica Moerloosei in flower, the specimens having been cut from the same plant as those shoots which were exhibited at a meeting in the spring; Oxycoccus macrocarpa, the Cranberry, Hymenanthera crassifolia, which forms a dwarf compact bush, and bears a profusion of milky-white berries; the pretty Philesia buxifolia, with its red flowers; also numerous Eleagnus, and other equally handsome shrubs.

Dahlias were shown by several exhibitors, and were of good quality generally. Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, Sussex, had a collection of bright fresh flowers representing the single, pompone, and cactus sections. The single variety Eclipse is distinct, and is magenta-mauve, with an inner ring of red-brown. Northern Star, another single, is red-brown, with yellow margins to each ray, and is striking. Duke of Clarence is a fine rich crimson-black Cactus variety; Beauty of Brentwood, crimson-lake Cactus; Mrs. G. Reid, lilac Cactus; Mrs. Bowman, magenta-lake, single; and Gulielma, a recent novelty, white, with pale brown-yellow marginal bands (single), were also good flowers.

Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, sent single Dahlia Maude, white, with rich crimson margin to the rays—a very fine flower.

Mr. J. T. West, Cornwalls, Brentwood, had a fine Cactus variety in Mrs. Stanley, bright rosy-crimson; and H. Stanley, dark crimson, was another of the same section. And from Mr. S. C. P. Harris, Orpington, Kent, came some show blooms, including a fine bright yellow variety named Canary Bird, and Negro, rich crimson-lake.

A Cactus Dahlia, named J. Douglas, lilac crimson with a flash of buff colour, came from Messrs. H. Cannell & Sons, Swanley; and they also showed plants of tuberous Begonias from the open air and a few well-coloured Coleus.

Among smaller exhibits was a supposed hybrid Geranium, from the Rev. W. Wilks, Shirley Vicarage, Croydon. It had the general appearance of G. Wallichianum, but the flower is blue, with a white eye. The exhibitor believes it to be a hybrid between Endressi and one near armenum. Mr. Wythes, Syon Gardens, Brentford, sent Campanula pyramidalis and specimens of Mentzelea Bartinioides, a Mexican annual, with clear yellow flowers of good size. Messrs. J. Carter & Co., High Holborn, London, sent a tuberous Begonia, of nice compact habit and erect flower-stalks; a boxful of blooms of Lilium Wallichianum superba, rich creamy yellow, and a few of L. nepalense, yellow and purplish-brown, came from Messrs. H. Low & Co., Clapton, E. A few spikes of Gladioli were contributed by the Rev. H. H. D'Ombrain, Ashford, Kent. Mr. R. Dean, Ealing, had a white Aster and African Marigolds. A

few Hollyhock blooms came from Messrs. F. T. Smith & Co., West Dulwich, and from Messrs. Stuart & Mein, Kelso. Rose Duchess of Albany came from Mr. W. Paul, Waltham Cross; and from Mr. H. Herbst, Richmond, some cut flowers of Marguerite Carnations, from seed sown on March 2. Asters in variety were sent up from the Society's gardens, at Chiswick.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. J. O'Brien, J. Douglas, E. Hill, J. Dominy, H. Ballantine, L. Castle, and Dr. M. T. Masters.

Messrs. H. Low & Co., Clapton, sent a box of Vanda Kimballiana, in full flower, and a very pretty object it was too.

A few Orchids came from Messrs. J. Veitch & Sons, Chelsea, including an interesting hybrid Lælio-Cattleya Proserpine (C. velutina × L. pumila Dayana); the lip is intermediate in form, crimson, with white veins, and a yellow blotch in the throat; the sepals and petals are whitish, veined with rose, and full crimson at the base, and in their form partake of the Cattleya; the whole plant is about 9 inches high, leaves 4½ inches long, pale green. Cattleya velutina, Lælia grandis, and Cypripedium H. Ballantine were included.

From Mr. J. Douglas, gr. to Mrs. Whitborne, Great Gearies, Ilford, came a specimen of Cypripedium Numa; it has a large flower of greenish-yellow, heavily spotted and veined with dark brown, and leaves of pale marbled green.

Major Mawood, Whitby, Yorks (gr., Mr. Horner), had Cypripedium Mawoodi (niveum × Harrisianum), resembling the first-named parent in general, but the flower is covered with minute deep rose spots.

Some hybrids also came from Drewett O. Drewett, Esq., Riding Mill-on-Tyne (gr., Mr. Keeling). The Cypripedium Arthur (lævigatum × venustum) was a pretty flower; the dorsal sepal was acute and narrow, white, striped with green; petals green veined on white, with dark crimson spots at the base, crimson in the upper portion, the lip cylindric, olive, with green marblings, the unfolded lobes bright yellow. C. Constance (Curtisii × Stonei) is in form a rounded Stonei, with petals pale brown, densely covered with minute spots of brown. C. Alice (Spicerianum × Stonei) took strongly of the first-named parent in form, and especially in the dorsal sepal, white, flushed with rose; the lip and petals are brown, the latter organs bearing small spots.

From M. S. Cooke, Esq., Kingston Hill, Surrey (gr., Mr. D. Cullimore), came Lælia elegans, Cook's variety, the petals of which have assumed the colouring of the lip, and have become broader. Other varieties were also shown.

Plants of Cattleya gigas, with richly coloured flowers, C. aurea, the showy C. Hardyana and C. Massaiana, showing a mixture of rose and yellow in the sepals and petals, came from E. G. Wrigley, Esq., Howick House, Preston; and specimens of Satyrium carneum were sent by Mr. Wythes, Syon, Brentford; and Mr. Wilson, Sheffield, sent a richly-coloured variety of Cattleya Hardyana.

Fruit Committee.

Present: T. F. Rivers, Esq., in the chair; and Messrs. P. Crowley, H. Weir, J. Cheal, J. Willard, J. Bunyard, J. Wright, W. Warren, W. Allen, G. Wythes, H. Balderson, F. Q. Lane, A. H. Pearson, and J. Smith.

From Mr. T. H. Crasp, Canford Manor Gardens, Wimborne, came a capital lot of Apples, in good clean samples, and embracing the most popular varieties; also a fine lot of Red Magdalen Peaches. Mr. Wythes, Syon Gardens, Brentford, showed well-grown fruits of Peaches Sea Eagle and Princess of Wales. Fine fruits of Lady Sudeley Apple came from Mr. F. Taylor, High Elms, Farnborough, Kent; and Mr. W. Allen, Gunton Park Gardens, Norwich, sent some well-grown bunches of Grapes Mrs. Pearson, Duke of Buccleuch, and Gros Maroc, together with a seedling from Black Morocco, crossed with Muscat of Alexandria, the result being a black berry, long, and of no particular flavour. Tomatos were shown by Mr. Bones, Tower House, Chiswick, and also by Messrs. J. Carter & Co., High Holborn, they sending a dish of the yellow-fruited variety, Benheim Orange; and a flat, dark red fruit, called Market Favourite.

Awards were made as follows:—

By the Floral Committee.

First-class Certificate.

To Geranium Hybrid Shirley Blue, from Rev. W. Wilks.

Awards of Merit.

To Potentilla formosa pallida, from Messrs. Paul & Son.

To Phlox Le Soleil, from Messrs. Paul & Son.

To Dahlia Canary Bird, from Mr. G. S. P. Harris.

To Dahlia Mrs. J. Douglas, from Messrs. H. Cannell & Sons.

To Dahlia Maud, from Mr. T. S. Ware.

To Dahlia Eclipse, from Messrs. J. Cheal & Sons.

To Dahlia Northern Star, from Messrs. J. Cheal & Sons.

To Dahlia Mrs. Stanley, from Mr. J. T. West.

To Dahlia Rouge Chauvrière, from Messrs. Kelway & Sons.

To Pentstemon Le Borda, from Messrs. Kelway & Sons.

To Gladiolus Baron Schroder, from Messrs. Kelway & Sons.

To Gaillardia Wendell Holmes, from Messrs. Kelway & Sons.

To Mentzelia Bartonioides, from Mr. G. Wythes.

By the Orchid Committee.

First-class Certificate.

To Cattleya Massaiana, from E. G. Wrigley, Esq.

Awards of Merit.

Cattleya Hardyana, Wilson's var., from Mr. A. Wilson.

Cypripedium Alfred, from Drewett O. Drewett, Esq.

Lælio-Cattleya Proserpine, from Messrs. J. Veitch & Sons.

Medals.

Silver-gilt Banksian, to Messrs. Kelway & Son, for a collection of Gladioli.

Silver Banksian, to Messrs. Paul & Sons, for groups of herbaceous plants.

Silver Banksian, to Messrs. J. Veitch & Sons, for collection of cut hardy shrubs.

Silver Banksian, to Messrs. J. Cheal & Sons, for collection of Dahlias.

Silver Banksian, to Messrs. H. Low & Co., for groups of Vanda Kimballiana.

Bronze Banksian, to Mr. T. H. Crasp, for collection of Apples.

Nepenthes Burkei excellens.—We are informed that this plant received a First-class Certificate at the Royal Horticultural Society's meeting on August 12, and not an Award of Merit as was stated at the time.

Scientific Committee.

August 12.—Present: Dr. M. T. Masters, in the chair; and Messrs. Veitch, Mr. McLachlan, Mr. Morris, Mr. Wilson, Rev. W. Wilks, and Rev. G. Henslow, Hon. Sec.

Carnations and Tipula.—With reference to the diseased Carnations, after a further and careful investigation by Mr. Blandford, he thinks that the Tipulæ were not the cause of the mischief, but "interlopers." He considers the state of the plants as more probably indicating the work of an anthomyid fly, but cannot speak positively on the point as yet.

Bird's-nest of Rhizomorpha.—The specimen shown at the last meeting was brought by Mr. Blandford's brother from Argentina, and exhibited by him—not by Professor Ward, as accidentally mis-stated.

Phylloxera.—A report was received from Mr. Barron that the instructions of the Scientific Committee had been carried out at Chiswick with the view of the destruction of the Vines infected. Mr. McLachlan observed that when the same treatment had been followed a few years ago, it proved perfectly effectual, no trace of the disease having appeared since in the same locality.

Distribution of Plants from Chiswick.—To guard against the possible extension of Phylloxera, it has been determined by the Council that no plants of any kind, nor Vine cuttings, shall be issued from Chiswick for the present.

Tomatos Diseased.—Specimens of the fruit attacked by Cladosporium and Phytophora were received from Chiswick. They will be forwarded to Dr. Marshall Ward for examination and report.

Vine Shoots atrophied.—Mr. Morris called attention to the fact that this, at present, obscure complaint is by no means uncommon. It occurs in other gardens in the neighbourhood of Chiswick, and is regarded by cultivators as very injurious indeed. If it affects the primary shoot in the early stage of growths, it apparently renders the Vine utterly barren. It is suspected as being due to some fungus. It is in the hands of Professor Ward for examination.

Pinus Strobus, &c., attacked by Chermes.—Mr. Morris mentioned that trees in the arboretum at Kew are being injured by some species of Chermes. It has the habit of attacking the upper part of the trees first, and then, apparently by falling on to the lower branches, it spreads downwards. The only remedy appears to be petroleum emulsion well syringed over the trees.

The Potato Disease.—The following interesting communication was received from Mr. J. Wright, who records the fact that the immense advantage of high moulding was known so long as twenty-five or more years ago in Lincolnshire. He says:—"I first saw it in full and systematic operation in most of the cottage gardens at Appleby in Lincolnshire. The seed-tubers were placed a yard asunder on the surface, and mounded over. When growth appeared they were mounded again, and when the haulm had a tendency to fall down, three or four of the best stems (the weakest being pulled out) were gently bent down, the early leaves not being smothered, and spread equidistantly, and then "crowned" with soil. This "crowning" was repeated at intervals till no more soil could be dug from between the mounds. The object of the cultivator was to get a peck of tubers (21 lb.) from a mound. I have had 18 lb., 19 lb., and 20 lb., but never 21 lb. I have known practically the whole of the mound crops sound when those on the level were worthless, for the results of this system were far in advance of crops on the level in "bad disease" years. With the introduction of strong upright-growing sorts the mound system fell into disuse. I have known several plants in the middle of a Potato-bed tied upright to sticks, and kept so, so that the early-formed leaves remain exposed to the light and air. These not only yielded more than twice the bulk of tubers of the surrounding procumbent plants, but the former were sound when dug, while the latter were rotten. This was in a wet and "great disease" year. I remember once seeing water standing between the rows in a Potato field because it could not pass through the hard "sole" or "pan" made with the plough. I took a fork and broke up the pan over a rod of ground, and the water rushed away. In no other part of the field were the Potatos worth digging. With regard to varieties, short-topped Potatos were the favourites in former days for late or winter use and pig feeding, but the weak-stemmed and foliaged sorts were annihilated by the murrain, only the more robust and coarser surviving, and only one that could in any measure be relied on had stout woody stems that remained upright with large thick leaves. It was known as the "Old London Red." The quality, however, of the tubers was inferior, and Sutton's Red-skinned Flour-ball was an improvement of great value in those days. Ever since varieties of the same upright growth and strong leaf-power have proved to be the best disease-resisters, and fortunately, the tubers of several of these are now of good quality. Tender-stemmed late-growing varieties, which fall and cover the ground, not only prevent evaporation from the soil, but lose all their best leaves prematurely through want of light and air, the weaker leaves towards the tops of the stems alone remaining (as long as they can) to exhale moisture and carry on the other functions of plant life. For this reason such plants fail to withstand the fungus, which readily takes possession."

Mr. Henslow drew attention to the recommendation of his father (the late Prof. J. S. Henslow), to save the starch from Potatos which might be so far decayed as to be useless as an article of food, for 75 per cent. of starch can often be recovered from such tubers. Several Suffolk farmers followed his suggestion in 1845, when whole fields were utterly destroyed by the disease. Mr. Henslow would be glad to describe the method to anyone who will communicate with him at Drayton House, Ealing.

Stylidium graminifolium.—Mr. Morris called attention to a plant exhibited, a native of Australia. It is well known for the peculiarity of its irritable style. This is at first bent to one side, but when touched at the base suddenly flings itself over to the opposite side of the flower. A similar movement is observable in Maranta, a plant allied to the Ginger.

Cypripedium superbiens.—A plant was exhibited by Malcolm S. Cooke, Esq., of Kingston Hill, of this Orchid, remarkable for having three flowers, two of which bore double labella, while the third was twin-petalled. Dr. Masters observed that the number of

malformed blossoms of Orchids which he had received was on the increase; many occurring on C. Sedeni, they being always late flowers which are malformed, according to Mr. Veitch's experience. C. Lawrenceanum is another which affords many monstrous conditions. Dr. Masters raised the question whether it might not be in many cases an indirect result of hybridisation. C. superbiens originated from a single plant accidentally included in a batch of Orchids, and though usually regarded as a distinct species, may possibly be (as Mr. Veitch suggested) a natural hybrid.

Agapanthus umbellatus Malformed.—Mr. Wilson showed a flowering scape with the superficial tissue "ripped up," as it were, at various places along the edge of the somewhat flattened stem. It appeared to be due to an irregularity in the rates of growth of the tissues, so that the superficial layers had become ruptured at places, and curled outwards.

Jeffersonia diphylla, Fruit of.—Mr. Wilson exhibited a specimen of the fruit of this Berberidaceous plant. It consists of a single carpel or "follicle," but instead of dehiscing down the ventral suture, as in Aconite, it bursts by a semi-circumscissile dehiscence, the lid remaining attached at one, the ventral side. In most cases of "pyxis" the lid is quite separate, as in Henbane, Plantains, and Anagallis. As the fruit is at right angles to the stalk, it has an extraordinary resemblance to a miniature pipe.

Daffodil Bulbs with Merodon.—Mr. Wilks exhibited bulbs of the double maximus, with the grubs of M. equestre within them. They destroy the interior of the bulb, but their presence brings about a prolification, as an immense quantity of bulbils are produced, which would not otherwise be the case. Hence they may be regarded as useful for the purpose of multiplication, though of course accompanied by the destruction of the flower which the original bulb would have borne. It appears that the grub descends into the ground in autumn to form the chrysalis, the imago escaping in the following summer. Hence the best period for examination of bulbs, in order to destroy the grub, would be July.

Gloxinia Leaves, Diseased.—Leaves covered on the under side with light brown spots and patches were received from Buckskin Hall, Herts. It was first suggested that overwatering, especially with cold water, might have been the cause, as this is apt to produce similar injuries; but a microscopic examination revealed thrips and acari, which it was thought was no doubt the real cause of the mischief; consequently it should be treated as usual with tobacco powder.

Haastia pulvinaris, Hk. f.—A fine specimen of this remarkable composite, known as the Vegetable Sheep, was exhibited by Mr. William Richards, obtained by Mr. J. B. Armstrong from Mount Perceval, Amwin, New Zealand, at an elevation of 5000 feet. It forms dense masses of agglomerated woolly capitula with yellow florets.

The next meeting of the Scientific Committee will be held in the Council room on October 14.

WILTS.

August 20.—Favoured with fine weather, this Society held its annual exhibition in the grounds of the Bishop's Palace, Salisbury, and was a capital display; £15, £10, and £5 were offered in prizes for twelve stove and greenhouse plants, distinct, half to be flowering, the rest foliage. Only two lots were staged—Mr. Cypher, Cheltenham, taking 1st with excellent exhibits, they included Latania borbonica, Crotons, Stephanotis floribunda, and Ericas. Mr. Wills, gr. to Mrs. Pearce, Basset, Southampton, was a good 2nd. His collection included a fine Cycas revoluta, Ixora Williamsii and Erica Eweriana.

Mr. Curry, gr. to Colonel Pepper, Milford Hill, Salisbury, was 1st for nine stove and greenhouse plants, four in bloom, showing good Palms, Allamanda grandiflora, Ericas, and Crotons. Mr. Wills led for six Exotic Ferns, distinct, showing good, even, clean plants.

Mr. H. W. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, was a good 1st for six plants of tuberous-rooted Begonias.

In the open classes for groups, prizes were presented by the Earl of Radnor, and Messrs. Keynes, Williams & Co., Salisbury. There were only two entries in each class, both capitally arranged and very close in merit, Mr. Wills and Mr. Curry were respectively 1st and 2nd in both classes.

Several excellent groups of miscellaneous plants were arranged by amateurs residing within a radius of six miles of Salisbury. Dr. F. W. Coates, Salisbury, was a capital 1st, with an arrangement (made by himself), which justly commanded attention from visitors. Mr. E. S. Brown, Wilton Road, Salisbury (who took several 1st prizes in other classes), was a very good 2nd. Mr. Frank Pearce, of High Street, Salisbury, was 1st in another class for a very pretty and imposing group.

Fruit was well shown. Four good collections of eight kinds were staged, Mr. Ward being 1st, staging a fine Queen Pine, good Muscat of Alexandria and Madresfield Court Grapes; Hero of Lockinge Melon, large Castle Kennedy Figs, Pine-apple Nectarines, large, even, well-coloured fruits of Sea-eagle Peach, and Moor Park Apricots. Mr. Iggulden, gr. to Lord Cork, Marstone House, Frome, was a good 2nd, having in his collection a good Blenheim Orange Melon, and Madresfield Court Grapes; Mr. Evans, gr. to Lady Ashburton, Melchet Court, Romsey, was 3rd; and Mr. Inglefield, Tedworth House Gardens, Marlborough, was awarded an extra prize. In addition to the 1st prize given by the Society for the best collection of fruit, Mr. Ward received a Silver Medal, given by Messrs. Wood & Son, Wood Green, London, for cultural skill.

Grapes were shown well. Mr. Warden, Clarendon Park Gardens, Salisbury, was the most extensive exhibitor from the neighbourhood of Salisbury, and he took 1st prize in every class in which he showed, staging medium-sized compact bunches.

Mr. Davidson, gr. to Lord Wolverton, Iwerne Minster, Blandford, was 1st for Muscat of Alexandria, with clean, well-coloured bunches, the berries being of good size, and very bright.

Mr. Inglefield was 1st for Peaches, staging large, even, well-coloured fruits of Walburton Admirable; Mr. Iggulden being 1st for Nectarines. Mr. Ward was 1st for Melons, with Hero of Lockinge; and for Plums, with Guthrie's Late Gage; and 1st for Apricots. Mr. Budd, Lockerby Hall Gardens, Romsey, was 1st for Pine-apple.

Mr. Budd was 1st for three dishes of dessert Apples; Mr. Smith for culinary. Mr. Browning, gr. to Sir Talbot Baker, Bart., Ranstone, Blandford, had the best four dishes of Pears.

Cut flowers were good. With a stand of twenty-four Roses, Dr. Seaton, Bitterne, Hants, was 1st; Mr. Flight, Twyford, Winchester, leading for a stand of twelve blooms, these being of good substance, fresh, and even. Mr. Budd was 1st for eighteen bunches, distinct varieties, including nice bits of Orchid blooms. Mr. Iggulden led with a stand of twelve bunches.

Three fine collections of vegetables, twelve kinds each, were staged in excellent form for the Earl of Pembroke's prizes. Mr. Wilkins, gr. to Lady Theodore Guest, Inwood House, Henstridge, led, with Mr. Inglefield an uncomfortably close 2nd, both showing first-rate produce.

Among miscellaneous exhibits, Messrs. Keynes, Williams & Co. had Dahlias, Roses, &c.; and Messrs. Veitch & Sons, Exeter, contributed an extensive collection of plants and cut flowers.

TROWBRIDGE.

August 20.—This was the forty-first exhibition of this prosperous Society; the weather being fine, an immense throng of people came to see the show, which took place as usual in the field adjoining the railway station. It was a very fine show throughout, one of the best the Society has held.

That Trowbridge specialty, the Fuchsia, was largely and finely shown on this occasion, though the plants being mainly finished in the open, showed signs of the unkindly weather. The best six came from Mr. Geo. Tucker, gr. to W. P. Clark, Esq., Trowbridge, who had very fine Pyramids, averaging 7 feet in height, the dark varieties being Doel's Favourite, Charming, and Bountiful, and the light varieties, Arabella, Mrs. Marshall, and Marginata. Mr. James Lye, Clyffe Hall, Market Lavington, was 2nd, with six fine varieties of his own raising, viz., Abundance, Final, Rival, Elegance, and James Welch, dark; and Favourite. Mr. Tucker also had the best four varieties, showing Thomas King, the Hon. Mrs. Hay, and Charming—all dark varieties, raised by Lye; and C. Richman, light. In the cottagers' division some very fine plants were also shown, much better than is usually seen at large country exhibitions.

Stove and greenhouse plants were a good feature. Mr. Geo. Tucker had the best nine, very good plants, Dipladenia Brearleyana being finely coloured; Mr. H. Matthews, gr. to W. R. Brown, Esq., Trowbridge, was 2nd, having a well-grown and bloomed specimen of Lasiandra macrantha, with its large rich purple flowers. The best six plants came from Mr. Hiscock, gr. to E. B. Rodway, Esq., Trowbridge, Dipladenia boliviensis being a charming specimen. Mr. Matthews had the best three, and Mr. Hiscock the best specimen plant, staging a very finely-grown and bloomed Stephanotis floribunda.

Some very fine tuberous-rooted Begonias were shown by Mr. C. Richman, gr. to G. L. Palmer, Esq., Trowbridge, who was 1st, with six single and six double varieties, admirably grown and bloomed, and of fine quality. Mr. Matthews also had a half-dozen very fine single varieties.

Verbenas, Balsams, Cockscombs, and Petunias, were of very superior quality, and zonal Pelargoniums in all the divisions were surpassingly fine. One specimen shown by a cottager recalled the palmy days of exhibiting zonal Pelargoniums.

Mr. H. Matthews had the best four Orchids—very good plants—consisting of Cattleya Harrisoni violacea, Phalænopsis Schilleriana, P. amabilis, and Aërides odoratum majus. The best newly introduced plant was Croton Reidii.

The best nine foliaged plants came from Mr. G. Curry, gr. to Colonel Pepper, Salisbury. Good Caladiums and very well-grown plants of handsome-leaved Coleus were shown.

The best fifteen plants of Ferns and Mosses—a very good collection indeed—came from Mr. G. Tucker; equal 2nd prizes, for excellent collections, were awarded to Mr. J. Coke, gr. to A. P. Stancomb, Esq., Trowbridge, and Mr. H. Pocock.

Cut flowers were represented by excellent Roses, Messrs. Geo. Cooling & Sons and Dr. Budd, of Bath, taking the leading prizes. Good show and fancy single and Pompon Dahlias were also staged; also some excellent Gladioli, Asters (quilled and flat-petalled), Carnations and Picotees, the brothers Hooper showing some very good blooms for the late period of the year; Hollyhocks, cut flowers, &c.

Collections of cut flowers were very good, also bunches of annuals; and Mr. A. A. Walters, nurseryman, Bath, staged a fine collection of hardy perennial and other flowers.

Fine displays of fruit have been seen in Trowbridge in previous years, but this was considered to be one of the best ever witnessed, and the contributions filled a large tent. The best collection of ten varieties came from Mr. A. Miller, gr. to W. H. Long, Esq., M.P., Rood Ashton, Trowbridge, who had very good Alicante, Alnwick Seedling, and Black Hamburgh Grapes; fine Dymond and Bellegarde Peaches; Albert Victor and Stanwick Elrude Nectarines; very fine Kirke's Plum, Countess Melon, and Morello Cherries. 2nd, Mr. G. Pymm, gr. to Mrs. Gouldsmith, Trowbridge, who had very good Black Hamburgh and Foster's Seedling Grapes, Peaches, and Nectarines. Two other good collections were shown, Mr. J. Cray, Frome, had the best six dishes—a very good lot indeed, consisting of Black Hamburgh and Foster's Seedling Grapes, Grosse Mignonne Peaches, Pine-apple Nectarine, Hunskirk Apricot, and Hero of Lockinge Melon. Mr. C. Bull, Crediton, had the best Pine-apple, staging a good Smooth Cayenne. Mr. J. Gibson, gr. to Earl Cowley, Chippenham, had the two best bunches of black Grapes, staging finely-finished Hamburghs.

Mr. J. Atwell, gr. to J. B. Brain, Esq., Stoke Bishop, Bristol, had the best two bunches of white Grapes, showing capital Buckland Sweetwater. Mr. Atwell had the best two bunches of Black Muscats, staging very good Madresfield Court. Some well finished White Muscats were shown by Mr. Alcock, gr. to Major Heneage, of Calne, and Mr. Coles.

Peaches, Nectarines, and Apples, were also good.

Vegetables were very fine, indeed, in all the divisions. Potatos were a great feature, especially the collections shown by cottagers.

A very interesting collection of Apples were staged by Messrs. G. Cooling & Sons, picked from small trees on dwarfing stocks to show their fruitfulness. There were some very fine examples of the leading sorts among them.

SHREWSBURY.

August 20 and 21.—The exhibition was not only favoured with fine weather, but a much larger number of visitors than usual was present on the first day, for, independent of the money taken at the gates, £540 worth of tickets were sold beforehand. The second day is the great day, as excursionists pour in from distant towns, and about 40,000 persons is the average attendance then.

Groups arranged for effect were not sent on this occasion, and the disastrous effects of the hurricane at the Cheadle show prevented some two or three exhibitors from coming; one especially, who had entered in several of the classes for stove and greenhouse and other plants, but whose plants were terribly injured at Cheadle.

The great prize is that of £25 for twenty-six flowering and ornamental plants, and Mr. Finch, gr. to Mr. Alderman Marriott, Coventry, set up a wonderfully fine lot; amongst them were superb Palms, a grand Ixora Duffii, with plenty of flowers, some of the leads being 12 inches across; a model specimen of Ixora coccinea major, a grand Stephanotis, and equally fine Lapageria rosea, a huge Croton Mortefontainensis, and other plants. Mr. Cypher, Cheltenham, did not exhibit in his usual form, but had grand plants of Pancratium fragrans, Crotons Sunset and Queen Victoria, and a well-grown, medium-sized Allamanda grandiflora, and other plants. 3rd, Mr. J. F. Mould, Pewsey, Wilts, his best plants being a very fine Erica Eweriana superba, superbly bloomed and coloured, and two other good Heaths; but Mr. Marriott's lot were far ahead of the others. Mr. Marriott scored strongly all through, taking 1st also for six plants in flower (Orchids excluded); Mr. Cypher 2nd. For nine plants, Mrs. Juson, Shrewsbury, was 1st, with an excellent lot; and also for six plants, for cultivators residing in the county of Salop.

Mr. Lambert, gr. to Colonel Wingfield, staged fine Ferns, of large size, and showing excellent cultivation, taking 1st prizes for six plants (for the country growers), as well as for six plants in the open class. There were two very fine masses of Davallia Mooreana, and rarely do we see two such Bird-nest Ferns as Mr. Lambert's Neottopteris nidus and australasia.

Mr. Cypher was 1st for Palms. Mr. Lambert 1st and 2nd for six Dracænas. Medium-sized zonal Pelargoniums, well-grown and flowered, were in plenty; and Caladiums, Coleus, Fuchsias, and many other things, were staged in good form. Mr. Henry Owen's 1st prize lot of six Tuberous Begonias well deserve attention.

A quantity of fruit was staged, and fine quality was observable in many instances. For collections of twelve dishes, the Hon. Mrs. Meynell Ingram, Temple Newsam, Leeds, was 1st, with two bunches each of Buckland Sweetwater, Bowood Muscat, and Black Hamburgh Grapes, two large bunches of Barbarossa, fine Figs, Peaches, Apricots, Nectarines, a seedling Melon, Transparent Gage Plums, and a good Queen Pine; 2nd, Mr. Goodacre, gr. to the Earl of Harrington. For nine dishes, Mr. Lambert, gr. to Colonel Wingfield, led.

Mr. Goodacre had the best six bunches of black Grapes, and for three bunches of Black Hamburghs, Rev. T. M. B. Owen led with very large, well-done bunches.

For three bunches of black Grapes, any other sort: 1st, Mr. Mainwaring, Oteley, Ellesmere, with well-finished bunches of Gros Colmar.

For four bunches of white Grapes, Mr. R. Pilkington won with two each of Foster's Seedling, and Muscat of Alexandria; and the best three bunches of white Muscats were from Mr. Pilkington.

Some other classes for Grapes were well filled, and keenly contested. Some good Melons, Peaches, Nectarines, and Apricots. Excellent Morello Cherries were staged.

In the cut bloom department, Messrs. Perkins & Sons, Coventry, took the lead in Roses; Messrs. Heath & Son, Cheltenham, in Dahlias. Mr. W. Shaw, Kidderminster, in Gladioli; and Mr. Blair was 1st for stove and greenhouse flowers—an admirable lot of Orchids.

Mr. R. Sydenham, Birmingham, was 1st for twelve Picotees, and twelve fancy and self Carnations or Picotees, both fine lots; and Mr. Helliwell, Todmorden, 1st and 2nd prizes for some excellent Carnations.

Vegetables are always fine at Shrewsbury, and the fight is a strong one for leading honours. It is so now; and in the Society's class for twelve varieties, Mr. Hayhurst was 1st, Mr. Lambert a very close 2nd, both lots being of extra fine quality throughout.

For six varieties, Mr. Lambert was again 1st, as well as for six dishes of Potatos.

For Messrs. Webb & Son's prizes for collections of eight vegetables, 1st, the Hon. W. P. Talbot.

For Messrs. Sutton's prizes in separate classes for Melon, Cucumbers, Tomatos, Carrots, and Peas, there was close competition; also for Messrs. Carter's prizes. The 1st prize for twelve Onions in competition for sizes from Mr. Henry Deverill, of Banbury, was won with twelve remarkably fine specimens from Lady Guest's gardener.

Honorary exhibits were numerous: Mr. H. Eckford, Wem, had some charming new Sweet Peas. Messrs. Cannell & Son's new zonal Pelargoniums and Begonias. Mr. B. R. Davis, Yeovil, nine boxes of cut blooms of fine Begonias, plants, &c. Messrs. Jones & Sons, Shrewsbury, had excellent bouquets, floral arrangements, &c. Mr. Alexander Lister, Rothesay, 250 blooms of fancy and show Pansies, a grand lot. Mr. E. Murrell, Shrewsbury, very fine tuberous Begonias and other plants. Messrs. Pritchard, Shrewsbury, had a display of plants, flowers, &c.; Messrs. Laing & Sons, Forest Hill, a nice lot of Begonias; Messrs. R. Smith & Co., Worcester, a collection of plants; Messrs. Bunyard & Son, Apples. Messrs. Laing & Mather, Kelso, had border Carnations; Messrs. Birkenhead had a large number of choice Ferns; Mr. A. Myers, Shrewsbury, had a collection of plants, Pansies, &c. The Cranston Company, Hereford, had cut Roses, and Messrs. Clibran & Son, floral arrangements, &c. A collection of rare plants was sent by Messrs. B. S. Williams & Son, Holloway.

ROYAL HORTICULTURAL OF ABERDEEN.

August 21, 22, and 23.—The annual *fête* of this Society was held in the Duthie Public Park, Aberdeen, on the above dates. It was matter for regret that the opening day was so very wet, and that the same should have to be said of the other two days; still, on the evenings of Friday and Saturday, it cleared up, and the attendance was good. The quality of the exhibits was of a high standard. There was a scarcity of pot plants this year. The exhibits of fruit and vegetables, however, merited special attention, and of these Potatos were the most remarkable. It is one of the objects of the Society to promote the scientific study of horticulture, and to this end the management procured the services of Dr. James W. H. Trail to give two lectures, one on Thursday, and the other on Saturday, on "How Plants Feed." He had large audiences, and was listened to with attention.

In the class open to professional gardeners, the leading prize for pot plants was carried off by Mr. Proctor, gardener to ex-Lord-Provost Henderson, Devanha House, Aberdeen, without competition. The three best plants in his collection were a Yucca, Maranta, and Erica.

There were two entries for side tables of plants arranged for effect, and Mr. Bennie, Albyn Place, Aberdeen, who took 1st honours, well deserved his victory. The stove or greenhouse plants in this section were a poor display, but Ferns were specially fine. There was a capital display of zonal Pelargoniums. Fuchsias compared unfavourably with those of last year, but there were some exceedingly clean specimens.

Cut flowers were very fresh in appearance, but owing to the wet weather in the beginning of the week, were few in number. Roses, all things considered, came well to the front, the honours being carried off by Messrs. A. Thomson, Rubislaw Den; A. Reid, Urie; and R. Grigor, Mintlaw.

There was a creditable display of Pansies, although this class has been better represented.

Fruit was a good show. The prize for the best collection went to Mr. Baird, of Urie, for samples of excellent quality; while for collections of hardy fruits in the same division, chief honours fell to Mr. G Taylor, Raeden, Stocket, for very fine specimens. There were capital displays of Strawberries, Cherries, Gooseberries, Grapes, and Apples, the premier positions in these classes being taken by Messrs. J. Davidson, Pitmaston; A. Reid, Durris; P. Ogg, Fintray House; J. Strachan, Beechgrove; and Middleton, Monymusk. In the sections open to amateurs, there were also creditable displays.

Vegetables had a magnifient appearance, forming the great feature of the show, especially in the professional section. There were two classes—one for gentlemen's gardeners, and the other for market gardeners; and Mr. Milne, Cluny, who was first in the former, and Mr. Anderson, Lower Cornhill, who won in the latter, had very creditable displays. Turnips, Carrots, Leeks, and Peas, were a fine show, the latter especially. Potatos were a feature. The entries were numerous, and the specimens of the different varieties formed a most attractive display.

Amongst nurserymen's exhibits of cut flowers, the collection of hardy herbaceous plants and hybrid perpetual Roses, shown by Messrs. Cocker & Son, Aberdeen, was magnificent. They also took leading honours with fine blooms in the competition; Messrs. D. & W. Croll, Dundee, leading for Teas. Mr. McPherson, Deemount, also took first honours for twenty-four Pansies, of a sweet and altogether attractive appearance. Messrs. Cocker's 1st prize, twelve Gladioli, were very fine.

In the department of nurserymen's plants, for exhibition only, there was a show of Cactus and pompon Dahlias from Mr. John McPherson, Deemount, who also gained the 1st prize for twenty-four. Messrs. Ben. Reid & Co., Aberdeen, had a large collection of pot plants and cut flowers. Messrs. Cocker & Son had also an extensive and highly creditable display.

DEVON AND EXETER.

August 22.—The 171st exhibition of this Society was held in the Public Grounds, Northernhay, Exeter. The splendid display made by competing and honorary exhibitors, the perfect state of the weather, and the lighting of the tents and grounds in the evening with the electric light, all combined to make it one of the most successful exhibitions the Society has held, nearly £150 being taken at the gate. Some of the leading exhibitors of late years have left the field, but others have taken their places, so that there was no lack of exhibits; in fact, the entries were more numerous.

Mr. Rowland, gr. to W. Brock, Esq., showed the leading lot of nine stove and greenhouse plants in flower, having fine specimens; and was again to the front for foliage specimens. Among other prize-winners for plants were Messrs. Curry, Ebbutt, Snell, and Cooper.

The Gladioli in some collections were magnificent, especially those from the gardens of W. H. Fowler, Esq. Dahlias were in excellent condition all through the show, the best forty-eight being shown by Mr. Humphries. Roses were very fair, considering the lateness of the season. Mr. G. Hawkins, gr. to W. H. Fowler, Esq., leading for twenty-four.

Fruit was shown in better condition than last year. Grapes were better coloured on the whole; in fact, they were all, without exception, good. Peaches and Nectarines were fine. Mr. H. W. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury; and Mr. Iggulden, Marston Gardens, Frome, being the chief exhibitors.

Vegetables were excellent. Potatos were good, and quite up to the average.

Messrs. Veitch & Son, of Exeter, contributed a display of miscellaneous plants and cut flowers. Lilies, Pancratiums, Orchids, Gloxinias, &c, with boxes of cut flowers of single, double, Cactus, and pompon Dahlias in great variety, all of excellent merit; also boxes of Roses, annuals, herbaceous and other flowers. Messrs. Curtis, Sandford & Co. sent a large assortment of Roses and other cut flowers, as well as Messrs. Small, Messrs. Jarman & Co., S. Randall, C. Sclater, and others.

MUSSELBURGH HORTICULTURAL.

August 23.—This Society held its annual flower show in the Grammar School, Musselburgh. The falling off in the entries, owing to the unfavourable character of the weather, was most noticeable. Fuchsias, Tuberous Begonias, Hydrangeas, Liliums, Ferns (both dwarf and tree sorts), and miscellaneous stove and greenhouse plants were all exhibited in good condition.

The principal prize-takers in plants were Messrs. A. Brown, New Hailes; Wilson, Carberry, Paton, Spring Gardens; and G. Wood, Woodside. Several of these distinguished themselves also in the cut-flower classes, notably Brown, Wilson, and Paton, along with Niven, of Campie, and J. Dow, Musselburgh.

LEITH HORTICULTURAL.

August 23.—The seventh annual show of this Society was held in the Drill Hall, Leith. Plants were well shown by both gardeners and amateurs. Mr. John Donaldson, Ormelie, had the finest Eucharis amazonica, a magnificent tub of it carrying a couple of dozen scapes. Mr. Lindsay, gr., Bormington Bank House, was placed 1st in the competition for a table of plants arranged for effect. In the amateurs' classes for plants, some excellent examples of culture were displayed. Mr. Brand exhibited a Fuchsia grown in a 5-inch pot, the plant being a dense bushy one about 2 feet high, and equal breadth. A fine

pan of Trichomanes radicans, grown by Mr. Brown, Waterloo Place, took 1st prize in the competition for the best British Fern by amateurs, of which the entries were numerous and the competition keen.

Variegated zonal Pelargoniums were well shown by Mr. J. King, Restalrig Park.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending Aug. 23.	Accumulated. Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	3 —	69	0	+ 66	— 72	6 +	166	31.9	24	25
2	2 —	83	0	— 71	— 58	2 —	142	19.8	30	29
3	2 —	99	0	— 7	— 93	1 +	120	16.2	30	28
4	3 —	112	0	— 57	— 39	0 av.	125	16.4	35	36
5	3 —	109	0	— 78	— 26	1 —	119	15.2	30	31
6	2 —	125	0	— 59	— 68	3 +	119	18.7	38	34
7	2 —	90	0	— 27	— 73	4 +	144	31.7	38	32
8	3 —	102	0	+ 2	— 81	6 +	136	21.1	32	30
9	2 —	113	0	— 71	+ 12	0 av.	140	24.8	46	35
10	4 —	88	0	— 42	— 56	2 +	157	21.1	30	30
11	3 —	99	0	— 24	— 15	1 +	151	26.6	40	33
12	2 —	123	0	+ 18	— 22	1 +	139	22.2	51	42

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending August 23, is furnished from the Meteorological Office:—

"The *weather* has continued in a very changeable condition generally; brief intervals of sunshine have alternated with overcast skies and heavy falls of rain, and thunder and lightning occurred at times in most parts of Great Britain.

"The *temperature* has been below the mean in all districts, the deficit having ranged from 2° to 4°. The highest of the maxima were registered either on the 17th or 18th, when they varied from 65° in 'Ireland, N.' to 75° in 'England, S.' The lowest of the minima, which were recorded on rather irregular dates, ranged from 38° in 'Scotland, E. and W.' and 'Ireland, N.,' to 46° in 'England, S.,' and to 52° in the 'Channel Islands.'

"The *rainfall* has been a little less than the mean in 'Scotland, E.,' and the 'Midland Counties,' and equal to the mean in 'England, E.,' and 'S.W.;' in all other districts, however, there has been an excess.

"*Bright sunshine* has been more prevalent than it was last week, the percentage of the possible duration having ranged from 24 in 'Scotland, N.,' to 46 in 'England, S.W.,' and to 51 in the Channel Islands.''

VARIORUM.

List of Famous Horticulturists.—The following extract is from the *Journal of Botany* for June:—

"**Rand, Isaac** (d. 1743): d. London, 1743. Apothecary in the Haymarket. F.R.S. Præfectus Horti. Chelsiani, 1722 (?)—1739 or 1743. 'Index Pl. Officin. Hort. Chels.' 1730. 'Hort. Chels. Index Compendiarius,' 1739. Helped **Elizabeth Blackwell** in 'Curious Herbal.' Lists of Chelsea plants in Birch MSS. Pl. in Herb. Mus. Brit. Jacks., 410; Journ. Bot. 1863, 32; Rich. Corr. 125; Semple, 41—63. Fl. Mid. 388. *Randia*, L.

"**Rea, John** (d. 1681): b. Kinlet, near Bewdley, Nov. 1681. Nurseryman. 'Flora, Ceres and Pomona,' 1665; ed. 2, 1696. Introduced Corylus Colurna, 1665. Pritz. 257; Journ. Hort. 1876, 172.

"**Reeves, John** (1774—1856): b. West Ham, May 1, 1774; d. Clapham, March 22, 1856. F.L.S., 1817. F.R.S., 1817. Father of the following. Went to China as inspector of tea to H.E.I.C., 1812—1831. Lived at Macao, afterwards at Clapham. Correspondent of Banks. Sent home Wistaria. Made collection of drawings of Chinese plants, now in Bot. Dept., Brit. Mus. Gard. Chron. 1856, 212; Proc. Linn. Soc. 1856, xliii.; Cott. Gard. xvi., 21; R.S.C., v. 127. *Reevesia*. Lindl.

Reeves, John Russel (1804—1877): b. 1804; d. Wimbledon, Surrey, May 1, 1877. F.R.S. F.L.S., 1832. Lived thirty years in Canton. Had a herbarium. Journ. Bot. 1877, 192; Gard. Chron. 1877, i., 604.

Reid, Francis A. (fl. 1852): Lieut. Sec. Madras Horticult. Soc., and Director of its garden. *Reidia*. Wight.

"**Reynardson, Samuel** (d. 1721): d. Hillingdon, Middlesex, 1721. Of Cedar House, Hillingdon, fr. 1678. Had greenhouses, a fine collection, museum, and library, and 'great correspondence abroad. Collection sold to Robert Walpole. Plukenet, 'Amaltheum,' 63. 'Mantissa,' 51, 147. 'Cat., by Society of Gardeners,' 1730. Loudon, 'Arboretum,' 56, 59, 61.

"**Richardson, Richard** (1663—1741): b. North Bierly, near Bradford, Yorks, Sept. 6, 1663; d. same place, April 21, 1741; bur. New Chapel Church, nr. Cleck Heaton. M.B., Oxon. M.D., Leyden, 1699. F.R.S., 1712. Found *Trichomanes radicans*, in Yorks. Phil. Trans. No. 128, p. 526. 'De Cultu. Hortorum,' 1699. Contrib. to Ray's 'Synopsis,' ed. 3. M. S. 'Deliciæ Hortenses,' 1696, and 'Index Hort. Bierlciencis,' 1737. Pult. ii. 185; Pritz. 263; Jacks. 4; Petiver, Mus. 95; Lond. Gard. Mag. iii. 127; Salisb. Gen. 114. 'Correspondence,' 1835, w. portr. Nich. Illust. i. 225, w. portr. viii. 1858; ix. 804. Bust on tomb. Plants in Herb. Sloane, 61, 72, 79, 114, 145, 146. *Richardia*, L.; *Richardsonia*, Kunth.

"**Robertson, John** (d. 1865): b. Perthshire; d. Glasgow, March 24, 1865. A. B. S. Ed. 1863. Gardener at Kew and at Kinfauns Castle. Prepared 'Flora of Perthshire' (unpublished). Trans. Bot. Soc. ed. viii. 337; R. S. C., v. 230."

MARKETS.

COVENT GARDEN, August 28.

Market very quiet, with scarcely any alteration. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	3 6-	8 6	Peaches, dozen,	1 0-	8 0
Filberts, Kent, 100 lb.	50 0-	55 0	Pine-app'es, St. Michael, each	2 0-	6 0
Grapes, lb.	0 9-	3 0	Plums, ½-sieve	7 0-	11 0
Lemons, per case	12 0-	20 0			
Melons, each	0 6-	2 0			

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0-	4 0	Myosotis or Forget-me-nots, 12 bun.	2 0-	4 0
Asters, 12 bunches	2 0-	4 0	Pinks, various, 12 bn.	3 0-	6 0
— French, bunch	1 0-	1 6	Pelargoniums, scarlet, 12 spr.	0 3-	0 6
Bouvardias, per bun.	0 6-	1 0	— dozen sprays	0 4-	0 9
Callæthiopica, 12 bl.	2 0-	5 0	Primulas, double, 12 sprays	0 6-	1 0
Carnations, 12 blms.	1 0-	2 0	Pansy, or Heartsease, 12 bunches	1 0-	2 0
— 12 bunches	4 0-	6 0	Poppies, various, doz. bunches	1 0-	2 0
Chrysanth., 12 bun.	3 0-	6 0	Pyrethrum, 12 bun.	2 0-	4 0
— 12 blooms	1 0-	3 0	Roses, Tea, per doz.	0 6-	1 6
Cornflower, 12 bun.	1 6-	3 0	— coloured, dozen	1 0-	1 6
Dahlias, 12 bun.	2 0-	4 0	— red, per 12 bun.	2 0-	6 0
Eucharis, per dozen	2 0-	4 0	— Safrano, dozen	1 0-	2 0
Gardenias, 12 blooms	2 0-	4 0	— outdoor, 12 bun.	1 0-	3 0
Gladiolus, 12 bun.	6 0-	12 0	Stephanotis, 12 spr.	1 6-	3 0
Heliotropes, 12 spr.	0 6-	1 0	Sultan, 12 bunches	3 0-	4 0
Lavender, 12 bun.	3 0-	5 0	Tuberoses, 12 blms.	0 3-	0 6
Lilium, var., 12 bl.	0 6-	4 0			
Maiden Hair Fern, do	4 0-	9 0			
Marguerites, 12 bun.	3 0-	6 0			
Mignonette, 12 bun.	1 0-	3 0			

Orchid-bloom in variety.

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	18 0	Ferns, in var., doz	4 0-	18 0
Aspidistra, doz.	18 0-	42 0	Ficus elastica, each	1 6-	7 0
— speci. plants, each	7 6-	10 6	Foliage plants, various, each	2 0-	10 0
Asters, per doz.	3 0-	6 0	Fuchsia, per doz.	3 0-	6 0
Balsams, per dozen	3 0-	4 0	Heliotrope, per doz.	4 0-	6 0
Begonias, per doz.	4 0-	6 0	Hydrangeas, doz.	6 0-	18 0
Calceolaria, p. doz.	4 0-	6 0	Liliums, various, per dozen	9 0-	18 0
Campanula, per doz.	9 0-	18 0	Lobelia, per doz.	3 0-	6 0
Chrsanthem., p. doz.	4 0-	18 0	Marguerites, doz.	6 0-	12 0
Coleus, per dozen	2 0-	6 0	Mignonette, per doz.	3 0-	6 0
Cyperus, per dozen	4 0-	12 0	Nasturtiums, p. doz.	4 0-	6 0
Dracæna terminalis, per dozen	30 0-	60 0	Palms in variety, each	2 6-	21 0
— viridis, per doz.	12 0	24 0	Pelargoniums, scarlet, per dozen	3 0-	6 0
Euonymus, in var., per dozen	6 0-	18 0	— per doz.	6 0-	12 0
Evergreens, in var., per dozen	6 0-	24 0	Petunias, per doz.	4 0-	6 0
Ericas, various, doz.	8 0-	24 0			

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Articho., Globe, each	0 4-	...	Mustard and Cress, punnet	0 4-	...
Beans, French, lb.	0 4-	...	Onions, per bunch	0 5-	...
Beet, red, per dozen	1 0-	2 0	Peas, per quart	1 0-	...
Carrots, per bunch	0 6-	...	Parsley, per bunch	0 6-	...
Cauliflowers, each	0 3-	...	Shallots, per lb.	0 6-	...
Celery, per bundle	1 6-	2 0	Spinach, per bushel	3 0-	...
Cucumbers, each	0 6-	1 0	Tomatos, per lb.	0 9-	...
Endive, per dozen	2 0-	...	Turnips, per bunch, new	0 4-	...
Herbs, per bunch	0 4-	...			
Lettuces, per dozen	1 6-	...			
Mushrooms, punnet	1 6-	...			

Potatos.—Trade greatly improved for good samples, and likely to continue for a time. Magnums, 65*s.* to 70*s.*; Snowdrops, 80*s.* to 90*s.*; Hebrons, 60*s.* to 65*s.*; Imperators, 65*s.* to 70*s.* *J. B. Thomas.*

SEEDS.

London: *Aug.* 26.—Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, London, E.C., report a fair seasonable trade doing. English Trifolium being scarce, is advancing. Seed Rye keeps firm. Winter Tares continue cheap. New blue Peas do not yet offer freely. In red Clover seed, the recent substantial advance is well sustained. Trefoil keeps dear. Mustard and Rapeseed realised full prices. For bird seeds the sale is slow.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending August 23, and for the corresponding period last year:—1890, Wheat, 36*s.* 6*d.*; Barley, 26*s.* 2*d.*; Oats, 20*s.* 1*d.* 1889, Wheat, 30*s.* 5*d.*; Barley, 19*s.* 6*d.*; Oats, 18*s.* 11*d.*

FRUIT AND VEGETABLES.

Spitalfields: *August* 27.—Good supplies of foreign fruit, but English very scarce; demand good. Plentiful supplies of all kinds of green stuffs and Potatos. Trade only moderate. Prices as follows:—Fruit: English Apples, 4*s.* 6*d.* to 9*s.* per bushel; Pears, 2*s.* 6*d.* to 4*s.* 6*d.* per half-sieve; Red Currants, 3*s.* 6*d.* to 6*s.* do.; Egg Plums, 4*s.* 6*d.* to 7*s.* do.; Victoria Plums, 5*s.* 6*d.* to 8*s.* 6*d.* do.; Orleans Plums, 6*s.* to 9*s.* do.; Greengages, 5*s.* to 8*s.* 6*d.* do.; English Tomatos, 4*s.* to 6*s.* per peck; foreign Tomatos, 9*d.* to 2*s.* per box. Vegetables: Sea-kale, 1*s.* to 1*s.* 3*d.* per punnet; Cabbages, 1*s.* 6*d.* to 4*s.* per tally; Vegetable Marrows, 2*s.* to 4*s.* do.; Cauliflowers, 2*s.* to 3*s.* 6*d.* per dozen; Brussel Sprouts, 1*s.* 6*d.* to 2*s.* per half-sieve; French Beans, 1*s.* 6*d.* to 2*s.* 6*d.* per bushel; Scarlet Beans, 2*s.* to 3*s.* do.; Peas, 4*s.* to 5*s.* per sack; Turnips, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen bunches; Carrots, 2*s.* 6*d.* to 3*s.* 6*d.* do.; ditto, 24*s.* to 60*s.* per ton; Onions, 2*s.* to 2*s.* 6*d.* per dozen bunches; Beetroots, 1*s.* 6*d.* to 2*s.* do.; Parsley, 1*s.* 6*d.* to 2*s.* do.; Mint, 1*s.* 6*d.* to 2*s.* per dozen bundles; Cos Lettuce, 4*d.* to 9*d.* per score; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; Celery, 6*d.* to 9*d.* per bundle; Horseradish, 1*s.* 1*d.* to 1*s.* 4*d.* do.; frame Cucumbers, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen; natural do., 3*d.* to 4*d.* per dozen; English Onions, 5*s.* to 5*s.* 6*d.* per cwt.; Spanish Onions, 7*s.* to 8*s.* per case.

Stratford: *August* 27.—The supply has been good during the past week, and a fair trade done at the undermentioned prices:—Cabbages, 2*s.* to 4*s.* per tally; Cauliflowers, 1*s.* to 1*s.* 9*d.* per dozen; Turnips, 1*s.* to 2*s.* per dozen bunches; do., 35*s.* to 40*s.* per ton; Carrots, household, 45*s.* to 50*s.* do.; do., cattle-feeding, 27*s.* 6*d.* to 30*s.* do.; Mangolds, 20*s.* to 24*s.* do.; Swedes, 60*s.* to 80*s.* per load; Onions, Portugal, 6*s.* 6*d.* to 7*s.* 6*d.* per case; Dutch, 3*s.* to 4*s.* per bag; Apples, English, 3*s.* to 7*s.* per bushel; Scarlet Beans, 1*s.* to 1*s.* 6*d.* per sieve; do., 1*s.* 3*d.* to 2*s.* 6*d.* per bag; Beetroot, 1*s.* 6*d.* to 2*s.* per dozen bunches; Eschalots, 12*s.* to 14*s.* per cwt.; English frame Cucumbers, 1*s.* to 4*s.* per dozen; field

or ridge, 3*d*. to 8*d*. do.; red Cabbage, pickling, 1*s*. to 2*s*. do.; Tomatos, 4*d*. per lb.; Pears, 6*s*. to 8*s*. per sieve; Plums, 4*s*. to 5*s*. per flat; Greengages, 8*s*. per sieve.

POTATOS.

Borough and Spitalfields: *August* 26.—Quotations:—Home grown Myatt's, 60*s*. to 70*s*.; Hebrons, 60*s*. to 80*s*.; Regents, 60*s*. to 70*s*.; Early Rose, 50*s*. to 60*s*.; Magnums, 45*s*. to 70*s*. per ton.

Spitalfields: *August* 27. — Quotations:—Early Rose, 40*s*. to 45*s*.; Hebrons, 40*s*. to 50*s*.; Imperators, 50*s*. to 70*s*.; Regents, 50*s*. to 60*s*.; Myatt's Kidneys, 50*s*. to 55*s*.; Magnums, 40*s*. to 60*s*. per ton.

Stratford: *August* 27.—Quotations:—Magnums, light, 50*s*. to 70*s*.; do., dark 50*s*. to 70*s*.; White Elephants, 50*s*. to 70*s*.; Hebrons, 50*s*. to 70*s*.; Essex Regents, 50*s*. to 60*s*. per ton.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80*s*. to 102*s*. 6*d*.; do., inferior, 46*s*. to 75*s*.; hay, best, 60*s*. to 87*s*.; inferior do., 26*s*. to 50*s*.; and straw, 24*s*. to 42*s*. per load.

Notices to Correspondents.

Books: *C. E. H.* Brown's *Forester* (Blackwood & Sons); Dr. Schlich's *Manual of Forestry*, of which only the first volume has yet been published (Bradbury, Agnew, & Co., Lim.). — *W. D.* The *Botanical Magazine* is published monthly, by L. Reeve & Co., 5, Henrietta Street, Covent Garden, London. — *Charles Schmidt. Mushrooms for the Million*, by J. Wright, 1*s*. (171, Fleet Street, London).

Colville's Nursery, &c.: *D. H. G.* The site of Colville's nursery is now occupied by a public-house called the "Colville," at 72, King's Road, Chelsea. The site of Dennis' nursery is now occupied by shops from 502—512, King's Road, Chelsea. Sir Richard Hoare's garden was at Stourhead, Wilts. He died at Stourhead, May 19, 1838.

Diseased Ferns: *E. J. L.* I do not think fungi have anything whatever to do with these Fern fronds. I have looked over them well, and I can see none of the fungi to be found on Ferns. *W. G. S.*

Disease in Plants: *Cambridge Pathologist.* This is simpler than in animals, owing to the absence of any special nervous system. It may be defined as a want of proper balance between the plant and the conditions under which it is growing. This want of adjustment may arise from faulty organisation of the plant itself (hereditary), or from food that is unsuitable, injurious, or unseasonable; from injury caused by drought or superabundant moisture, deficiency of oxygen, excessive heat or paralysing cold, from too much or too little light, from poisons, from parasitic insects of various kinds, nematode worms, fungi or bacteria. These may act separately or in various combinations, and their effects differ according to season, age, and condition of the plant. They all bring about unhealthy nutrition and faulty action of the protoplasm. We do not know of any "neoplasm" in plants apart from that which is produced by gall-insects. Diseases of respiration are in plants too much mixed up with diseases of nutrition to be easily separated.

Gladiolus: *H. E.* Very pretty, and worth propagating.

Insect on Lime Trees: *W. R.* The moth injuring Limes at Southampton, is Tinea Linneella.

Ivy: *E. M.* The Irish Ivy is the quickest. The Japan Ampelopsis (A. Veitchii) is not evergreen, otherwise it is neater than Ivy.

Lapageria: *T. F.* Nothing particular—many better.

Milner's "Landscape Gardening:" *J. B.* A review of the book in question will appear shortly.

Names of Fruit: *A. C.* Apples: 1, not recognised; 2, Gloria Mundi.—*H. H.* Pear Windsor.—*W. F.* The Peach was smashed beyond all recognition.—*W. Tilling.* Peach Barrington or Late Admirable, we cannot tell with certainty from the fruits alone.—*E. S. & S.* Plum Dennistoun's Superb.—*F. Calver.* Your Apple is not recognised; it is probably a local variety not grown elsewhere.

Names of Plants: *H. M.* should address the editor. We do not recognise your plant from the scrap sent. — *Old Subscriber.* 1, Euphorbia Lathyris Caperspurge; 2, Salix repens.—*H. D.* 1, Stenactis speciosa; 2, Potentilla sp.; 3, Cephalotaxus Fortunei; 4, Pittosporum tenuifolium; 5, Veratrum album; 6, Actea spicata.—*W. G. G.* Phloxes, all withered. Send them to some nurseryman who makes a specialty of them.—*W. D.* Diplacus glutinosus.—*H. E.* Richardia æthiopica: the wild form, or very near to it.—*P., Epping.* The yellow flower is Impatiens noli-me-tangere; the other seems to be meant for a Silene.—*Nemo.* Dodder, Cuscuta europæa. *W. P.* Trachelium cœruleum. —*R. H. B.* is rather exacting in his demands. We are very willing to oblige; but, on the other hand, "R. H. B." should show a little consideration. Our rule is, that not more than six plants should be sent at a time. 1, Salvia verbenaca; 2, Lysimachia sp.; 3, Bocconia cordata; 4, Eupatorium cannabinum; 5, Athyrium filix-fœmina; 6, Lastrea filix-mas; 8, Cystopteris fragilis; 9, Lastrea filix-mas cristata; 10, Chlorophytum viviparum; 11, Lastrea glabella; 12, Aspidium caryotideum; 13, Jasminum ochroleucum; 15, Lonicera sempervirens; 16, Gymnogramma chrysophylla; 17, Gymnogramma ochracea; 18, Begonia Louise Chrétien.—*Bahadoor.* Solanum Warscewiczii.—*J. C. E.* Anthericum lineare variegatum.

Peach and Nectarine on the Same Shoot: *S. J. H.* This is unusual, but not unprecedented. Many cases are recorded, and some have been figured in our columns. The occurrence is due to the more or less complete separation of hitherto blended elements, but what induces the unmixing is not known.

Primrose, &c.: *Symbol Flos.* We cannot answer your question. Consult some popular treatise on the language of flowers.

Prunus Pissardi: *B.* This purple-leaved Plum is ascertained to be only a variety of P. cerasifera. It is unfortunate it should have had a specific name.

Soldier-Botanists: *X.* General Munro was the chief authority on grasses, and a good gardener. He saw much active service in the Crimea and elsewhere. Colonel Champion, of the 95th, was also known as a botanist in Ceylon; he was killed before Sebastopol. But the military profession is, as you say, not well suited for indulgence in botanical pursuits.

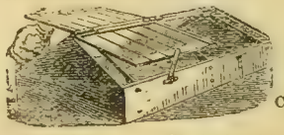
CATALOGUES RECEIVED.

Wm. Clibran & Son, 10 and 12, Market Street, Manchester—Bulbs.
E. P. Dixon & Sons, Hull—Bulbs and Flower Roots.
Sutton & Sons, Reading—Bulbs.
W. B. Hartland, 24, Patrick Street, Cork, Ireland —Bulbs.
Van Meerbeek & Co., Hillegom, near Haarlem, Holland—Dutch Bulbs.
J. Laing & Sons, Forest Hill, London, S.E.—Bulbous Roots.
Jas. Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, S.W. — Bulbous Roots; also Fruit List.
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John Watkins, Pomona Farm, Withington, Hereford—Strawberry Plants, &c.
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Communications Received.—G. N.—G. B.—G. H.—W. G. S. —W. M.—Dr. Schinz, Zurich.—D. T. F.—Vicomte de Saint-Leger, Rio Janeiro.—F. G.—E. J. L.—W. E. G.—T. B. (many thanks).—E. C.—J. A(2). — C. W. D. — Secretary National Co operative Show (publication deferred).——Mr. Slocock (with thanks).—W. Fell & Co. (see our last issue). —Sutton & Sons.—E. O E.—W. H. B.—R. A. R.—J. W.— W. J.—A. D.—J. A.—M. Sullivan.—M. Temple.—T. H. M. —W. B.—H. E.—A.—C. S. & Co.—J. Forbes.—E. Cording, —J. Rust.—C. W. D.—H. R. H. (the insect was smashed on arrival).

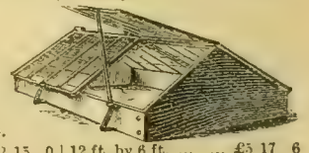
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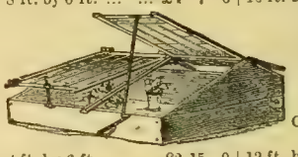
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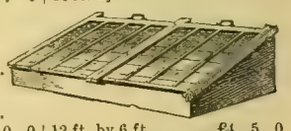
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8 ft. by 6 ft.	...	...	£4 7 6	16 ft. by 6 ft.	...	...	£7 7 6



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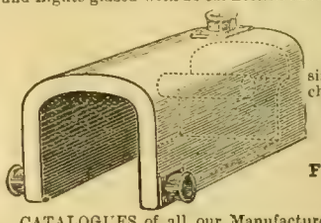
4 ft. by 6 ft.	...	...	£2 15 0	12 ft. by 6 ft.	...	...	£5 0 0
8 ft. by 6 ft.	...	...	£4 7 6	16 ft. by 6 ft.	...	...	£7 12 0



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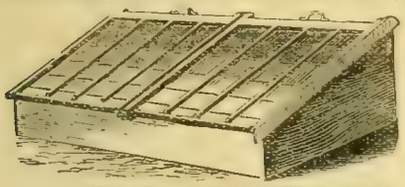
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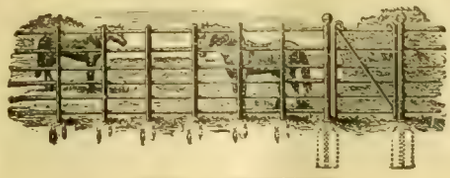
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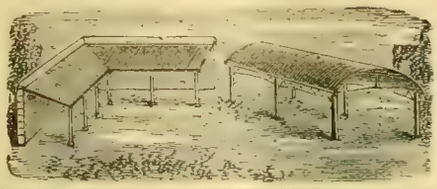
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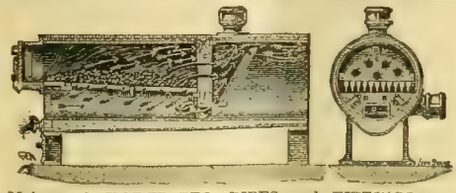
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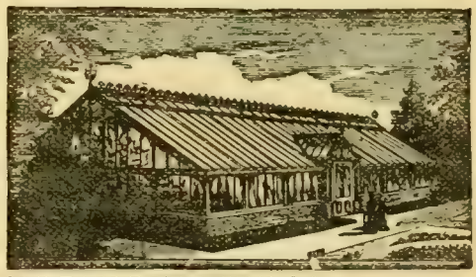
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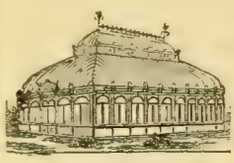
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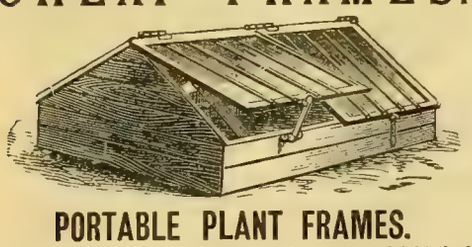
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THE TOWN COUNCIL are willing to receive applications from Candidates for the APPOINTMENT of HEAD GARDENER to the Corporation, shortly to become vacant. Wages, £2 5*s*., with a house free of rent, rates, and taxes. Applications, with testimonials, endorsed "Application for Appointment of Head Gardener," are to be forwarded before 5 o'Clock, on Tuesday, September 9, 1890, to me at my Office, at the Town Hall, Brighton, where further information may be obtained. FRANCIS J. TILLSTONE, Town Clerk.
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WANTED, FOREMAN, Kitchen and Flower Garden. Well up in Vines, Peaches, and Figs. To take part in Church Choir.—W. M. GEDDES, Thrumpton, Derby.

WANTED, a FOREMAN Tomato Grower, permanency for a good man.—H. DICKINSON, Shardlow, near Derby.

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WANTED, a strong steady young MAN, as Third, where five are kept (not under 20). Wages 13*s*., with bothy, milk, and Potatos.—J. HORNER, The Gardens, Myton, Helperby, York.

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C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to—
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.
N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

10 TONS SHALLOTS for SALE. What offers.
Apply, JOHN J. FOX, Mid-Kent Fruit Farm, Tonbridge.

LOVEL'S Yorkshire STRAWBERRIES.—Strong, healthy, and well-rooted Runners, to fruit next season. Thury, Paxton, President, Noble, and other good varieties. Full Descriptive Price LIST with Testimonials free. Sample Parcel, 3*d.*—W. LOVEL AND SON, Driffield.

Fruit Trees a Specialty.
STRAWBERRIES.—One of the best collections in the Trade, including Noble and other new sorts, and the best for Garden or Market. Descriptive LIST free.
FRUIT TREES of all sorts. CATALOGUES free. Full Descriptive LIST, giving much valuable information, 6*d.*
JOHN WATKINS, Fruit Tree Grower, Pomona Farm Nurseries, Withington, Hereford.

LAXTON'S NOBLE STRAWBERRY. Strong Plants, 5*s.* per 100, £2 per 1000.
JAMES CROMBIE, Florist, Barrow-in-Furness.

STRAWBERRIES.—A fine Collection of the best varieties can be supplied. Orders should be booked now. Descriptive CATALOGUE post-free.
THOMAS RIVERS AND SONS, Sawbridgeworth.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Dutch Bulbs.—Dutch Bulbs.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots to suit all buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving weekly from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Wednesday Next.

400 choice named AZALEA INDICA well set with Flower Bud, from Ghent. Also 500 Bulbs of GRIFFINIA HYACINTHINA, home-grown LILIUM AURATUM, L. MARTAGON, L. DAVURICUM, TUBEROSES, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, September 10.

On view morning of Sale, and Catalogues had.

Thursday Next.

VALUABLE ESTABLISHED and IMPORTED ORCHIDS, 10,000 AFRICAN TUBEROSES, received direct, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 11, at half-past 12 o'Clock precisely, valuable ESTABLISHED ORCHIDS, from various Private Collections, comprising some choice Cypripediums, Odontoglossums, Oncidiums, &c. Also an Importation of Cattleya gigas, Angræcum sesquipedale, &c., received direct; 10,000 African TUBEROSES, &c.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.

GREAT UNRESERVED SALES.
Four times Weekly.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, all received direct for Unreserved Sale, and lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Leigham Court, Streatham Hill, S.W.

UNRESERVED SALE of the remaining FURNITURE, FARM IMPLEMENTS, HORSE, BROUGHAM, Choice Collection of STOVE and GREENHOUSE PLANTS and EFFECTS, the Freehold Estate having been sold.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Leigham Court, Streatham Hill, S.W., opposite Streatham Hill Station, on TUESDAY and WEDNESDAY, September 9 and 10, at 12 o'Clock each day, without reserve, the remaining HOUSEHOLD FURNITURE, comprising Bedroom Appointments, two handsome Rosewood Cabinets, Maple Book-case, two 4-feet Console Tables and massive Glasses, Oak Hall Sideboards, two large Cut-glass Chandeliers, Carpets, Tables, full-sized Billiard Table (nearly new) by Messrs. G. Wright & Co., the whole of the FARM IMPLEMENTS, two iron Field Rollers, several Tumbril Carts and Waggons, Water Cart, Mowing Machines, Double-action Manual Fire Engine by Shand, Mason & Co., Bay Gelding, Brougham, two Stacks of Hay, together with the whole of the choice and well-grown collection of STOVE and GREENHOUSE PLANTS, consisting of Crotons, Dracænas, Ferns, Palms, a few Orchids, Tree Ferns, Chrysanthemums, very fine specimen Orange Trees, Camellias and Azaleas, Vases, Statuary, and other items.

May be viewed the Saturday and Monday prior to the Sale. Catalogues may be had of Mr. BUTT, the Head Gardener, on the premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Sidcup, Kent, S.E.

TENTH ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Gregory & Evans to SELL by AUCTION, on the Premises, The Longlands Nurseries, Sidcup, Kent, S.E., ten minutes' walk from New Eltham Railway Station, S.E.R., on THURSDAY, September 11, at 11 o'Clock precisely, in consequence of there being upwards of 1300 lots, an enormous quantity of unusually well-grown plants, comprising—

25,000 WINTER-BLOOMING HEATHS,

in exceptionally fine condition; unquestionably the best ever offered at these Nurseries, being beautifully set for flower, and including 8000 Erica hyemalis, 5000 E. gracilis; also large numbers of E. Wilmoreana, E. caffra, E. hyemalis superba, and others.

3,000 Erica ventricosa of sorts	3,000 Maidenhair Ferns in 48-pots
2,000 ,, Cavendishii	5,000 Maidenhair Ferns in thumbs
25,000 small Ferns for growing on, consisting of Pteris cristata, and cristata compacta, P. Mayi, P. compacta, P. argyrea, and others.	3,000 Tea Roses in 24 and 32-pots, magnificent plants
	2,000 Poinsettias
2,000 Carnations, Miss Joliffe and Gloire de Nancy	3,000 Solanums, well-berried
	3,000 Genistas

And other Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next.—Established Orchids.

CYPRIPEDIUM AYLINGII in Flower.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, September 12, at half-past 12 o'Clock precisely, a large assortment of well-grown ESTABLISHED ORCHIDS, from various owners; also a quantity of IMPORTED ORCHIDS, together with a plant in flower of the rare and beautiful CYPRIPEDIUM AYLINGII, lately certificated.

On view morning of Sale, and Catalogues had.

Upper Edmonton.

FIFTH ANNUAL SALE of about 45,000 GREENHOUSE and other Plants.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. May to SELL by AUCTION on the Premises, The Dyson's Lane Nursery, Upper Edmonton (five minutes' walk from Angel Road, and eight minutes' from Silver Street Railway Station, G.E.R.).

On MONDAY, September 15,

at 12 o'Clock punctually, in consequence of the large number of lots.

45,000

STOVE and GREENHOUSE PLANTS,

remarkably well-grown, and in the best possible condition, including

20,000 FERNS,

for the growth of which this Nursery is so famed, all being of the most useful market sorts, and amongst them many novelties.

10,000 TREE CARNATIONS,

comprising a fine lot of Mrs. Reynolds Hole, Mdlle. Carle, A. Alegatierre, &c. A good lot of Old Crimson CLOVES.

2,000 TEA ROSES in Pots (extra strong),

embracing Maréchal Niel, Gloire de Dijon, and W. A. Richardson, with well-ripened growths from 15 to 18 feet long; also The Bride, Niphetos, Souvenir de un Ami, and others.

10,000 BOUVARDIAS,

including President Cleveland, Mrs. Robt. Green, Candidissima, and all the best double and single varieties.

3000 GENISTAS, fine bushy Plants.

Solanums (well berried), Crotons, Dracænas, Eucharis Amazonica, Aralias, Statices, Euphorbias, Ampelopsis Veitchii, Clematis, Ivies, Cyclamen, Primulas, Camellias, Azaleas, Ficus, Palms, &c. Genistas and Bouvardias for growing on, and a great variety of other useful Plants.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Lee, Kent, S.E.

GREAT ANNUAL TRADE SALE, to commence punctually at 11 o'Clock, there being upwards of 1200 lots to sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons to SELL by AUCTION, on the Premises, The Burnt Ash Lane Nurseries, Lee, Kent, S.E. (adjoining the Railway Station, South Eastern Railway), on TUESDAY, September 16, at 11 o'Clock punctually, without reserve, a remarkably well-grown stock of

WINTER-BLOOMING HEATHS,

all beautifully set with bloom-buds; and other

STOVE and GREENHOUSE PLANTS,

consisting of—

20,000 Erica hyemalis	1000 Boronia megastigma, and others
5,000 ,, gracilis	400 Solanum capicastrum, well berried
2,000 ,, Cavendishii	1000 Adiantum cuneatum
1,000 ,, coccinia minor	1000 Lomaria gibba
600 ,, caffra	800 Tea Roses in pots
600 ,, melanthera	500 Aralia Sieboldii
1,000 Grevillea robusta	500 Clematis Jackmanni
1,000 Ampelopsis Veitchii	550 Crotons, beautifully coloured
500 Acacia armata	
1,000 Palms, of sorts	
1,500 Epacris, to name	
5,000 Genistas	

with a large quantity of Epacris and Boronias of sorts. Young Erica hyemalis, E. Cavendishii, E. gracilis, and others; also Genistas, in 60-pots, for growing on.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—An inspection is invited of the Plants included in this Sale, the Heaths being particularly fine, and the whole of the Stock of the same first-class character as in previous years.

Lea Bridge Road, E.

ANNUAL UNRESERVED SALE of fine Winter-flowering HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL by AUCTION, on the Premises, the Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway), on WEDNESDAY, September 17, at 11 o'Clock precisely, in consequence of the large number of lots, a large quantity of WINTER-FLOWERING and other PLANTS, including:—

20,000 Erica hyemalis	2,000 Maréchal Niel, Gloire de Dijon, William Allen Richardson, 8 to 10 feet; Niphetos, and other Tea-scented Roses in great variety
1,000 Tree Carnations	
4,000 Erica gracilis	
6,000 Genista fragrans	
6,000 Ampelopsis Veitchii, 4 feet	1,000 Deutzia gracilis, established in pots, for earliest forcing
1,000 Epacris	
2,000 Lapageria rosea superba	6,000 Bouvardias, including a lot of "President Cleveland."
6,000 Cyclamen persicum (Fraser's superb strain)	
2,000 Passiflora Constance Elliot and cærulea	5,000 Solanums, beautifully berried
2,000 Variegated and other Ivies	1,000 Clematis indivisa lobata
6,000 Clematis Jackmanii, and other best-named sorts	

and a great number of Erica ventricosa, Cavendishii, caffra, large-flowering white Jasmines, Stephanotis floribunda, Boronia megastigma, Escallonia macrantha, Gum Cistus, Japanese Honeysuckles, Ceanothus, Broad-leaved Gold and Silver Euonymus, Magnolias of sorts, Figs strong in variety, India-rubber plants, Palms, Ferns, a few nice Araucaria excelsa, and other plants. Also a large quantity of young Heaths and Genistas, for potting on.

The whole of the Stock is in the best condition, and ready for immediate sale.

HOE STREET STATION, on the Great Eastern Railway, is within a short distance of the Nursery. Trains from Liverpool Street every half-hour.

May be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Enfield Highway, N.

TWENTY-SECOND ANNUAL TRADE SALE of STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Brimsdown Nursery, Green Street, Enfield Highway, N., adjoining the Brimsdown Station, Great Eastern Railway, on THURSDAY, September 18, at 11 o'Clock punctually, in consequence of the unusually large number of lots, by order of Mr. John Maller, without reserve, upwards of 1200 lots of remarkably well-grown STOVE and GREENHOUSE PLANTS, mostly in No. 48-pots, and fit for immediate Sale, consisting of

15,000 WINTER-BLOOMING HEATHS,

including hyemalis, gracilis, Cavendishii, Ventricosas in variety, &c.

5000 Solanums, exceptionally well-grown and berried.
5000 Ferns, Adiantums, Lomarias, Pteris, &c.
3000 Tree and other Carnations, leading varieties, including Mrs. Moore and Duke of Fife.

1000 Epacris to name	1000 Stove and Greenhouse Climbers, including—Dipladenias of sorts, Allamandas, Bougainvilleas, Stephanotis, Tacsonias, &c.
5000 Bouvardias, including President Cleveland, Vulcan, and other best varieties	
1000 Grevillea robusta	
5000 Genistas	
500 Double White Primulas	1000 Passifloras
500 Crotons, beautifully coloured	2000 Ampelopsis Veitchii

500 Euphorbia Jacquiniflora, Chrysanthemums, new varieties, Palms, Ficus, Large Camellias and Azaleas for cutting, many thousands of small Ericas, Genistas, Ferns, &c.

Large quantities of Acacias, Gardenias, Geraniums, Cyperus, Poinsettias, Euonymus ovatus aureus, &c., suitable for the Trade and other extensive Buyers.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and also at the Brunswick Nursery, Tottenham, and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

N.B.—The whole of the Stock is in first-rate condition, the Ericas being especially well set for flower, and the Solanums unusually well berried.

Leytonstone, E.

ABSOLUTE CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the premises, The American Nurseries, Leytonstone, adjoining the Leytonstone Railway Station, on FRIDAY, September 19, at 12 o'Clock to the minute, without the slightest reserve (the land being required for other purposes), the whole of the choice Stove and Greenhouse Plants, consisting of Camellias, Azaleas, Dracænas, Pandanus,

10,000 CHOICE PALMS IN VARIOUS SIZES,

including Kentias, Cocos Weddelliana, Areca lutescens, Latania borbonica, Seaforthias, and Areca Baueri.

A FINE STOCK OF THE BEAUTIFUL NEW VARIEGATED FICUS,

double white Primulas, Lapageria alba, Bouvardias, a fine assortment of choice Ferns, a small collection of Exotic Orchids, fine pot Roses, with strong canes of Maréchal Niel and Gloire de Dijon; also

ELEVEN GREENHOUSES

containing

3000 FT. OF 4-IN. HOT-WATER PIPING,

Boilers, about 1500 feet of slate slab staging, also the erection of Stabling, Bay Mare, and Ayrshire Cow, capital spring market Van with covered top, a Phæton, a capital Band Saw for hand or steam-power, and numerous other articles.

The stock may be viewed the day prior to the Sale. Catalogues may be had on the premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B.—The whole of the Out-door Nursery Stock will be Sold by Auction during the coming season. See dates in notice of Forthcoming Sales in *Gardeners' Chronicle* of August 30.

Husbands Bosworth, Rugby.—Preliminary Notice.

The ENTIRE COLLECTION of well-grown STOVE and GREENHOUSE PLANTS, comprising Camellias, Azaleas, Crotons, and others; Ferns, Palms, Orchids, and a good collection of useful WINTER-FLOWERING PLANTS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mrs. Gebhardt to SELL the above by AUCTION, on the Premises, Highcroft, Husbands Bosworth, Rugby, on THURSDAY, September 25.

Further particulars will appear next week.

Catalogues may be had on the Premises, and of the Auctioneers, 67 and 78, Cheapside, London, E.C.

Sunningdale.—Preliminary Notice.

Without the least reserve.

SIX DAYS' ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. C. Noble, who is under notice to quit all lands held by him under St. John's College, Cambridge, at Christmas next.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, on MONDAY, October 6, and five following days, without reserve, several acres of unusually well-grown NURSERY STOCK, carefully prepared for removal.

Fuller announcements will appear in due course.

Great Orchid Sale.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. Sander to SELL shortly by AUCTION, extra consignments of ORCHIDS, comprising the finest lot of Vanda Sanderiana yet offered for sale. This is not only the best Vanda, but perhaps the finest Orchid in existence. The same sale will contain a specially grand quantity of Aërides Lawrenceiana and Sanderiana in wonderful condition and health; these being the two finest Aërides in existence, their great spikes and flowers making them extremely showy and attractive. Large importations of Cattleya species of the Chrysatoxa and Imperialis type, and new Masdevallias, Odontoglossum vexillarium of the large flowering radiated section, the finest extant; a new type of Cattleya Trianæ, new Cypripediums, and other NEW ORCHIDS; a fine importation of Cypripedium Rothschildianum and Sanderianum, &c.

Full Particulars of which will appear shortly.

Isleworth.

GOLDEN EUONYMUS and SHRUBS for POTS.
Annual Trade Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, by order of Messrs. C. Lee & Son, on the Premises, the Wood Lane Nursery, Isleworth, on TUESDAY, October 7, several thousands of GOLDEN EUONYMUS, and immense quantities of young CONIFERÆ, for potting, specially grown for this Sale.
Catalogues may be had on application.

Important Notice.

MESSRS. PROTHEROE AND MORRIS desire to inform their numerous Clients that a full LIST of their FORTHCOMING SALES of NURSERY STOCK appeared in the *Gardeners' Chronicle*, on Saturday last, August 30.
Further Sales are now in course of arrangement, and will be duly announced.
Catalogues of all Sales are forwarded free by post on application.

Every Thursday.—Dutch Bulbs.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY NEXT, and every THURSDAY throughout the season, at half-past 11 o'Clock A.M., large consignments of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland; also Roman HYACINTHS and Paper White NARCISSUS. Lotted to suit all buyers.
On view morning of Sale, and Catalogues had.
On WEDNESDAY and FRIDAY EVENINGS, at half-past 5 o'Clock, SALES of Choice CUT FLOWERS. Entries invited.
Nursery Stock Sales conducted and Valuations made.
Auction Rooms and Offices, 6, Phillips Street, Birmingham.

Thursday, September 11.

MESSRS. POPE AND SONS will include in their SALE on THURSDAY NEXT, September 11, at 11.30 A.M., 7000 SEEDLING PALMS, consisting of Seaforthias, Latanias, Kentias, Arecas, Geonomas, and Cocos Weddelliana; also about 250 ADIANTUM CUNEATUM in 32 and 48-pots.
On view morning of Sale, and Catalogues had. Auction Rooms and Offices, 6, Phillips Street, Birmingham.

Earlsfield, St. Ann's Hill, Wandsworth.

By Order of the Executors of the late Robert Davis, Esq., J.P.
QUANTITY of STOVE and GREENHOUSE PLANTS, including Palms, Stephanotis, Lapageria rosea, Hoyas, Azaleas, Camellias, Arums, Maidenhair and other Ferns, &c.; also 160 Choice Chrysanthemums, grown from the most expensive and best-known sorts; 2 Acres of Turf, Green's LAWN-MOWERS, ROLLERS, GARDEN TOOLS, BARROWS, FLOWER-VASES, FIGURES, 350 Iron HURDLES, 2500 Garden Edging TILES, HORSES, CARRIAGES, pure-bred Alderney and Devon COWS, well-bred POULTRY, FARMING IMPLEMENTS, and a multiplicity of useful Effects.

MESSRS. A. W. TAYLOR AND CO. will SELL the above by AUCTION, on SATURDAY NEXT, September 13, at 12 o'Clock to the minute.
Catalogues of the Auctioneers, 119, High Street, Putney.

Great Clearance Sale of Nursery Stock.

MESSRS. MORRISON BROTHERS will offer for SALE by AUCTION about the LAST WEEK of SEPTEMBER, the whole of their finely-grown NURSERY STOCK, consisting of upwards of 20,000 Roses, many thousands of named Rhododendrons, Conifers, Ornamental Trees, Evergreens, and Deciduous Shrubs, all in fine healthy condition for removal. This is an opportunity for Proprietors filling their home nurseries with young Conifers from California and Japan at a cheap rate.
The days of Sale and Catalogues will be announced when ready. Forbesfield Nursery, Aberdeen.

WANTED, a SEED, FLORIST, and NURSERY BUSINESS, in a country town.—Full particulars to J. W., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Nurserymen, and Others.

MR. TYDEMAN has LAND suitable for Nurserymen, FOR SALE, 3 acres Meadow, 4 acres Meadow, and 33½ acres arable, in parish of Cheshunt.—Apply Mr. TYDEMAN, Auctioneer and Estate Agent, Waltham Cross.

FOR SALE, with immediate possession, a SMALL NURSERY, 4 Greenhouses, and Seed Shop, all fitted with hot water; half an acre of Land, Pits and Frames; Pony and Cart, and everything for use, and well stocked. Will suit a beginner. Held by present owner sixteen years. Prominent position. Entrance to Queen's Road Railway Station, Peckham. Come and see.

TO BE SOLD, as a going concern, NURSERY and FLORIST BUSINESS.—3½ acres Ground, 7 Greenhouses, and Shop, all stocked with good saleable stuff. Good House and Sheds. Stock at valuation.
BOUVARDIA, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, 7 acres of FREEHOLD LAND, well stocked with choice Cob Nut trees (Webb's), also Apple trees are in full bearing. Together with a convenient well-built Cottage and outbuildings, situated about one mile from Liphook Station, Hants, on the South Western Railway.
For further particulars, apply by letter to Mr. LILLYWHITE, Ropley, near Alresford, Hants.

NURSERY FOR SALE. No reasonable offer will be refused, as the Proprietor is old, and determined to sell at almost any price. Fine saleable outdoor stock.
Apply to Z., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Suffolk.

Capital opening for a pushing Flower and Fruit Grower in Established Business, capable of Extension.

TO BE LET or SOLD, a NURSERY, with two new well-arranged Greenhouses, 100 feet by 16 feet, and 180 feet by 10 feet; Forcing-house, &c. Stock at Valuation.
Apply, JOS. GREENER, 101, Leadenhall Street, London, E.C.

TO NURSERYMEN.—SMALL BUSINESS, Herts.—Two Glass Houses, heated; Cold Pits, 46 Lights; 1½ acres dug up; rent £36; includes eight-roomed Dwelling House; in good working order; produce sells at good prices; Tomatos, Grapes, Flowers, Plants, &c. Lowest price £200, for everything.
Apply Mr. TYDEMAN, Auctioneer and Estate Agent, Waltham Cross.

Brighton (near).—To Nurserymen and Others.

A CHARMING LITTLE PROPERTY of about 1 Acre, with Bungalow Residence having 2 Sitting-rooms, 4 Bed-rooms, and Domestic Offices, all on Ground Floor. There are 4 Vineries (2 large), with Vines in full bearing; and Peach-house; Also Stabling for 2 horses, and Chaise-house. Rent, £60. Premium for improvements and lease, £150.
For further particulars, apply to PARSONS AND SON, Auctioneers and Estate Agents, 9, Marine Parade; and 124, Western Road, Brighton.

Channel Island.

TO BE LET, as a going concern, a FLOWER and FRUIT NURSERY. An acre of Ground, nine large Houses, all well-stocked; four-roomed Cottage, Shop, and convenient Offices. Capital corner position in the town. Good local trade in full work. Stock, Fixtures, Tools, &c., as it stands, £200. Genuine bargain.
Apply to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

TO BE LET, 1 to 10 acres of GRASS LAND, suitable for Nurserymen and others, on Lease for 7, 14, or 21 years. Rent from £8 to £12 per acre, with the option of Purchasing the Freehold within the first 7 years. No tithe. Near the main road Enfield Highway, about 9 miles from London.
Apply, H. MOORE, 59, Bishopsgate Street Within, E.C.

TO LET, a well-established NURSERY, about 12 acres in extent, well stocked and in fine condition, situated near a large city.—Full particulars on application to A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

NEW DESCRIPTIVE PRICED CATALOGUE

Post-free on application to

THE VINEYARD AND NURSERIES,

GARSTON, near LIVERPOOL.

ASPARAGUS PLUMOSUS NANUS, Seedlings, 50s. per 100; in 60-pots, 75s. per 100; in 48-pots, £7 10s. per 100.
COCOS WEDDELIANA, Seedlings, 10s. per 100; thumbs, 50s. per 100; 60-pots, £5 per 100, 18-pots, £2 10s. per 100.
WILLIAM ICETON, Nurseryman and Florist, Putney Park Lane, Putney, S.W.

FOR SALE, 3000 GENISTAS, in 5-inch pots, at 25s. and 30s. per 100, good bushy plants. Hay's strain of PRIMULA, in thumbs, at 7s. per 100. Cash with order. Post-office orders payable at High Street, Leyton.
T. BALDWIN AND SON, Edith Nursery, Burchall Road, Leyton.

BULBS and FLOWER ROOTS. The cheapest offer of first-rate Bulbs in the Trade. Prices but little over auctions. Quality unsurpassed. See testimonials. Every article grown by a specialist. Early importations now to hand. CATALOGUES on application.
J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-yr. old flowering Crowns for forcing, and 2 and 1-yr. old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.
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Tenders are to be delivered before 12 o'Clock noon, on FRIDAY, the 26th of September, addressed to "The Secretary, Her Majesty's Works, &c., 12, Whitehall Place, London, S.W.," and endorsed "Tender for Grass Seeds, Royal Parks, &c."
The Commissioners do not bind themselves to accept the lowest or any Tender.
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Vol. VII., Third Series, JAN. to JUNE, 1890.
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THE
Gardeners' Chronicle.

SATURDAY, SEPTEMBER 6, 1890.

M. BOISSIER'S GARDEN.

ON the 5th of April last, I had the opportunity of visiting the garden founded by M. E. Boissier, at Valleyres, Vaud, in a very sunny situation in the Jura, and at an elevation of 1900 feet, on calcareous soil. It may be asked how some plants from high glacial regions can thrive where the heat of the summer sun is so intense, and how they can bloom and ripen their seed in such a situation? The ability to do so is evidently consequent on the dampness of the air, for, in this village, which is completely encircled with vineyards, there is an abundance of water, which rushes down from various sources, and is so plentiful that under the sun's action there is great evaporation, and the atmosphere becomes saturated with moisture. Thus the alpine plants are surrounded by the perpetual humidity which is one of the necessities of their existence. The growth on the sides of surrounding mountains of dense forests of Spruce Firs, Silver Firs, and Beeches, and the rich orchards in the immediate neighbourhood of the village, all contribute to saturate the air with moisture.

Very singular at the garden at Valleyres, is the system employed of gardening on walls, which has been most highly spoken of. (See the *Gardeners' Chronicle*, June 28, 1890, p. 791.) The garden is arranged on terraces rising one above another, which are suggestive of the hanging gardens of Semiramis. It is science which is here the first consideration, for, as might be expected, there is no question of good taste or beautiful effect in the arrangements, artistic grouping being considered of minor importance. In spite of that, the result is pleasing, the plants are so interesting that it is impossible to refrain from admiring the general effect produced by the system of cultivation.

A first terrace, surrounded by walls from 9 to 10 feet high, and abutting on a house which shelters it from the north-east, comprises a series of calcareous rocks arranged in quadrilateral parallelograms, so arranged that they form rocky

borders, which rise to a height of from 6 to over 9 feet in height. These rocks are either isolated, parallel one to another, or propped up against the walls which surround the garden. They are formed, some of tufa, some of Jurassic calcareous rock, and afford pockets of different sizes and depths, which are filled with various soils according to the chemical or physical affinities of the species grown in them.

M. Boissier thought calcareous rock to be a formation which suits all plants, or at least that owing to the slowness of its disintegration, the lime which it contains does not harm any species. I cannot say that he is right, after the remarkable experiments on plants growing on silicious soils made by M. Rosenstiehl of Paris, and of which I will some day speak in the *Gardeners' Chronicle*. It is proved that certain plants found only on silicious soils, such as Heaths, Lycopods, Asplenium septentionale, A. germanicum, Polypodium Phegopteris, Androsace carnea, do not succeed well at Valleyres, where the fact that the water which they are supplied with is calcareous, is itself sufficient to explain the failure. To grow certain plants successfully, an isolated rock must be constructed of igneous or silicious stones, containing in the pockets only peat or sphagnum, and the specimens must be watered with rain-water, or, bearing in mind the fact that the air in these districts contains calcareous dust in suspension, with distilled water. The lime-loving plants, and those to which the chemical composition of the soil is indifferent, do splendidly at Valleyres. On the first terrace, of which I have spoken, and which is the oldest, and the one where Boissier began his experiments on acclimatisation, there is no tree nor shrub to shade the rocks. The house only, during certain hours of the morning, gives a little shade. It is true that the rocks which are propped up against the surrounding walls are shaded for a long time, but they are filled with special plants which require shade and coolness.

M. Boissier fully understood that the rock is porous, and absorbs and exudes sufficient moisture from and into the air, even in the warmest summer sunshine, so that plants from mountainous regions, exposed to such heat, can flourish, as in the case at the high altitudes, where they are constantly surrounded by a cloud of moisture and dampness which tempers the hot rays of the sun. We also saw growing there specimens of the most brilliant flora of the East and of Spain, side by side with that of our Alps. Little "hummocks' of Acantholimon glumaceum and venustum alternate with Androsace Laggeri, A. lactea, and Saxifraga longifolia and bryoides.

The rocks were, at the time of my visit, completely covered with verdure and flowers, principally of species brought from the East and from Spain. The different species of Æthionema grown here are remarkably curious:—A. iberideum, with milk-white flowers; Omphalodes Luciliæ, Armeria cæspitosa, several Silenes, curious Saxifragas, Potentilla speciosa, which scrambles over all the rocks, and which is treated almost as a weed; Helichrysum of diverse sorts; the very rare Eryngium glaciale, not to be found in any other collection; various kinds of Erodium from the East and from Spain, amongst which must be first mentioned, E. Sibthorpianum, with rosy-lilac flowers, which cover the plant during a good part of the summer; Daphne Blagayana, which grows splendidly at Valleyres; many species of Dianthus, Haberlea rhodopensis, Yanthe bugulifolia, several kinds of Lithospermum, Primula marginata and crenata, which here attain great size, and form regular bushes; Arabis purpurea, Alsine juniperina, Rosani, and saxifraga; Arabis Androsacea, Boryi, Hypericum nummularium, Linaria anticaria, pallida, hepaticæfolia, and villosa; Antirrhinum azarina, Mathiola varia, Dryas Drummondi, Drypis spinosa, Arenaria tetraquetra, Kotschyana; Campanula garganica, Morettiana, muralis, Raineri, Waldsteiniana, and Wanneri; Pterocephalus Parnassi, Asperula athoa, a complete collection of Aubrietia, and a crowd of other species, each more interesting than the others.

This first terrace also includes cold frames, which contain a very good collection of pot-plants, amongst other sorts there is an almost complete set of Saxifragas. There are also borders divided into pockets devoted to bulbs, amongst which I saw some splendid Fritillarias (including all the cultivated species), Tulips, Muscari, &c., and what is still more remarkable, a rich collection of terrestrial Orchids.

Leaving this first terrace, we pass through a little narrow door to find still more interesting specimens. We leave the purely eastern and southern flora for specimens from all the mountainous parts of the world, from the extreme east to the west, and from north to south. Here we have a single mound, built up of tufa and Jurassic rock, over 7 feet high, with a plateau at the top about 9 or 10 feet wide. All the plants here seem in perfect health. There are Soldanellas, Rhododendrons, Hellebores, Ranunculi, Saxifragas, Campanulas, Cypripediums, &c. Here the general effect is quite artistic, and when many plants are in bloom at once the result is surprisingly good.

In the crevices of the walls, thousands of choice plants are growing which do well, and run all over the place quite naturally. Even the gravel is dotted with little rarities, which shoot up there as if in their native land, so that every step of the way here elicits constant admiration. On this terrace, M. Boissier planted a complete collection of Sempervivums and Saxifragas, amongst which are noticeable many Eastern and Spanish species.

Another terrace is situated at the foot of a high sustaining wall, which supports it, and also supports the second terrace along its whole length. This wall is constantly damp, as it has earth on one side of it; it is about 15 feet high by nearly 40 feet in length, and faces the north-west. Here are the greatest treasures of all, the choicest gems of the collection. I have seen the most choice and rare plants growing side by side and thriving. Alyssum pyrenaicum, a very rare plant, which only grows on inaccessible rocks on the Spanish Pyrenees, is plentiful along this wall, and even comes up on the gravel path. Mathiola Valesiaca, Campanula muralis, Wanneri, and Portenschlagiana grow so freely that they have to be hoed up. Saxifraga diapensioides, media, squarrosa, marginata, and the extremely rare S. cuneata, grow together, and mingle their tufts, as if emulating each other.

This was the first time I ever saw Saxifraga florulenta appearing perfectly acclimatised. It is here quite abundant, and wanders about freely in the chinks in the wall, which is made of bricks and calcareous stones. Now Saxifraga florulenta grows at an elevation of 8000 to 12,000 feet, on a purely granitic soil, in a wild state; but, is it really completely acclimatised with M. Bossier? This one cannot pretend to assert absolutely. For the flowers, which appeared in 1876, were produced on an old stock, which may have preserved its vitality from the time it was dug up. The little rosettes of Saxifraga florulenta keep their vitality for a long time, as specimens are frequently found, which have fallen among the snow fields at the foot of the rocks, and which keep alive for several years, although not planted in the ground. The sap in a plant, which I attempted to dry for my herbarium, continued to circulate for so long that I could not succeed in drying it. Plants of Ramondia, Haberlea, or other kindred species, are equally luxuriant in this wall.

At the foot of the wall so carpeted with rarities, there extends a terrace, also rich in choice and interesting plants. There are here about a dozen mounds which contain specimens from nearly every range of Alps, from the Carpathians, Pyrenees, Caucasus, and other mountains. The Levant and Spain are well represented, and the genus Saxifraga seems to predominate. There are also a number of tanks containing sphagnum and peat for bog-plants, and for species from limestone soils; then there are also many borders devoted to Heath plants, and also a collection of pot-plants.

By the side of this terrace may be found yet another — the fourth — and the most interesting of all, containing a number of calcareous rocks, several of which are built up of roughly-hewn pieces of tufa, packed one on the top of another like a pyramid, but forming quite a parallelogram. M. Boissier's intention was by this means to contrive a suitable artificial home for rock plants. Experience has proved that a vertical position—that is to say, an absolutely perpendicular wall—is the best for such plants. Now, quite a large number of species have been subjected to this new treatment, and have done splendidly. I may mention Saxifraga longifolia, cuneata, media, marginata, Valdensis, cæsia, squarrosa, calyciflora, diapensioides, retusa, aretioides, Kotschyi, Friedrich-Augusti, luteo-viridis, and Vandelli; Campanula Allionii and Raineri; innumerable alpine and Pyrenean Primulas; a certain number of Androsaces, amongst which were A. helvetica (A. carnea, which is especially plentiful on granitic soils, does but badly at Valleyres), Haberlea rhodopensis here attains astonishing dimensions, and there were also several species of Daphne, one Helichrysum dwarfed, and all stunted, the name of which I forget, and a host of others which seemed each more charming than the last. Other mounds of Jurassic rocks lean against the walls which surround this last terrace, and in a little niche between them I perceived Saxifraga cernua.

When I speak of the last terrace, I am not correct, for there is still a fifth, exposed to the full north and very damp, which is devoted to Ferns. It is there, in the chinks filled with peat or with that soil which best suits some special species, that a collection is found of nearly all the Swiss varieties of Ferns, as well as others from cold countries.

It is impossible to enumerate the vast numbers of plants collected in the last forty years in this garden at Valleyres. I know few alpine plants which do not grow there, and all are in a state of health and vigour which excites the envy of all who are fond of plants, and who themselves, perhaps, cultivate them less successfully. One of the most interesting results of the growth of all these species in Valleyres has been the introduction into the place at the same time of a certain number of exotic species. Thus, some of the walls in the neighbourhood of Valleyres are carpeted with Corydalis lutea and Saxifraga orientalis, while those of the old Château d'Orbe also bear quite a crop of Antirrhinum azarina, which, beyond doubt, has come originally from Valleyres, either by the hand of man or by some chance cause—the birds, for instance. The best time to visit these splendid collections is during the months of May and June.

One thing upon which I must remark, is the means adopted by M. Boissier to hinder excessive evaporation from the soil, and to retain a moist atmosphere round a plant. All the more tender species are surrounded by small stones, usually calcareous, and which, broken up into little pieces, cover the soil all round the plant. It is a most ingenious idea, and should be copied. A splendid white-flowered Soldanella minima was growing, covered with bloom in a rock, which yet seemed excessively dry; this is a proof that these white stones scattered over the ground preserve the coolness and moisture of the soil, not only round the roots, but also round the aërial portion of the plant, the flowers and the leaves. *Excelsior.*

MAGNOLIA WIESENERI. — Under this name M. Carrière describes, in the *Revue Horticole* for September 1, 1890, a Japanese species with caducous leaves, and white, very fragrant, flowers. Doubtless we shall soon have an opportunity of judging its merits, and ascertaining its botanical position, which at present seems uncertain.

New or Noteworthy Plants.

MASDEVALLIA GUTTULATA, *Rolfe, n. sp.**

This is an interesting little Masdevallia, which I have known for a considerable time, but which does not appear to have been previously described. Two or three times it has been sent by Mr. F. W. Moore, of the Glasnevin Botanic Garden, from which source also a living plant in the Kew collection was derived. I am not quite sure of its native country, nor yet by whom it was imported. It belongs to the tovarensis group, as is evident from the shape of the flower, the triquetrous peduncle, and the succession of two or three flowers from the same peduncle. The flowers are about half the size of those of M. tovarensis, yellowish-white in colour, spotted and slightly suffused with light purple. The name is given in allusion to the numerous small spots. *R. A. Rolfe.*

SCENTED AND OTHER NEW ZEALAND FERNS.

The notes and comments which appeared a few months ago in these columns on scented Ferns have been productive of similar comments in the New Zealand and Australian papers. An interesting letter on this subject, from the pen of Mr. John Dutton, florist, of Springfield Road, Christchurch, appears in the *Weekly Press* (Christchurch), May 16. From this letter we gather that the natives of New Zealand employ the fronds of Polypodium pustulatum to scent their oil, &c. The dry fronds of this Fern, placed in rooms or in books, give off a most agreeable perfume, which lasts for years, and greatly resembles the odour of the Heliotrope. This scented Fern, it appears, was held sacred by the natives, who for a long time kept the secret to themselves. It grows in the forests on the West Coast of New Zealand, and also in the North Island, but in neither place is it common. One or two varieties are met with occasionally, in one of which the fronds are forked, and in another they are lobed. The perfume appears to be strongest on the sori-bearing fronds. This species, which was introduced into England in 1820, but has, it seems, quite dropped out of commerce, for we have not found it mentioned in any trade list. It would be interesting to know more about it, and whether, if it is still cultivated in this country, its fragrance is as marked as when growing in its native habitat.

Mr. Dutton's observations on New Zealand Ferns, and Fern collecting, are well worth quoting at length:—

"There are about 112 distinct varieties of New Zealand Ferns worth growing by any Fern-fancier. There are thirty varieties of Filmy Ferns. These last require special treatment in growing them, but the former sorts are not difficult to manage. But what are we to say about the decline of public interest in Ferns? Fashion rules or misrules the taste in Ferns, &c., to a greater extent than one would suppose possible; but the true lovers of Ferns are quite independent of the rule of fashion, and will pursue their pleasure alone, if need be; but this applies more to those who are enlisted already in Fern studies. It may be noticed that we do not observe in young colonials any great desire to study Nature, or to enquire for themselves amidst her works which branch they would like to understand. Here, again, fashion might assist to form a beginning in many who have not as yet perceived the pleasure in a ramble over hill and dale, and amidst the bush, with an express object in view—such, for example, as collecting the fronds of Ferns for the Fern album. A book 18 by 12 inches, with a strap to buckle around it, to place any Fern frond in when out collecting, is the best plan to preserve the fronds, as they are then kept from shriveling. An album of pressed Ferns, so obtained by various rambles, may require many years before the whole of the New Zealand Ferns are collected; but if only a part are collected, the album will be a record of patient labour, and the result of an endeavour to succeed. The album will, with care, last a lifetime, and will always be useful for reference. Then the interest that follows the collecting of them often leads to cultivating them.

"A few years ago everybody was anxious to grow Ferns; but the conditions proper for growing them were not provided in many instances, or the plants were often forgotten until they sickened and died. Many a poor window Fern has a very hard time of it, either by being placed in a dark part of the room until drawn up weakly, or it is placed in full sun in the window, or left outdoors in the sun after being watered, instead of being placed in a shady place whilst being watered. Ferns, after being indoors, cannot stand the cold windy weather outdoors. It has been noticed that Ferns whose growth is dwarf and bushy have the preference as window plants, but why should they exclude others whose elegance of form alone should make them as popular as the bushy kinds? It may be presumed that a few tall stem Ferns, with upright or arched fronds, would add to the beauty of the dwarf bushy sorts. Quite recently was noticed in a window a beautiful Nephrodium molle, with several wire-like stems about 3 feet high; then they arched outwards, and were plumed with bright green fronds, thus forming a lovely ornament for a warm-room window, which may be shaded by a thin blind only whilst the sun is hot. Ferns like a subdued sunlight, but they soon pine away if kept in a dark place."

CHERRIES AND PLUMS FOR PROFIT.*

The Cherry is, and has been always, one of our most important industrial fruits, coming into use almost as soon as the Strawberry, and remaining for some weeks after. A May Duke Cherry tree loaded with its crimson fruit is a sight beloved of boys and birds. The Norman orchardists declare that the orioles who arrive first pass the word to their followers that the Cherries are reddening in Normandy, and when the signal is given they descend in shoals on the trees. It is certain also that in many parts of England it is almost hopeless to keep a crop of fruit from these busy thieves. I know from my own experience that it is quite hopeless, and I am compelled to grow all my fruit under glass.

The tree is hardy, and will bear abundant crops of fruit very far north. In St. John's *Wild Sports of the Highlands*, he speaks of the wood pigeons feeding on his plentiful crops of Cherries in Morayshire, near the Bay of Findhorn. It flourishes and fruits freely in all dry sandy soils, but does not thrive in deep rich alluvial districts. On the high and dry Epping plain, where I believe water has been sought for and not found at a depth of 800 feet, the Bigarreau and Heart Cherries thrive exceedingly; and I have also seen abundant crops of May Duke Cherries in the dry and sandy soils of Woburn Sands near Bedford. When establishing a Cherry orchard, this condition of the tree should be always considered, and the knowledge will be of considerable use in winning a profit from a soil which the farmer or grazier would pass by as unsuitable for his purpose.

For practical purposes the Cherry may be divided into four classes—the Guignes or Heart Cherries, the Bigarreau, the May Duke, and the Morello. The Guignes or Heart Cherries are the earliest to ripen. The earliest large Cherry of this class is the Guigne d'Annonay, which is large, sweet, and very good, purplish-black in colour, ripening in an unheated orchard-house about the first week in June, and in a warm hot season the last week in May. The next in order, and in my opinion the finest of the class, is the Early Rivers. This was raised some years since from the Early Purple Guigne, a very delicious and fine Cherry, but rather too tender for out-of-doors culture in this country. Under glass the Early Rivers ripens the first week in June, and will hang in good condition until the second week in July. For some time I hesitated to recommend it for cultivation as a standard tree in orchards, but I now find it is as hardy as the May Duke, and it produces abundant crops of fine large black fruit a fortnight before the May Duke. I can safely recommend it as one of the most profitable Cherries existing. It has lately been planted on a large scale in Kent, with the most successful results, and I am therefore supported in this opinion by the experience of others. The Belle d'Orleans is a very early Heart Cherry, bright red and white in colour, ripening also in the beginning of June, but flowering too early to escape damage from frost. The Governor Wood is a bright yellow and red Guigne, ripening about the middle of June, very hardy and vigorous, a most abundant bearer, and a profitable market Cherry; it is a popular sort in America, from whence it was introduced in England some years since. The next in order to ripen is the Early Red Guigne, a very dark red Cherry, of large size and delicate flavour, worthy a place in a collection, but not adapted for general cultivation. The Elton is a well-known early sort, ripening before the Bigarreau. The next in order are the well-known Turkey Black Heart, the Bedford Prolific, a hardy variety of the Black Tartarian, which is too tender in this country unless grown under glass or on a wall, the fruit of which will hang on the tree under glass until August, when the late Purple Guigne, a very fine, large, and rich Cherry, ripens, hanging through August and late into September; the Guigne de Winkler, a bright red, very juicy and sweet sort, ripens in September, and lasts well on the tree until October, closing the series of Guignes, which differ from the Bigarreau in the quality of the flesh, which is very tender, sprightly, and delicious.

The Bigarreau Cherries are perhaps better known than the Guignes, the fruit is more solid in texture, and hence better adapted for carriage. The Bigarreau Jaboulay or Early Lyons is the earliest large fruit of this series. This is a very large and fine Cherry, earlier than the May Duke by some days, requiring a wall or an orchard house. The Bigarreau de Schreken is an early black sort of recent introduction, very hardy and good. The Early Black Bigarreau, the Early Red Bigarreau, the Bigarreau Noir de Guben, precede the White Bigarreau, and are abundantly fruitful. The White Bigarreau is the Cherry grown for the markets in Kent, the orchards being said to realise fabulous profits. The variations of this sort are the Bigarreau Monstrueuse de Mezel (when well grown the fruit of this sort is enormous), the Bigarreau Napoleon or Late Mottled Bigarreau, with numerous other synonyms, very large and late. The Emperor Francis, a recent introduction, is very late, hanging long into September under glass; this is a very large bright red sort, exceedingly handsome on the tree. The Late Black Bigarreau ripening after their light red and yellow cousins, may be described as very large, firm and rich flesh of a lustrous black. Placed in their order of ripening they consist of the Bohemian Black Bigarreau, the Bigarreau Noir de Schmidt (an enormous fruit), the Large Black Bigarreau, and the Late Black Bigarreau. The Tardive de Lich and the Belle Agathe are late sorts, lasting well into October. I have named many varieties which I do not think are generally known, but I have cultivated them all under glass, and I have thus been able to take special notice of their different habits. Those who cultivate them in an orchard house will, I am sure, find the study of the variations a source of peculiar interest, and also of great benefit to the fruit-growing

* *Masdevallia guttulata*, n. sp.—Densely tufted. Leaves oblong-lanceolate, acute, petiolate, coriaceous, 3 to 4 inches long. Scape a little exceeding the leaves, sharply triquetrous, with two to three flowers borne in succession. Bracts lanceolate acute. Ovary slightly six-angled, shortly pedicelled. Perianth submembranaceous, yellowish-white, with numerous small light purple spots; the nerves, apex of lateral sepals, and tail of dorsal one, pale yellowish-green. Perianth-tube a quarter of an inch long by a little narrower; dorsal sepal with small triangular base, tail 8 to 9 lines long, a little fleshy; lateral sepals united into a broad rounded body for some distance, the free portions narrowly triangular, 4 to 5 lines long, very acute, but without distinct tails. Petals linear, fleshy, apex unequally bidentate, palest greenish-white, the two contiguous halves with numerous minute maroon spots below. Lip linear, fleshy, apex a little recurved and subacute, with a pair of obtuse keels above, palest greenish-white, with very numerous and very minute maroon spots. *R. A. Rolfe.*

* A paper read by T. Francis Rivers, Esq., at the meeting of the British Fruit Growers' Association, held on Tuesday, August 5, 1890, at Abbey Park, Leicester.

ing community, as it is only by cultivation under glass that new and possibly valuable sorts can be tested.

The Bigarreau and Guigne Cherries are of the highest value as dessert Cherries, and as the fruit is said to be entirely devoid of acidity, they are a very welcome diet to the invalid, to whom the tender and delicate flesh of the Guigne is better suited than the firm and sometimes rather hard Bigarreau. The May Duke Cherry is perhaps the most popular of the tribe; at all events, we are most familiar with it. No boy ever seems to be surfeited, and can consume an indefinite quantity. There are not many varieties, but some are distinct from our old English sort—not in quality, but in the season of ripening. The Empress Eugénie is an early variation, having a maturity of some ten days earlier. The Royal Duke, the Duchesse de Palluau, the Gloire de France, the Archduke, and the Late Duke all follow in succession. If protected by netting from birds, these Cherries will hang some weeks on the trees, giving a continual supply of fruit, either for the dessert or the kitchen.

There are some palates which are very well satisfied with the acid Cherries of the fourth class, which comprises the Kentish, the Flemish, and the Morello. Of these I think the Kentish and the Morello are the best. The value of the Morello is well established, as it is the Cherry for preserving either in bottles or spirits. Cherry brandy has long been a popular cordial in England. On a north wall protected with netting the Morello will last very late into the autumn, and when thoroughly ripe the fruit is very refreshing and grateful. The cultivation of the Cherry in Orchards is not difficult. As I have said before, it is essential to success that a dry calcareous gravel be selected, but instead of planting standard trees at 24 feet apart, of which the prospect of profit to the planter is somewhat remote, I should plant dwarf trees in rows 15 feet apart row from row, and 12 feet apart tree from tree for all Guignes and Bigarreaux, and rows 12 feet apart row from row, with 9 feet plant from plant, for the May Duke and Morello. These trees are easier to manage, the fruit can be gathered without ladders, and the space between the rows can be utilised for vegetable crops or for a certain number of years by Strawberries, Gooseberries, or Currants. The trees should be pruned as little as possible, as the Guignes and Bigarreaux are very impatient of pruning. My own experience is that this should be done in the autumn, superfluous shoots removed, and the summer growth thinned about the beginning of October. If severely pruned both these classes are inclined to gum, and then comes disease. The May Duke and Morello classes may be pruned in the summer and autumn without detriment, but as they are always inclined to produce fruit in quantity, the trees after a certain age will not require much pruning; it will be necessary, however, when the trees are grown in rows to keep the growth as far as possible in the line of the rows.

The Montmorency Cherries are very dwarf-growing kinds, which merit a place in English fruit gardens; they are dwarf, easily grown, and abundantly fruitful; they are grown in large quantities near Paris, and sold in the markets very early in the summer, being used for the delicious Cherry *compôtes* so popular in France.

The stocks for grafting Cherries are of two kinds, the Mazzard, or wild Cherry—the seedlings from this are necessary for the Bigarreau and Guigne Cherries—and the Cerasus Mahaleb, or Cerise de St. Lucie, which is a good stock for the May Duke and the Morello. The advantage gained from the employment of the Mahaleb stock is, that it may be planted on a poor chalk soil. It will grow freely in the most unpromising situation, provided that the soil is dry. It is, of course, only an alternative, as the May Duke and Morello grow perfectly well on the wild Cherry stock. With the exception of the Governor Wood and the Early Rivers, the Guigne and the Bigarreau will not grow on the Mahaleb stock, and it is useless to try it. I believe that I am right in saying that Cherry culture is not unprofitable in England, and I am certain that many districts may be utilised for the production of this very useful fruit.

Those who wish to grow and taste Cherries in perfection must grow them under glass; the fruit attains very great perfection, and is protected from rain and birds. An unheated span-roof house, about 18 feet wide, will give a very large supply of fruit, the trees being placed down the centre of the house, so that the sun shines on both sides of the tree. When grown in pots they can be removed at will, a convenience not obtained when the trees are planted in the soil.

PLUMS.

About the end of July, when Cherries cease to be plentiful in the markets, their place is taken by another fruit of greater economic value, and in which the cultivation in this country will some day be much more extended than it is at present. The Plum, like the Cherry, may be divided into classes, of which the principal divisions are the round fruited and oval fruited, freestone and clingstone. The earliest Plum to arrive in the market in large quantities is the Early Rivers or Early Prolific. This is a well-known and popular Plum, raised about forty years ago. Although I understand that it does not succeed everywhere, I think that in suitable localities it is one of the most profitable Plums in existence My own orchards, on a calcareous clay, have always given me abundant crops. The Czar, a very hardy and fine Plum, closely follows the Early Rivers. These two Plums are valuable sorts, as they are abundantly fertile, and can be sent to market at a very early date, for although the foreign Plums arrive in England by the end of July, the quality is not to be compared to our own productions. The Early Orleans is also a popular market Plum, ripening with and after the Czar. The tree produces large crops, but the fruit is so liable to crack that a crop is often seriously damaged by a shower of rain.

During the month of August market Plums are plentiful; those of which I have actual experience are the Oullins Golden Gage, which I do not recommend anyone to plant. I have, I think, some 500 trees of this sort, from ten to fifteen years old, and they have never yet paid the rent of the ground, the skin of the fruit being too thin for packing, and consequently, it is difficult to send to market in good condition. Denniston's Superb is a most abundant bearer, and as it ripens some days before the Green Gage, it commands a good price. The Belgian Purple is a large Plum of good quality, and in some places I understand it is a profitable fruit. Prince Engelbert, a large, oval, purple Plum, produces enormous crops. Sultan, a large, round, purplish-red Plum, bears abundantly, and always commands a good price; it is said to be one of the richest preserving Plums known. At this time we have Gisborne's, of which the Syston or Beef Plum appears to be a synonym, and the Pershore. These are followed by the Victoria, Prince of Wales, which has a bad habit of sometimes ceasing to grow; Belle de Louvain, a very large oval Plum, closely resembling the Red Magnum Bonum, but ripening some weeks earlier; Pond's seedling, always commanding a high price; Diamond, a popular Plum in some districts; Monarch, a large and late purple Plum, which I venture to predict will some day be very largely planted; after this, the Autumn Compôte and the Late Black Orleans, lasting until the second week of October.

There are some sorts which I have not named as market Plums, as I have not found them profitable in my district. These are Kirke's, which is very uncertain in its produce; Cox's Emperor, the fruit of which is produced in large clusters, and often rots on the tree, the skin being tender, like its parent, the Early Orleans; Mitchelson's, a great bearer, but a very inferior Plum.

The Damsons come into bearing generally about the middle of September. The most prolific Damson that I know is the Crittenden, Cluster, or Farleigh. The King of the Damsons, a sort of recent introduction, promises to be a valuable addition, as it is very large and very prolific. The Prune or Shropshire Damson is well known and esteemed in the north.

The list of late economic Plums closes with the Bullace and the Wyedale Plums, the fruit of which will hang on the tree until late in November—a valuable quality, as it reduces the consumption of preserved fruit.



FIG. 44.—MASDEVALLIA LOWII. (SEE P. 269.)

At the head of garden dessert Plums as distinguished from market sorts, the Green Gage and its varieties undoubtedly stand. One variety of this family was introduced from France many years since, under the name of Reine Claude Diaphane, or Transparent Green Gage. When thoroughly ripe this can challenge the Green Gage for excellence; it also has the property of communicating a distinction to the seedlings derived from it. There are three which deserve a place in any garden. These are the Early Transparent Gage, the Golden Transparent Gage, and the Late Transparent Gage. Other Gage Plums of great excellence are the Bryanston, the Oullins Golden (although not an Orchard Plum, it is an excellent garden Plum), the Purple, the Reine Claude du Comte Atthems (a Hungarian Red Gage of excellent quality), the Guthrie's Late Gage, and the Reine Claude de Bavay. Of Plums which are not Gages, but of fine flavour and quality, we have the Stint, the Early Favourite, the De Montfort, the Yellow Impératrice, the Jefferson, Angelina Burdett, Golden Esperen, Decaisne, Grand Duke, and Coe's Golden Drop.

The small Mirabelle Plums are very pretty and productive, and should be planted in gardens, as they make a delicious preserve. I hardly think, however, they would pay for market.

The Plum does not make a lofty tree, and does not, therefore, require very much space. My own system, which I have found to answer very well, is that of planting dwarf trees in rows 9 feet apart, and 9 feet tree from tree, the stems of the trees being a clear 4 feet to the branches. I find that trees of this size are more easily managed than standards, especially in the gathering season. Damsons, particularly the Crittenden, may be planted much nearer than Plums; in fact, 6 feet is not too great a distance, so that the trees form fruitful hedges. I should recommend the distance, however, of 9 feet between the rows. Like the Cherry, the Plum is impatient of pruning, and this should be done in the autumn about the beginning of October. A calcareous clay appears to me to be absolutely necessary to the well doing of the trees.

There is, of course, an element of uncertainty in the production of fruit out-of-doors in this country, but this may be made a certainty by the employment of glass. The Plum adapts itself very readily to pot cultivation under glass, and as the fruit may be removed to the outside for ripening during the summer months, a glasshouse may be made available for a large supply. Fruit from pots grown in suitable soil is always of excellent quality, and, when ripened under glass, is singularly rich and good. The fruit will hang for some time when fully ripe. The facility with which Plums may be dried has hitherto been overlooked in England, but this industry is now in the process of development, and, with the assistance of improved methods, we shall not hear in the future of Plums rotting on the ground from the abundance of the crop, a waste which is sinful, as the plenty of one year is usually followed by the scarcity of succeeding years. It is in the hands of those who are interested in the land to prevent this waste, and one great factor of success will be, that of holding meetings to invite discussion, which will have the effect of bringing about a wider and more extended knowledge of the fruit-growing districts of our country.

ZINNIAS.— We have been allowed to inspect some very beautiful blooms of Zinnias, grown at Nice, for seed saving purposes, by Messrs. Stuart & Co., Tavistock Street, Covent Garden. The flowers belong to the tall and dwarf varieties, and have in that sunny land attained to such perfection of form, colouring, and size, that the best of our home-grown Zinnia blooms appear but miserable things beside them. The dwarf Zinnia is an excellent bedding plant even here, if planted in warm soils in sunny position and protected from the north and east breezes. It has a great range of colour, including white, orange, yellow, crimson lilac, and rose, and the height of the whole plant is not more than 10 inches. The tall growers have a still greater variety of colour, and flowers of double the size of the first-named.

ORCHID NOTES AND GLEANINGS.

MASDEVALLIA LOWII.

THIS species of Masdevallia, one of the prettiest and most easily distinguishable of its section, appeared as a single plant amongst some Orchids imported by Messrs. Hugh Low & Co., from Cauca, South America. It belongs to what is commonly called the "chimæra" section of Masdevallias, but in the texture of its flowers, and botanical features, it is so distinct as to do away with the necessity for puzzling over it in the manner one has to do with M. erythrochate, M. Gaskelliana, and others which merge into each other. The two most prominent features of M. Lowii are the almost equal elongated triangular sepals, and the small, peculiar, nearly flat, dark purple labellum. The sepals form the showy part of the flowers, and are almost white, profusely spotted, and marbled with reddish-purple. When the plant is suspended in a basket, the flowers on their curved stalks have a very elegant look. The illustration (fig. 44) was prepared from the plant when exhibited by Sydney Courtauld, Esq., Bocking Place, Braintree, at the Royal Horticultural Society, on August 12, when it received a First-class Certificate. There is a small plant, taken from this, in the Glasnevin collection, reckoned by Mr. F. W. Moore among his most treasured possessions. It should be said that in some gardens the handsome dark scarlet M. Harryana Lowii appears as M. Lowii, by the dropping of the specific name. Those who have that plant should name it correctly, in order to avoid confusion in future.

ONCIDIUM LARKINIANUM.

(Gower, in *Garden*, vol. xxxvii., p. 325.) A near relation of O. Forbesi Gardnerianum and Marshallianum. The flower segments are yellow, heavily blotched and barred with brownish crimson, and with a wide yellow two-lobed lip. It is a native of Brazil. *Orchid Album*, t. 405.

ODONTOGLOSSUM YOUNGII.

(Gower, in *Garden*, vol. xxxvii., p. 84.) Segments ovate acute, greenish, heavily barred with chocolate markings; lip shorter than the segments; its anterior lobe rounded, serrulate, white, flushed with violet. *Orchid Album*, t. 406.

DENDROBIUM ALBUM.

A beautiful species, which maintains its foliage until after the flowers have fallen. Flowers, soft creamy-white. *Orchid Album*, t. 407.

LYCASTE GIGANTEA.

A native of Central America, with large star-like flowers, of which the lanceolate segments are green, and the lip rich velvety maroon, edged with orange. *Orchid Album*, t. 408.

ARACHNANTHE CATHCARTII AND A. CLARKEI.

The first-named plant, more familiarly known in cultivation under its old generic name of Vanda, is an Orchid that is recognised as having a delicate constitution; so delicate, in fact, that even if plants survive the inevitable ill-treatment consequent on their collection and voyage home, only unceasing care and attention on the part of the grower will enable them to regain their lost vigour and health. There can be no doubt that Orchids, as a whole, are more retentive of life than most plants introduced from the tropics, and willingly lend themselves to treatment that is frequently contrary to what they are accustomed to in their various habitats. A. Cathcartii is, however, distinctly an exception, and, taking into consideration the circumstances under which it exists, this want of robustness need be no source of wonder. Thickly-wooded gorges, in close proximity to streams, where light is of the most sombre description, quite beyond the warming and hardening influence of the sun, and where a continual high state of humidity during the whole year is maintained, are one and all necessary to its existence. I know of no epiphytal Orchid in the East Himalayas that so assiduously seeks the gloomy shade of the forest as does this plant, and as if to emphasise its desire for these conditions, the plants, as they hang pendent from well-moored trunks of trees, lean not towards the sun, as nearly all other vegetable forms do, but rather towards the stream, whence come cool moist currents of air. The flowers, more shy, still remain hidden below the overhanging strap-shaped leaves, for deep shade is as necessary to the proper development of the cobweb-like colouring of its perigone as to the welfare of the plant itself. I have seen flowers that expanded in the sunlight, but the colour was rusty and poor instead of being a rich warm brown. From May till October the forests are maintained in a constant state of saturation by a drenching and almost continuous rainfall, while during the other half of the year a high degree of humidity is kept up by the splashing of the stream a few feet off, and the dense canopy of foliage overhead that checks evaporation. The racemes are produced late in the autumn, but the buds remain closed until the first warmth of spring in April.

A. Clarkei very much resembles in habit and foliage the above referred to species, but differs in selecting conditions for its existence that are at once contrary to those preferred by A. Cathcartii. A thinly-wooded crest, or ridge, at an altitude of about 6000 feet, where sun and wind has free play amidst its surroundings, drenched with cool rain and driving mists during the wet season, exposed to a fair amount of sunshine during the remainder of the year, and when visited by a sprinkling of snow at the commencement of the New Year, represent the circumstances that are suitable to this plant. At this altitude, which is about 1500 feet above the zone occupied by such plants as Dendrobiums nobile and densiflorum, I doubt if the temperature in the forest during the hottest month of the year ever exceeds 75° in the shade, while in the two coldest winter months the thermometer ranges from about 30° to 45° Fahr. As a consequence of being exposed to the hardening influence of the weather, A. Clarkei assumes a more stunted appearance, and never at any time approaches the straggling length of A. Cathcartii, produces roots more abundantly, and is decidedly more floriferous. Flowers open in October, and last about six weeks.

Repeated failure appears to be the result obtained by Orchid-growers when dealing with A. Cathcartii, caused, I cannot help thinking, by disregard to its wants, and endeavouring to grow it under circumstances altogether contrary to its requirements. This, as well as A. Clarkei, is distinctly pendulous in habit, and never under any condition does it assume an erect position in the Himalayan forests, yet I have seen this in well-known collections of Orchids grown upright with its head close to the glass; a position suitable enough to such as Vanda teres or Renanthera coccinea, but fatal to the well-being of this shade-loving plant. This mode of treatment is, on the face of facts, wrong; and to it may be, to some extent, attributed the miserable appearance presented while under cultivation. *R. P.*

INDIA.

THE Cossipore Institution of Horticulture, Floriculture, and Agriculture was founded in 1886 by Babu Hem Chunder Mitter. Its object is to develop the cultivation of fruits, flowers, vegetables, &c., and to carry on experiments in growing and preparing medicinal drugs, fibrous and other plants. Native students are encouraged to make themselves acquainted with all details connected with agri-horticultural work, so as to fit them for employment on zamindars' estates, and the teaching given is throughout of the most practical kind. The second annual flower show of the Institution, a report of which is before us, was held on February 9. It was

a success in every way, and showed what great progress had been made in the year. The experiments with fibrous plants are, it is understood, likely to have important economic results when they are completed. Experiments have been made with the cultivation of various fibre plants, such as Cotton, Hibiscus Abelmoschus, H. ficulneus, Malachra capitata, Anona reticulata, and Abroma augusta.

HERB PARIS AND ITS FOE.

COMMON as the pretty Herb Paris (Paris quadrifolia, L.) is in many parts of England, it seems never to have been recorded hitherto as the host-plant of a cluster-cup fungus in this country. This fact seems somewhat remarkable, when we remember that the plant is often gathered in considerable quantity, and possesses such clear smooth foliage that any parasitic or abnormal growth would be almost sure to attract attention. We are, therefore, driven to the conclusion, that the cluster-cup of Herb Paris is very rare. It has, however, been discovered during the present season (May 25), by Mr. Thomson, a member of the Carlisle Microscopical Society, in a little wood near Cummersdale, about 2 miles west of this city. The parasite, as shown in the illustration (fig. 45), is seated on the under-surface of the leaf (hypophyllous), the peridia being white, usually in a distinct circle with the centre unoccupied (fig. B). The leaf is more or less discoloured or blanched for a considerable distance around the cups. In the riper or maturer specimens, this bleaching—due to the breaking down of the chlorophyll by the mycelium—extends to twice the diameter of the circle of cups.

A cluster-cup is found on Herb Paris in some continental districts, and hitherto it has been regarded as identical with that found on the Lily of the Valley, and named Æcidium convallariæ (Schum.). This is noted by Dr. Plowright (*British Uredineæ*, p. 264) as British, but little is known of its life-history. It has been found on Lake Windermere, as well as near Scarborough (*Gardeners' Chronicle*, June 14 and July 5, 1884). As the Herb Paris is botanically a Lily, and closely related to the Lily of the Valley, it is possible that the parasite may be the same. If so, it is to be hoped that its life-history may soon be traced out.

In order, if possible, to throw some light on this question, I went on July 25 of this year to examine the plants where the fungus had been discovered. I found plenty of Herb Paris standing and fruiting beautifully, but there was not the slightest trace of æcidia; nor was there the least signs of disease upon any of the plants. It next occurred to me that the other stages in the history of the parasite might be passed on another host, whereupon I examined all the different species of flowering plants found in the locality. On the rough Brome-grass (Bromus asper, L.) I almost immediately found, just at the spot where the cluster-cups had occurred, a considerable quantity of rust and mildew.

On examination, these were found to differ from the common corn mildew (figured by Mr. W. G. Smith, in his valuable work on the *Diseases of Garden and Field Crops*) in a remarkable way. In both the uredo stage and the perfect or teleuto stage the spores are seen to be intermingled with paraphyses, or a protruding mycelium (F. G. fig. 46)—a peculiarity which, so far as I am aware, is only found in a very limited number of Puccinias. I do not mean to assert that this uredo and mildew are the missing links in the life-history of the Herb Paris cluster-cup; that can only be proved by culture experiments. It is, however, remarkable that what appear to be two parasitic fungi new to the British Flora should be found growing in such close proximity, and it is possible that the clue to the matter is to be found in the heterœcism of the parasite. As the mildew (with its associated uredo) appears to be unknown, it might be denominated Puccinia intermixta, n. sp., in reference to the mycelium mixed up with the spores. *Hilderic Friend, F.L.S., Carlisle.*

RAVELSTON.

ABOUT 2 miles westward of Edinburgh lies Ravelston, the charming residence of Miss Murray Gartshore, which has a history as an example of gardening taste dating back nearly 300 years. It is one of the oldest residences in the immediate vicinity of Edinburgh. The north-western suburbs of the city are very close, at some points, to the boundaries of the estate, but as yet their proximity neither mars the scene, nor in any way affects the amenities of the place, and the fine trees and shrubs, which plentifully adorn the park and pleasure-grounds, are as healthy and vigorous as if they were in some rural district. Beautiful views of the Frith of Forth and the coast of Fife beyond, along with the more picturesque features of Edinburgh, are obtained from different parts of the park. The grounds, though apparently low-lying, really lie high, occupying an undulated depression on the northern slope of the ridge at the eastern base of the Blackhall and Corstorphine hills. The finely-wooded sides of the former rise to the height of several hundreds of feet to the west and north-west, immediately beyond the park boundary, in those directions imparting a fine sylvan aspect to this side of the place, and affording admirable shelter.

A look round Ravelston reveals that it is no modern place. A handsome mansion, built about ninety years ago, stands near the centre of the park on a well-elevated site, and commands a fine view of the surrounding country. The gardens lie to the south-west of the mansion. On approaching them, an Ivy-mantled arched gateway, which formerly gave access to the precincts of the old mansion, of which the entrance tower with its doorway, and one wing, which is now occupied as a dwelling-house by Mr. Jardine, the gardener, are relics. Many grand old Sycamores and Elms around this part of the grounds, give to Ravelston in their massive bulk, evidence of having mutely witnessed the changes brought about by the passing of many generations.

The flower-garden comprising an acre or more in extent, and lying contiguous to the southern front of the old mansion, is another relic of a bygone order of things. It is a well-preserved example of the old Dutch style of garden, with the least touch here and there of modern taste, which gives light and colour without depreciating the trim and and somewhat stiff general effect. The space is walled in, but the visitor discovers this fact only after a time, so cunningly are the walls masked by groups of shrubs and clothed with climbers at most points. The greater part of the enclosure is formed into avenues by parallel hedges of Yew and Hornbeam, radiating from a point on the north side, like the segments of a circle, towards the other points of the compass. These hedges are very old, yet in splendid condition and vigorous health. Those of the Yew are from 12 to 14 feet high, and of corresponding width. The Hornbeam hedges are much taller, being from 17 to 18 feet.

Fine specimens of variegated Holly, Portugal Laurel, Liriodendron tulipifera, and Cedar of Lebanon, break up the uniformity of the flower-garden and give it a charming touch of distinctness and beauty. Some of the Liriodendrons are of great beauty and symmetry, one in particular standing



FIG. 45.—FUNGUS ON HERB PARIS.

A, Under-surface of Herb Paris attacked by Cluster-cup (Æcidium convallariæ?); B, One of the disease-spots showing the cups magnified; C, Section through one of the cups, showing spores *in situ*.

about 50 feet high, with a grand spreading top. Others had evidently suffered mutilation by gales, which had, however, failed to dwarf them, though succeeding in marring their symmetry. One of the Cedars, a noble tree, which lost some of its heaviest lower limbs in the disastrous gale which destroyed the Tay Bridge, but which even now covers an area of over 300 square yards, is in splendid health, giving promise of weathering the gales of many generations to come.

The modern features which have been introduced into this fine old garden are in excellent taste. A few informal flower beds and borders, filled chiefly with Stocks, Asters, and hardy perennials, along with bedding-plants of the usual kinds planted in the mixed style, chiefly give colour and fragrance to the scene, without interfering with the sense of formality created by the radiating hedge-bound avenues. In passing we noted a strain of white East Lothian Stock, which deserves special mention; it is the finest white that has come under our notice. The spikes would average 9 inches in length, the flowers were very large, and the colour of exceptional purity; the seeds were procured from Mr. Forbes, of Hawick, from whom Mr. Jardine, the gardener, has had the same Stock for the last two years. The purple East Lothian Stock from the same source could not be compared with the white, though it is also very good.

A compact modern range of glass occupies the wall which forms the north boundary of the flower garden. Capital examples of Grape-growing was to be seen in the several vineries; exceptionally heavy crops are taken, year after year, without any visible impairment of the vigour of the Vines. Careful feeding is the antidote to exhaustion adopted by Mr. Jardine; he has for some years past used nothing but Thomson's Vine Manure for his Vines, and has evidently reason for his confidence in its efficacy. A remarkable form of Foster's Seedling Grape attracted attention in one of the vineries, by the great size of the berries and the weight of the bunches. All of the latter were heavy, some, we should say, exceeding 3 lb. weight, with berries as large as those of Buckland Sweetwater, but with the unmistakable form and transparency of the Foster's Seedling. There was nothing in the condition of the other varieties grown to suggest that their extra size of berries and weight of bunches were due to pecularity of soil or treatment. The presumption, therefore, is that it is a variety of the Grape whose name it bears, or some sort closely resembling it in shape, colour, and flavour, and it would be interesting if any of your readers could throw any suggestive light bearing upon it.

A very fine specimen of Salisburia adiantifolia, trained fan-fashion, to the western wall of the flower garden, covering a space of nine yards, clothed with unusually large leaves from bottom to top, formed one of the many interesting features of this exceedingly pleasing spot.

The kitchen garden, between 2 and 3 acres in extent, has, like the flower garden, a refreshing, antique air about it. Broad turf walks, trim and well kept, intersect and divide it into four squares. The walks are bordered on either side with broad borders filled with herbaceous perennials, annuals, Roses, and other florists' flowers in rich profusion. The collection of perennials is unusually good, being selected more for effect than for scientific interest. Roses, both ancient and modern, are well represented, H.Ps. thrive exceedingly, and there is a very numerous collection also of the older fashioned Roses, such as the various Mosses and Briars, the old Damask, York, and Lancaster, the white Provence, and the Cabbage, &c., which link the floral realities of the present with those of the past charmingly. The garden is well stocked with fruit trees, which, however, are not this season overladen with fruit. Apricots succeed well here. The soil is clearly of a congenial sort to most fruit trees, and indeed to everything else, as was evident in the general thrift and luxuriance and vegetation of whatever sort. The gardens of Ravelston cannot fail to be a perennial source of pleasure and satisfaction to their proprietor, and they are an unqualified credit to their manager, Mr. Jardine, who, though a young man, has had charge of them for the past twelve years. *W. S.*

THE APIARY.

GLASS SECTIONS.

Honey-comb in glass sections must ever prove attractive, and will always fetch a high price—at least, I have found it so. There has always been some difficulty in holding the glass together. The simplest and best method, as well as the cheapest we know anything about, is that of securing the corners by pieces of soft metal—lead or tin, which we may call "corners." Almost any size section can be made,

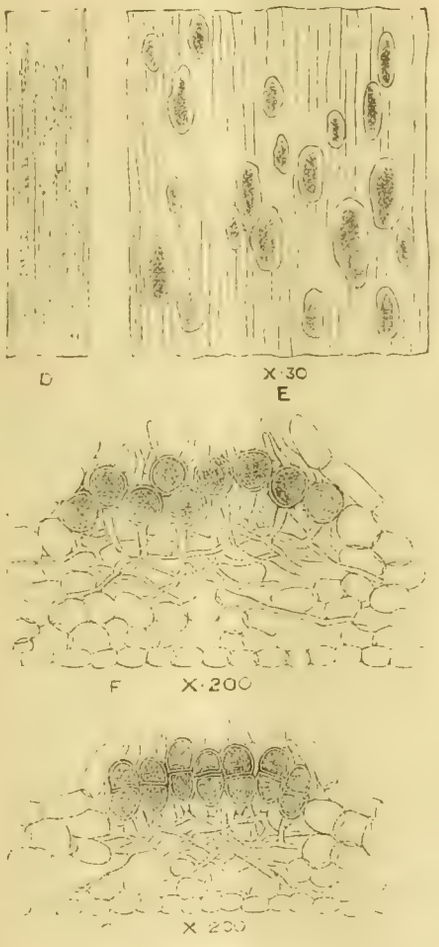


Fig. 46.—Fungus on Brome Grass.

D, Portion of leaf of Brome Grass (Bromus asper, L.) attacked by mildew; E, ditto, magnified; F, Section through Uredo-spot; G, Section showing Puccinia *in situ*. From Nature.

and the method of fixing to the glass is so simple that with a very little practice anyone can soon fit up a hundred or more glass sections, and during the winter evenings this forms a very pleasant occupation, so that anyone can make a good supply before the busy time of spring arrives. Foundations can be fixed by a very simple method, which I find Mr. Cheshire recommends in his *Bees and Bee-Keeping* for fixing comb foundations in bell-glasses, so I give him credit of the idea which I explain below. The advantages claimed for glass sections fitted with these corners are:—First, they can be handled, whether full or empty, the same as wood sections, and this is a great advantage over any other glass section. Secondly, they can be used over and over again, thus reducing them to the price of the wood section now in use. Thirdly, when full of honey they are more attractive, so that a better price can be obtained for all honey stored in them. Fourthly, if windows are placed in both sides of crates the bees can be seen at work without removing the quilts from the top; so that no escape of heat can take place when looking to see if bees have started to work in section, or when sections are filled. They thus make the best observatory crate it is possible to imagine.

Directions for Use.—Cut the glass so that the top and bottom go between the sides. Use 15-oz. glass for 1 lb. sections, and stouter for larger sizes. Take all the sides and bend clips of corners around the glass with the fingers, one corner at each end of glass, and pinch tight with a pair of plyers, care being taken not to break the glass. A little practice will soon give the required pressure. To make firm: after fixing all the corners to the sides, get a piece of wood about 1 foot long, $1\frac{1}{4}$ inch thick, and $1\frac{3}{4}$ inch wide—this is to stand the section on so as to get the fingers under the clips to bend up; stand one of the sides of section with the inside of section from you, take a top or bottom of glass, as the case may be, and lay on the corner close up to the glass which has the corner fixed, and bend the clips over the glass both at once; take the other side, stand at opposite end, and bend clips over as before. Now with both turn upside down on the piece of wood, and insert the remaining piece of glass between the sides, and bend the clips over as before, and with plyers pinch tightly, and the section is complete. To fix starters of foundation, stand the section on a hot-plate or stove, top side down, and when just warm enough to melt the wax, but not hot enough to make it run (a little practice will soon give required heat), the foundation will adhere to the glass, which can be held with the fingers till fixed. This is more quickly done than it takes to describe it. *Agnes.*

VEGETABLES AT GLENHURST, ESHER.

The remarkable success which has for several years—the present seen so far being no exception—attended upon the exhibition of vegetables at Flower Shows by Mr. C. J. Waite, gr. to the Hon. Col. Talbot, Glenhurst, Esher, has naturally provoked enquiry as to the methods of culture adopted at Esher to secure such very good fortune. It is indeed a remarkable circumstance that any one gardener should, through sheer skill, secure upwards of 100 prizes for garden products, and chiefly through vegetables, yearly; although Mr. Waite has, in the neighbourhood of London, more opportunities than falls to the lot of some other not less capable exhibitors. Still it is only through considerable skill that one grower is not only well to the front in several years, but during all seasons of the year; one man may be stronger in the summer and another in the autumn, but the gardener who seems to be relatively strong all the year round, or at least throughout the show season, from May to December, even if sometimes beaten, has a capital record, and one not to be despised. In one respect, Mr. Waite's long experience stands him in good stead. He knows, in selecting his exhibits, what is and what is not good enough to win; whilst that knowledge is half the battle, he adds to its value in admirable capacity to set up collections of vegetables to the best advantage, so that these arrangements always catch the eye, and command attention apart from the quality of the exhibits. Were this excellent vegetable grower dependent upon his old kitchen garden at Glenhurst, his powers as an exhibitor would be exceedingly limited. Some years since, however, a portion of a meadow was broken up, deeply trenched, and manured, and cropped. Later another portion was added, so that now about a couple of acres of capital open land, well drained, and efficiently cultivated, is at the disposal of the gardener for vegetable and hardy fruit culture; even that is not a large kitchen garden ordinarily, but the family requirements are not great, so that ample

space is found in the area. The soil is of a semi-sandy nature, and is naturally retentive, but it is easily worked, and all kinds of vegetables thrive in it remarkably well. Every part is kept scrupulously clean, and free from weeds. All is well, and far from thinly, cropped; indeed, it did seem as if Mr. Waite rather over-cropped. Should anyone have come to the conclusion that the excellent samples which come so liberally from Glenhurst are produced under very special culture, and have extra room, the conclusion is distinctly wrong. The cropping is not less dense than may be found in any average good garden, it is in some cases thicker, but the cultivation is of the best, and manures of various kinds are liberally employed. Of course, animal manure is liberally used too, but much dependence is placed in British guano and other stimulants, all wonderfully useful in promoting rapid and solid growth. Some twenty or more diverse sorts of Peas are grown, a wide selection being needful when it is intended to compete for seedsmans' special prizes for this vegetable. Of dwarf kinds, Sutton's Perfect Gem, Kinver Monarch, Stratagem, and Triumph, the latter one of the best dwarf marrows in cultivation, and largely grown at Esher, are the chief. Of taller kinds, Telephone, Duke of Albany, Duchess, Sir F. Milbank, very tall; One and All Marrow, very like Duke of Albany; Prodigy, House's Perfect Marrow, Reading Giant, Trowbridge Marrow, Autocrat, Matchless, Autumn Giant, and Latest of All, make up a formidable selection. These are growing in long rows at some 8 feet apart, and chiefly in trenches convenient for watering, should aid be needed, of which this year there seems to be little necessity. Runner Beans are in bulk, and some very early. One row turned out of pots has the stakes fully furnished 6 feet in height. Several other rows are coming on in succession, and the crop will be abundant until cut down by frost. The most favoured variety is the handsome Ne plus Ultra; the Champion is also grown. Broad, or rather Long Pod, Beans are found essential to the making up of a collection of nine or twelve dishes of vegetables in the summer. For that purpose, Sutton's Mammoth Long Pod and Carter's Leviathan are grown, the plants being remarkably clean and well podded.

Onions form a prominent feature in exhibition collections, and are seldom absent now. The earliest, because autumn sown, are White Emperor and Leviathan, which seems to be pretty nearly identical with White Elephant. For later work Golden Rocca, Lord Keeper, Ailsa Craig, Rousham Park Hero, Anglo-Spanish, Cocoanut, Excelsior, Maincrop and Reading Exhibition are grown, the distinction between some being, of course, assumed. These are all on broad beds, very thinly placed, having been dibbled out early in the spring, and already give promise of producing wonderful bulbs. When the weather is dry, water is laid on, and a drenching given; occasional top dressings of patent manure are also applied, the bulbs being literally fed into exhibition dimensions. Cauliflowers always form a striking figure in vegetable collections. Of these there are grown Snowball, Early London, Magnum Bonum, King of the Cauliflowers, and the famous Autumn Giant. The selection gives a long season, which can be well sustained by extra sowings, and by the addition of the self-protecting Broccoli, which turns in so admirably in December. In the autumn good Celery is indispensable, and of that there are largely grown Major Clarke's Red, Standard Bearer, Fulham Pride, Crystal White, and White Gem.

Of Lettuces, thousands are grown. Remarkably fine is Webb's Exhibition, a variety found under many diverse names in other seed lists, and is much like the old Nonsuch of Ivory; it is a tall noble-looking Lettuce, not so very firm, and not so suited for rough culture as is the Paris White Cos, such as Sutton's Superb White, which is also largely grown, with some Cabbage varieties.

Of Leeks, the Lyon and Oxonian are most grown, and of Turnips, the pretty white Snowball. Turnips, however, come into collections only late in the season, or as a *dernier ressort* when hard-pushed for kinds. Parsnips come, as a rule, rather before Turnips in show estimation, and of these the Hollow-crown cannot be excelled. Carrots are strong points, and now are almost universally well grown. Early Gem and Nantes are sown in frames on warm borders for summer shows, and the new Scarlet Intermediate, Model, Matchless, &c., come in well for autumn and winter use from the open ground. The present seems not to be a good Carrot season, as owing to cold rains, rust is very prevalent. Dell's Crimson, Pragnell's Exhibition, Sutton's Blood Red, and others, all of the red-leaved type, are regarded and grown as the best exhibition Beets. Long White, Moore's Cream, and Pen-y-byd are the selected Vegetable Marrows; and of Tomatos, now a striking feature in all collections of vegetables, Mr. Waite trusts chiefly to Glenhurst Favourite, a fine product of his own from a cross between other varieties. Brussels Sprouts are of Wroxton and Exhibition types, and of Potatos some twenty of the best sorts are grown admirably in the beautiful sandy soil. *A. D.*

PLANTS AND THEIR CULTURE.

BULBOUS-ROOTED PLANTS.—Tuberoses should now be obtained for early bloom and potted in successional batches, so that bloom may be kept up the whole year. Pot the bulbs singly in 5-inch pots, or three in a 7-inch, according to the size of the bulbs, in a compost consisting of rich yellow loam that has been stacked for some time, leaf-mould, and decayed cow manure, making the soil firm. Place those intended for early flowering in bottom-heat of 68° to 70°, giving no water to them till top-growth has begun, unless the soil should get very dry, when water may be afforded so that the bulbs do not shrivel. As soon as the pots are filled with roots, and leaves have formed, water must be given, and liquid-manure occasionally; bringing the plants near to the light to prevent drawing, and when in bloom remove them to a cooler house. Plants for summer flowering, when they are well rooted, may be grown in a cold frame, or retarded by placing them in the open. The variety called The Pearl is the best, having a dwarfer habit than the others, and neater blooms.

Freesias.—These are beautiful Cape bulbs, not as yet much grown, but which, if a few simple details in their culture are carried out, are easy to manage. The best varieties are F. refracta alba and F. Leichtlini major, though there are numerous seedling varieties of varied shades of colour. The bulbs to bloom early should be potted at the beginning of July, and grown in a cold frame, no forcing being permissible unless the flower-spike is formed, and then only in slight warmth, hard forcing being fatal to them. The stock of bulbs is best potted at three different dates, if a long season of bloom is required; July, August, and September being the best months. Sandy loam, leaf-mould, and decayed cow-dung, will grow Freesias well. Place six bulbs in 5-inch pots, and give the soil one good watering to settle it, and afterwards, as much as will keep the bulbs moving. If potted at a very late date, they often fail to grow well; therefore, if late-blooming plants are required, it is best to retard them after they have made some amount of growth. The old bulbs also come in useful for late bloom if they have not been too much dried off, but kept growing for some time. Freesias will last for years by giving them a shift, removing the young bulbs at the same time. If flowers are wanted early, the first batch may be afforded a little more warmth when well advanced into growth. We find a shelf close to the glass in an intermediate-house a suitable place for these. In an ordinary way, a cold frame, plenty of air, a south aspect, and avoidance of cold draughts, with protection from frost, isall that they require. Weak liquid manure may be applied when the pots are full of roots. I find when the bulbs are potted, a slight covering of cocoa-nut fibre does much good in retaining moisture in the soil, but it must be removed as soon as the leaves get advanced.

Schizostylis coccinea.—This is another bulbous-rooted plant, useful for autumn bloom. It is easily grown, and one of the best for giving good spikes of flowers, of a beautiful scarlet colour, excellent for cutting in October and November. The roots should be potted in July or August in good loam, or loam and peat, if the former is of a clayey nature, placing the pots on a hard, impervious bottom, and watering them sparingly till growth begins, when more will be required, also manure-water frequently. At the beginning of October, a cool greenhouse and near the glass is a good place for them. The plant will grow and flower well if planted out in a border of light soil with plenty of leaf-mould, lifting them in the autumn, and potting then a few crowns in a pot, keeping them in a close frame for a short time before removing them to the greenhouse. The plant increases rapidly, and may be divided at potting time, for when many plants are left together, the spikes are small. They do much better when kept in a growing condition, giving less water after blooming, but not thoroughly drying them off. *G. Wythes, Syon House, Brentford.*

THE ORCHID HOUSES.

THE INTERMEDIATE-HOUSE. — The Barkerias are now sending up their flower-spikes, and need to be kept very moist at the root and overhead, the syringe being employed overhead morning and afternoon, and unless this be done, thrips will get a footing on them. Scale is another pest these plants are liable to, and on the under-side of the leaves they are not easily detected. Sponging of the leaves is the only remedy for the latter; and it should be done with a light hand, the leaves being very brittle. Barkerias are of easy culture, and the delicate spikes of lovely flowers at mid-winter well repay the trouble of the cultivator. These plants are comparatively cheap.

Lycaste Skinneri and its varieties now growing will be benefited by liquid manure being afforded them at least once in a week, and for the purpose diluted cow-manure is the best, and, failing this, weak guano-water is of great assistance. Lycastes should be carefully watched, and sponged with soft-soap water whenever scale is found to be present.

Cœlogyne cristata may be syringed freely overhead, and weak guano-water given at the root twice a week, these plants being gross feeders when growing. Lælia præstans and its varieties should now be growing strongly, and must not suffer for want of water, or of dewing overhead with the syringe in the morning, when the plants do not require dipping. Odontoglossum grande, if throwing up its flower-spikes, should be afforded weak guano-water, which suits them very well. It is one of the most useful of autumn-flowering Orchids.

Cattleya-house.—Very little shading will now be necessary by any of the occupants. Plants of C. gigas, C. Sanderiana, and especially C. Percivaliana should receive full sunshine. Lælia anceps will not require shade unless the plants have been very heavily shaded in the summer, in which case the heavy shade must be removed carefully, that is to say, it should be reduced by one half at first, and kept at that for some days previous to dispensing with it altogether. The autumn set in, in this locality, with frost on three successive mornings, and my remarks about keeping some amount of warmth in the hot water pipes to save the plants from a severe check will have been found of service. No alteration of the warmth of the various houses need yet be made. *A. G. Catt, Parkfield Gardens, Hallow.*

THE FLOWER GARDEN.

FLOWER gardens, in spite of cool wet weather, are still in great beauty in many places, and if we are favoured with a fine month we may look forward to a gay garden for some time longer. As a help to this desirable end, the plants must be cleared constantly of faded flowers and leaves, and walks and the lawn kept in the best possible order.

Propagation of Bedding Plants.—The making of cuttings of all varieties of Pelargoniums should by this time be completed; but should there still any remain to be done, no time must be lost. These cuttings should be so placed that they may be readily protected from rain.

Cuttings of tender bedding plants being struck in frames, will need to be examined daily, and all decaying leaves, or those likely to damp off, taken clean away. Offsets of Echeverias and Sempervivums may be taken off, and inserted, if a hardy

species, at the foot of a south wall on a dry or warm border, where, with slight protection in severe weather, they may be safely wintered.

Keep rockwork and ferneries neat and tidy by the removal of decaying foliage, weeds, &c.

Roses are flowering well this autumn, and to prolong the bloom, cut back gross growths, and remove suckers of Briars or other stock. Newly budded stocks should have the ties loosened as the bud swells, and remove them altogether when the union is effected. Keep the stocks free from shoots. All climbing Roses, together with climbers in general, should be kept neatly fastened to their supports.

The autumn bulb lists are now in the hands of customers, and no time should be lost in ordering such as are needed. No garden is perfect in the spring without Snowdrops, Scillas, Hyacinths, Tulips, Crocuses, &c., either in the mixed borders or in beds, and now that bulbs are produced so cheaply and in perfection, a grand display may be obtained at little cost. *D. C. Powell, Powderham Castle, Devon.*

Fruits Under Glass.

Peach and Nectarine Trees.—The earliest trees will now show, in the red colour of the young shoots and their firm texture, and the oldest leaves falling, signs of resting all of which are signs of health. Assuming that the annual operations of bringing a portion of the roots near to the surface, and relaying them in fresh soil, as advised in a recent Calendar, have been attended to, the house should be kept cool by removing the lights from the roof, if possible; and seeing that the growth has ceased, root action will also be reduced, and the less roots are excited after this date the better. It may seem ridiculous to some growers to speak of the ripeness of the roots, but all the same, it is certain that large roots, which may be formed after this date by means of close temperature, and heavy liquid manure waterings, will assuredly die back in the course of the early winter, whilst the small rootlets and feeders are ready to respond to forcing soon after it is commenced; still, it should be understood that Peach borders should never suffer from extremes of dryness, but they must be maintained in a properly moist state, or the buds will drop in the spring. Young trees with a tendency to grossness of growth will be much benefited by this relaying of the roots, the soil being made very firm about them. Doubtless the best Peaches are grown in loams which naturally contain lime in a certain degree, and sorts which are deficient in this substance may be improved by the addition of old plaster and crushed bones. Borders made of heavy loam need not be more than 2 feet in depth, those consisting of lighter soils being 6 inches deeper. During the season of growth an enormous quantity of water is required, or bud-dropping will present itself, therefore the drainage should be good. Complete the pruning by the removal of all the old snags, exhausted shoots, and weak laterals, but do not stop any of the shoots retained. All first early houses should possess an Alexander Peach and a Lord Napier Nectarine, with Hale's Early and Royal George Peaches for succession.

In *Mid-season Houses* give early attention to the final thinning of shoots, and if heavy crops have been taken off the trees, the liberal use of liquid manure may be continued, and as soon as active growth ceases, follow up the work of lifting, &c. The month of August having proved somewhat wet, cold, and sunless, a little fire-heat, with a considerable amount of ventilation, will be found of benefit in cold localities. Preparations should now be made for transplanting from the outside of reserve trees, new borders being made ready for their reception; but it is yet too early to remove the trees.

Late Houses, where little fire-heat is applied, and in which fruit is not ripe, must be kept comparatively dry, too much moisture in the air during the ripening process rendering the fruits insipid. Dampness, on the contrary, causes some of the best varieties of Nectarines to crack, especially if combined with a varying temperature outside; the Stanwick is one that suffers in this way, whilst Pine-apple, Pitmaston Orange, Humboldt, and Elruge are well known standard kinds for late houses; and in Peaches—Raymacker's, Prince of Wales, Barrington, and Walurton Late Admirable are not to be surpassed for te use. It may be expected that late Peaches will require this season a little fire-heat and liberal ventilation to ripen their wood.

Strawberries.—Early runners will now be fast filling the fruiting-pots with roots, and will require large supplies of water, to which a small quantity of liquid-manure or soot-water may be added, but in no case should liquid manure be poured over the crowns, and if it be afforded in a too strong state, splitting of the crowns is apt to follow, hence the need of discretion. An occasional sprinkling on the surface of the pots of Thomson's manure is highly beneficial. The plants should stand on a hard floor of coal-ashes, on trellises of wood, or on flat tiles, and they should be removed and placed at wider intervals apart every ten days, nothing being worse for them than crowding. Offsets springing from a single crown should be removed with the handle of a budding knife. The crowns of Vicomtesse Héricart de Thury always split with me, and produce only small fruit, so that I have been obliged to discard it, and La Grosse Sucrée has taken its place. *W. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

Orchards.—Where it is intended to form new orchards, or plant young trees in established ones, now is a good time to prepare the stations for them. From the present time and onwards to the early part of next month, is really the best time of the whole year for these preparations, the nature of the soil and locality being taken into consideration by the plants. If it be intended to plant on the sites of old trees, care should be taken to have all old roots got out of the land, the latter being trenched and broken up, but always leaving the bottom spit where it is, merely breaking it up with the pick. Taking into consideration the great number of years that fruit trees occupy the soil, the great importance of planting at the right time, employing the right varieties of fruits, and in the most suitable positions, will naturally receive attention from planters. The soil itself may be much improved by new soil of a suitable kind being added, putting light sandy loams to those that are too adhesive, and *vice versâ*. The amount of ground trenched and otherwise dealt with should be large enough for full root development in years to come; and the important matter of drainage must not be overlooked. For planting ground which is under cultivation, I advocate the use of pyramids or bushes of Apples, Pears, and Plums, in preference to standards, but on meadow land the standard is the best form of tree to plant.

Gathering and storing Apples.—This simple operation is at first sight not a subject about which a great amount of judgment and practice is required, or about which anything new can be said. Where fruit is required to keep for a long period of time, it must be handled carefully from first to last, and stored thinly on the fruit room shelves.

Owing to the Apple crop being a light one in most places, it is necessary that particular attention be paid this year to gathering and storing. In deciding the proper time to gather Apples, the best plan is to try some of the soundest fruit, and if they part readily from the stalk when gently turned on one side, they are fit to be gathered. Early varieties may be gathered as required for use. Always gather keeping-fruit on a dry day, and size and sort everything put into store, otherwise fruit will be put away which will not keep, but soon become rotten and affect the good. *A. Evans, Lythe Hill, Haslemere.*

The Kitchen Garden.

The Mushroom House.—If materials for the making up of one bed have been occasionally turned to allow of the rank heat escaping, the bed may now be made up, the materials being formed into a mass 15 inches thick, rammed very firmly together. In a day or two, a test-stick, or a bottom-heat thermometer should be thrust into the bed to ascertain the degree of warmth reached, and should a falling temperature of 85° be obtained, the spawn may be inserted forthwith. The pieces of spawn-brick may be about the size of a hen's egg, and placed all over the bed just under the surface, at 10 inches apart. After spawning, beat the bed lightly with the back of a spade, and case it over with 2 inches of moderately heavy loam, beating the soil and making the surface smooth. If the temperature is kept at 60° the mushrooms should appear in seven or eight weeks. The house should be kept moderately moist, and no dry places left in corners, or near the heating apparatus, this always tending to the increase of all sorts of insects.

Do not make use of artificial heat so long as the temperature ranges from 55° of a night, to 60° and 65° by day. Continue to prepare materials for other beds; and if beds are to be made outside, large quantities should be got in readiness for the first week of October. I would here state that there is no need to shake out all the straw from the stable dung, as good Mushrooms may be grown without this waste if the proper degree of warmth is maintained in the bed and house.

The weather has not been favourable for the killing of weeds, and so long as the wet weather lasts, hand-pulling of the largest weeds, to prevent their seeding, is all that may be done. If dry weather sets in, every means should be taken to clear the ground with the hoe and rake. *H. Markham, Mereworth Castle, Maidstone.*

Variorum.

The Board of Agriculture and Open Spaces.—The Board of Agriculture have drawn up a draft scheme, having received a memorial to that intent, under the provisions of the Metropolitan Commons Acts, 1866 and 1869, for the future management of Banstead Downs, together with the adjoining Banstead and Burgh Heaths, and the Park Downs. The scheme sets up a body of six conservators, to be elected by the Banstead Vestry, who are to maintain the common lands free from encroachment; to preserve the turf, shrubs, and trees; to drain, plant, level, &c.; to set apart a space for games, and to make cricket-grounds. The conservators will also be empowered to make by-laws, with penalties as against offenders, for protecting the lands from wanton injury or disfigurement, excluding all idle and disorderly persons, regulating the sports and games, and ensuring generally the enjoyment and good behaviour of all concerned. Banstead Downs still retain, in some degree, their rural aspect. Yet the days are now numbered of their renown as a choice pasturage by reason of the abundance of Thyme and other sweet herbs for flocks of sheep, extolled in John Dyer's poem of "The Fleece," whereof the present fame belies Akenside's panegyric. The Board of Agriculture have, moreover, framed similar schemes in respect to Mitcham Common, with Beddington Corner, and to Hackney Marsh, and an influential committee is formed to promote the latter undertaking. The committee includes the three Members for the Parliamentary divisions, the Bishop of Bedford, with several others who take a benevolent interest in the welfare of the district. In the case of Hackney, the London County Council are nominated to act as conservators by the Board. *Builder.*

Projected Improvement.—A circular, signed by Mr. John Leighton, F.S.A., draws attention very opportunely to a scheme which has been before mooted, and the idea of which we have before supported, of forming a main central avenue and drive from Park Square through Regent's Park, and over the centre of Primrose Hill. Mr. Leighton reminds us that the open space on Primrose Hill was originally acquired at the instigation "of that arch economist, Joseph Hume, M.P.," when the whole locality was threatened with building speculation, and when it was part of the open country round London. It is a valuable open space, with which, however, nothing much has hitherto been done beyond preserving it as an open space. The idea of forming a drive and avenue connecting this and Regent's Park is a fine one, and would, as Mr. Leighton observes, give an uninterrupted line of four miles from Whitehall to Hampstead; but to make it altogether a veritable "Champs Elysées" worthy of London, the scheme ought, to our thinking, to be combined with a complete laying-out of Primrose Hill as an ornamental park; an object for which the nature of the site affords great advantages. *Builder.*

EDITORIAL NOTICES.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

NEWSPAPERS. — *Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, SEPT. 9.—Royal Horticultural Society: Committees and Lecture, James' Street, Westminster.

SHOWS.

WEDNESDAY SEPT. 10.—Royal Caledonian Society, Edinburgh (two days). National Chrysanthemum Society, at the Royal Aquarium, Westminster (two days). York Florists. Brighton and Sussex Horticultural (two days).

FRIDAY, SEPT. 12.—Manchester Royal Botanical (two days). Dundee.

SATURDAY, SEPT. 13.—Galashiels.

SALES.

MONDAY, SEPT. 8.—Dutch Bulbs, at Protheroe & Morris' Rooms. Dutch Bulbs, on each day in the week at 12.30 P.M., at Stevens' Rooms, King Street, Covent Garden, W.C.

TUESDAY, SEPT. 9.—Greenhouse Plants, Farm Implements and Effects, at Leigham Court, Streatham Hill, by Protheroe & Morris.

WEDNESDAY, SEPT. 10.—Dutch Bulbs, at Protheroe & Morris' Rooms. Sixty fine Plants of Azalea indica, from Ghent, at Stevens' Rooms.

THURSDAY, SEPT. 11.—Dutch Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, SEPT. 12.—Established Orchids, at Protheroe & Morris' Rooms.

SATURDAY, SEPT. 13.—Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—58°.6.

Process for Securing Fertilisation in Cereals.

SOME years since a French experimenter subjected several sorts of cereals to a system of artificial fecundation, and by so doing increased their yield considerably. The Emperor Napoleon rewarded this ingenious individual by confering upon him the decoration of the Legion of Honour: and a commission appointed to test the result of his system, reported that the increase of yield amounted to not less than 50 per cent.

Considering the success which attended these manipulations, it seems desirable to explain them. The experimenter observed that those florets in the ears of Wheat, or other corn, which are turned towards the east or south were fertilised some days sooner than those which faced the colder aspects of the north or west. According to his observation, one-half of the ear was in full bloom when the other half was less mature. He also noticed that the pistils were sometimes ripe for fertilisation before the stamens were prepared to shed their pollen, the female sex in cereals being more precocious than the other. He regarded this as a great law of Nature, applicable to plants as well as animals. He observed, too, that the least obstruction, such as an insect upon the pistil, sufficed to prevent fecundation, by destroying the little drop of honey which, coming to the top of the stigma, should receive the fecundating "dust," and transmit the pollen-tube to the ovary. If the "dust" of the stamens — which is generally called pollen—falls upon the pistil after the removal of the indispensable "honey," it produces nothing, according to our authority, and the floret proves barren. The pollen, on the contrary, is so strongly organised, that it may, under certain conditions, retain its fecundating virtue during several years. The experimenter, having in view the importance of the drop of honey on the pistil, spreads a small quantity of honey on a fringe of wool so as to replace it when by chance it has been removed. He then fastens his fringe to a cord, whose thickness should be adapted to the size of the field which he proposes to operate upon. Two workmen walking parallel with each other, hold the cord stretched between them, so that the fringe just touches the ears. A third workman operates upon the centre of the cord, which he moves alternately from left to right, and *vice versâ*, so as to make the ears bend gently towards each other. The dust of the stamens is thus scattered and spread indiscriminately upon all the ears, and thus the field is artificially fecundated. The operation should be performed when the weather is fine, and it should be twice repeated, the fringe being first borne from east to west, as the florets on the east side are the forwardest, and then, after two or three days, from west to east. Finally, the fringe should again be used two or three days later, and then the operation of artificial fecundation will have been completed.

The results of this remarkable process are duly given, and they certainly seem to prove conclusively that the yield of cereals may be considerably increased by the means just described. In fields, similar as to soil and cultivation, fecundated Wheat and Rye yielded from 40 to 50 per cent. more than the same cereals when unfecundated. These startling results of a process which, from Ceres downwards, had been strangely overlooked, were officially proved by a commission consisting of the Minister of Agriculture, a farmer-proprietor, and a member of the Academy of Sciences, by whom the various crops, including Oats, were weighed and measured.

In his concluding remarks, the experimenter points out that gentle breezes are required to make the pollen fall upon the pistils, that these are wanting sometimes, and that when at length the wind blows propitiously, the female organs are no longer in a state to be acted on, the precious drop of honey having disappeared. On the contrary, in resorting to artificial fecundation, you choose the propitious moment, and all goes well. He further remarks, that in case fecundation is left to itself, the fertilisation of all the grains in the ear is spread over a period of at least a week, and at maturity some of the grains are ripe, others are not. The latter, therefore, shrivel when the corn is cut, or if the cutting of the corn is deferred till all the grains are ripe, the most mature will be shed by the time harvest takes place. Shedding or shrivelling are evils which, in the unaided process of cereal fertilisation, cannot be avoided; but under artificial fecundation, says the experimenter, all the grains ripen at the same time, and no loss attends the cutting. Another point which he insists upon is, that in ordinary crops the largest grains are at the bottom of the ear, those higher up the stem growing smaller, till, at the summit, they are reduced to nothing. After the artificial process, however, all the grains will be found of equal size from bottom to top of ear, which improves both in measurement and weight. The commission was also convinced that artificial fecundation had the effect of increasing the strength and size of the ear enormously; and this strength, says the experimenter, will be increased from generation to generation; and the seed from fecundated grains will continually yield by new fecundation other grains, more and more beautiful.

On the whole these anticipations seem to be decidedly too sanguine, and it does not seem at all certain that the passing of a fringed cord over a field of blossoming Wheat, for the purpose of distributing the pollen, can have any useful effect, inasmuch as each floret is self-fertilised, and the pistils have received the pollen before the opening of the glumes. But what shall we say to the favourable decision of the commission, which tested the results of dusting the stamens by means of a fringed rope? Their extra crops of from 40 to 50 per cent. must have been miscalculations or delusions. With regard to the dictum that some of the grains in an ear of corn ripen before others, according to their position and aspect, that is a point which has been made the subject of careful observation, and the French experimenter has been convicted of an error. The florets facing the south do not, in point of fact, blossom earlier than those which face the other points of the compass. The whole of the florets in the ear blossom together, or nearly so, and certainly without the least reference to the aspect of the several sides of the ear. As to the increased vigour of the larger grains in an ear of corn compared with the smaller ones, a gentleman convinced himself, within our knowledge, that by sifting out the lesser grains at the time of threshing the crop, the remaining seed would prove to be of superlative quality for sowing. It is astonishing how precisely evidence sometimes coincides with preconceived opinions, and the large grains in this case produced results which seemed to the sower extraordinary. The large seeds, in his estimation, produced a much better crop than the small ones; but as the seed of every field sown in the ordinary way must consist of lesser and larger grains, it seems to us surprising that the most productive of these grains should not have crowded out the others, so far as their respective produce is concerned, so that, after some thousands of generations of Wheat crops, no marked difference can be expected to exist in the productive powers of the several grains. But there is evidence as well as speculation to rely on, since M. H. de Vilmorin has tested the relative production of large and small grains at Verrières, and has found no difference between them. In the case of the Oat, large and small grains are closely associated in the ear, and every large grain is accompanied, so to speak, by one about half its size. This is an extreme difference, but M. de Vilmorin, nevertheless, found that the small grains of the Oat proved as vigorous in habit and as productive as the others.

Disbelieving, as we do, the not uncommon doctrine among farmers as to the special advantage of size in seed corn, we look to cross-breeding and selection as the surest methods for the improvement of cereals, as it is abundantly proved in the case of other plants by the florist and seedsman. It is well known that Messrs. Carter have been engaged some years in an undertaking of this kind, and we are now able to report that Messrs. Garton, of Newton-le-Willows, Lancashire, are also engaged in the cross-breeding of Wheat, Oats, and Barley, and have been so engaged for nine or ten years. The experimenters, in fact, commenced as boys, without thought of gain, just as boys often take up with chemistry or any other science. They have already accomplished results in the improvement of each of the three leading cereals, which should bring them financial satisfaction for the large amount of time and energy they have devoted to a most important undertaking.

THE HOP HORNBEAM.—This tree greatly resembles the ordinary Hornbeam, but the female catkins consist of overlapping bracts, as in the Hop. It is a native of Southern and Central Europe, and forms a low, spreading, umbrageous tree. It is generally grafted on the common Hornbeam, but except for rapidity of propagation, there is no reason why it should not be grown on its own roots from seeds or layers. The tree, of which we give an illustration (fig. 47), is in the Royal Gardens, Kew, to the authorities of

which institution we are indebted for permission to have the photograph taken. A tree of this kind at Kew was noted in Loudon's *Arboretum* as probably the largest tree of its kind in England. It was then (1838) noted as 66 feet in height, with a head 51 feet in diameter. Judging from the shape of the tree as figured in Loudon, t. 67 A, and that now given, the two illustrations seem to refer to different trees.

Grapes.—There is no subject more generally interesting to gardeners than that of Grapes. We counsel them, therefore, if it be possible, to assemble in the gardens of the Royal Horticultural Society at Chiswick, on Wednesday, September 24, when there is every prospect of their both seeing and hearing something to their advantage. Exhibitors should communicate with Mr. Barron, at Chiswick, before September 19.

Exhibition of Fruits, Preserves, &c.—Questions having been asked as to whether fresh fruit may be shown at the forthcoming exhibition of preserved fruits, jams, &c., to be held by the Royal Horticultural Society in the Drill Hall, on October 14, 15, and 16 next, the Secretary desires us to call the attention of intending exhibitors to the following decision of the Council. Any new or rare fruits submitted to the Fruit Committee will be heartily welcomed, but there will not be room for general collections of fresh fruit. The show will be exclusively of preserved fruits, with the exception of novelties in flowers and fruits sent for the judgment of the Committees. The jams and other preserves are to be, as far as possible, in glass vessels or "packages," although other materials are not absolutely prohibited. A silver-gilt cup will be awarded in Class X. for the best examples of packing Grapes, 4 to 6 lb., for private use, to be sent by post or rail.

The Fruiterers' Company.—This City company, as we have already intimated, is to hold a "grand exhibition" of fruit in the Guildhall on October 6 to 8. The object is to promote the extended and improved culture of useful fruit in the homesteads and cottage gardens in the United Kingdom. The schedule, which may be had from Mr. Eagleton, the clerk of the company, 40, Chancery Lane, W.C., provides classes and money prizes for cottagers, tenant farmers, amateurs, and gardeners and nurserymen for fruits of various kinds, as well as certificates for jams and preserves. The object is so praiseworthy, that we hope the company will succeed in getting a good show.

Miss Marianne North.—We regret to have to announce the death of this talented lady. It is to her munificence that the Royal Gardens at Kew are indebted, not only for the remarkable series of coloured drawings of plants executed by her, but also for the building in which they are exhibited. Miss North made several adventurous journeys for the purpose of studying the vegetation of various countries, and of depicting its prominent characteristics, with what success the unrivalled collection at Kew will bear lasting testimony. Miss North was the daughter of the late Frederick North, Esq., M.P. for Hastings, and had latterly taken up her residence at Alderley, Gloucestershire, where she took great interest in her garden, to which she devoted herself, until prevented by the prolonged illness which ended in her death at Alderley on the 30th ult. Miss North was in her sixtieth year. The *Gardeners' Chronicle* is indebted to her for the drawing of the magnificent Nepenthes, now known by her name (see *Gard. Chron.*, Dec. 3, 1881). The first intimation of the existence of this plant was derived from Miss North's drawing now at Kew. An inspection of this drawing stimulated Messrs. Veitch to send a collector to Borneo expressly to secure the plant, in which he was successful. The plant is in cultivation at Messrs. Veitch's, and has produced its pitchers, but at present none have attained the dimensions of the one figured. It is worthy of mention that a descriptive catalogue of Miss North's collection of drawings was drawn up by Mr. Hemsley, and may be had at Kew.



Fig. 47.—Hop hornbeam (Ostrya vulgaris) at Kew. (see p. 274.)

"Botanical Magazine."—The plants figured in the September number are:—

Cattleya Lawrenceana, t. 7133.—A species differing from C. Skinneri chiefly in having only one leaf to the pseudobulb. The plant was found lately at the base of Roraima by Mr. M. Thurn—the locality in

which it was originally discovered by Schomburgk. It grows on the gnarled tree trunks close to the water. It was introduced to Mr. Sander's nursery by Mr. Siedel. "I have seen," says Mr. M. Thurn, "ten or twelve [natives] come into camp afternoon after afternoon, each laden with a basket (a good load for a man) full of these lovely plants, many of them in full flower."

Celmisia Lindsayi, t. 7134. One of the New Zealand Daisies, with linear oblong denticulate leaves, green above, hoary beneath. The flower-heads are more than 2 inches across, white flushed with lilac.

Iris Rosenbachiana, t. 7135. A hardy dwarf bulbous species, native of the mountains of Turkestan. Professor Foster finds it quite hardy, and says that it is more variable in colouring than other species of the genus. See *Gardeners' Chronicle*, 1887, vol i., p. 90; 1889, p. 530; *Garden*, tab. 653, f. 2.

Reinwardtia tetragyna, t. 7136. Allied to Linum trigynum, but with larger flowers.

Caraguata angustifolia, t. 7137. A dwarf Bromeliad, native of New Granada, with crowded linear acuminate leaves, and spikes of yellow flowers protected by orange-scarlet bracts. Kew.

Disease in Leaves of Cherries.—The *Revue Horticole* for September 1 has an article and a figure of a peculiar disease in the Cherry, consisting of brown patches, which shrivel up and fall out, leaving openings in the leaves. The disease in question is due to the presence of a fungus named Coryneum Beijerinkii. The appearances presented are very similar to those produced by the sun shining on the leaves through drops of water, which act as burning-glasses.

"Zoe" is not the Maid of Athens that Byron apostrophised, but the title of a journal published in San Francisco, and devoted to the botany and zoology of California. In a number before us, we see a valuable contribution by Mr. Brandegee on the flora of the Californian islands, and other articles.

Coloured Photographs.—*The Horticultural Art Journal*, published by the Stecher Lithographic Company, Rochester, New York, has issued as a novelty a coloured photograph of a Lilac.

Hollyhocks.—These fine plants still retain their hold on the popular fancy in northern parts of the country, in spite of their being subject to attacks of the Hollyhock fungus like those in the south. Messrs. Stuart & Mein, nurserymen, of Kelso, send some handsome blooms, almost globular in shape, and very full, albeit rather dashed by heavy rains. Mr. J. Douglas said, in a recent note on Hollyhocks in our pages, that Condy's Fluid is being successfully employed by the above firm in combatting the fungus—a fact well worth remembering by growers in the south.

Early Frost.—A correspondent writing from Bath, says that the last two or three days fine weather has brought with it some unwelcome frost. Two degrees of frost occurred on August 30 and 31; and on September 1, 4° of frost disfigured the Dahlias, Vegetable Marrows, Nasturtiums, &c. Accounts of damage done by the frost reach us also from widely separated parts of the country; even so usually mild a district as South Devon has not escaped, the frost on September 1 having punished Beans and Potatos. About Winchester, at Midhurst, Sussex, and in North Norfolk damage to garden crops is also reported.

The York Gala.—A meeting of life members and guarantors of the York Gala Society was held last evening (September 1) at the North-Eastern Hotel, York, under the presidency of Sir Joseph Terry. Sir Joseph Terry said it was a pleasure to learn that this year the Society had been very fortunate. They had given freely of their profits, and they anticipated another year giving as they had done on the present occasion. The total profit on the *fête* had been £258 13*s* 2*d*., and the committee had agreed to make the following donations:—County Hospital, £40; Dispensary, £40; Bootham Asylum, £20; Charity Schools, £20; Boys' Industrial School, £10; Girls' Industrial School, £10; The Penitentiary, £10; and the Yorkshire Society School in London, £10. A few days after their last meeting, the committee received information of the death of Mr. B. C. Williams, of Upper Holloway, and a request that they would contribute to the proposed "Williams Memorial Fund;" and it was with much satisfaction that the committee had resolved to give a donation of £10 to the Memorial Fund. Votes of thanks were accorded to the following officers:—The Sheriff of York (Mr. Councillor T. Clayton), President; Sir Joseph Terry, Chairman; Mr. Joseph Wilkinson, Treasurer; and Mr. C. W. Simmons, Secretary. Similar acknowledgments were paid to the officers of the 10th Royal Hussars, for allowing their band to play at the Gala; to the donors of special prizes; and to Mr. J. Welburn (N.E.R), for providing a satisfactory service of trains.

Cottagers' Show at Earley.—A real *bonâ fide* exhibition of cottage garden produce was that held in the charming park of Bulmershe, near Reading, the residence of Captain Wheble, on August 20. So numerous have exhibitors become in the Earley district, that the committee of the cottager's society felt compelled this year to lop off from the district no less than three parishes. In spite of that fact, the competition seemed to be greater than ever, the tables overflowing on to the grass beneath with produce, which could hardly have been excelled at any similar exhibition. Specially strong are the cottagers in plant production; there is no question as to the social status of the exhibitors, for everyone is personally known, and no one can get into the competition under false pretences. Yet their pot plants are wonderful, and grown in such a way as almost to put professional gardeners to the blush. Such fine bush and pyramidal Fuchsias, plants ranging from 3 to 4 feet in height, of fine form, and densely bloomed. Remarkable Hydrangeas, dense and bushy, and carrying from fifteen to twenty huge trusses. Begonias of great excellence, capital hardy Ferns, bushy sweet-scented Verbenas, pleasant to behold; gaudy zonal and Ivy-leaved Pelargoniums, Balsams, &c., with first-rate window-boxes, in the production of which some of the exhibitors excel. Would that it were possible to gather up some half-dozen or so of these Berkshire cottager shows, and drop them down into some huge building in London, they would make a sensation. Judging by the Potatos seen at Earley, there is no Potato disease in that locality. Vegetables of all kinds were fully good; indeed, it is obvious that the Earley Society has done wonders in stimulating cottage-garden work in the district, and in creating amongst the working-classes a deep love for gardening.

Mushroom Spawn.—An excellent sample of Mushroom spawn has reached us from Mr. W. D. Bason, Wolverhampton, which, so far as an inspection of the brick allowed us to judge, would not disappoint the Mushroom cultivator, the management of the bed being a proper one. The mycelium of the Mushroom permeated the whole substance of the brick, which was itself in a fairly moist condition. Hard, old, dry bricks of spawn, may seem full of spawn, but it is dead, and to use such is only to court failure.

Sharpe's Queen Pea.—This is a fine long-podded variety, with ten or more seeds in a pod, of the appearance of those of Ne Plus Ultra. Mr. Lumsden, gardener at Bloxholm Hall, says that it makes an excellent main crop or late Pea. We cannot speak of its cropping qualities, but perhaps some of our correspondents may be able and willing to do so. Some samples of the pods sent to this office were taken when too old, so that we are unable to speak as to flavour and sweetness.

Poppies.—Mr. Wolley Dod kindly sends us capsules of a form of Papaver bracteatum, in which, at least at the upper part, the constituent carpels, instead of forming externally an unbroken wall or continuous surface, project in the form of lobes with intermediate furrows. The stigma which usually forms a flat cap with many rays spreading horizontally and radiating from the centre, here consists of a conical cap, the centre being raised, and the rays curved downwards and inwards over the edge of the capsule between the lobes. The condition, we learn, is quite constant in the one plant on which it grows, all the others in the same garden having capsules of the ordinary kind. Mr. Dod notes that in cultivation all the differences between Papaver bracteatum and P. orientale disappear, all the forms raised from seed of P. orientale becoming bracteate.

African Fever and the Blue Gum Tree.—Dr. J. Croumbie Brown, with his customary zeal, has compiled some particulars relating to the culture of the Eucalyptus in Italy, and its effects in ameliorating the climate. The results obtained are such as to warrant the culture on a large scale of the Eucalyptus in the malarious parts of tropical Africa. From experiments made and calculations based on them it is shown that the leaves of these plants evaporate double or treble their weight of water, and even a much larger quantity. The Trappist monks who formerly could not sleep without risk of life in their monastery in the Pontine Marshes, but betook themselves every evening to a convent in Rome, can now remain at their monastery of Tre Fontanes, with little risk, and the peasantry who were formerly obliged to migrate to the mountains in summer now reside on the Campagna all the year round. This improvement has followed upon the extensive plantation by the monks of various species of Eucalyptus.

Coming Events.—On September 5 and 6, a great Dahlia Exhibition, promoted by the National Dahlia Society, will be held at the Crystal Palace; and on September 23 and 24, an instructional exhibition and conference will be held in the gardens of the Royal Horticultural Society at Chiswick. The co-operation of amateurs is greatly desired, and for their convenience, special arrangements will be made. The event is looked forward to with great interest by Dahlia lovers. On the 9th inst. there will be a large display of Gladiolus at the Drill Hall, James Street, Westminster, when M. Lemoine, who will himself be present, will show Gladiolus in considerable numbers.

The Cultivation of the Poppy at Mozambique.—The prospects of opium cultivation at Mozambique appear to have met with a check, judging from the following extract from a recent report:—"The cultivation of Poppy for the manufacture of opium, inaugurated by the Mozambique Produce Company, and which promised so well at first, has ended in a complete failure, and the Company has been voluntarily liquidated. The attempt to employ Indian labour cost much money, and produced no good results, whether because the men were not accustomed to Poppy cultivation, or were unable to stand the climate. The opium as taken from the fields appears to have been remarkably damp, and by the arrival of the proper time for shipment had shrunk so much, that the crop, which had cost the Company close on £10,000, had dwindled down to four boxes, each worth about £100. It is evident that opium can be grown, and possibly with more careful and economical management, it might be made to pay."

"Synopsis of the Queensland Flora."—Mr. F. M. Bailey has published a third supplement, containing the descriptions of about one hundred new species, including many discovered in the course of the Bellenden Ker expedition. A few illustrations

are given, apparently "nature-prints," but some of which are rather obscure. Mr. Bailey has earned the thanks of the Botanical community by this and other similar publications.

Baillon's "Histoire des Plantes."—The last issued part contains an account of the Asclepiadaceæ, Convolvulaceæ, Palemoniaceæ, and Boraginaceæ. The morphological notes, and the illustrations continue to be valuable features of this important work.

Chrysanthemum Show at Hamilton, Victoria.—Mr. H. S. James, late gardener at Farleigh Castle, near Bath, sends us an account of what must have been a fine show; but it is lamentable, as we have often pointed out, that our colonial friends should invariably seek to reproduce European fashions, and not do more to develop their local resources. They would do much better service to horticulture by cultivating, and bringing under notice, some of their native plants, which many of us at home would welcome as a pleasing addition to the ever-recurring Dahlias, Chrysanthemums, &c.

Pentstemons.—We recently received from Mr. J. Forbes, nurseryman, Hawick, N.B., a boxful of splendid bloom spikes of Pentstemon. The varieties include many pleasing, and some brilliant, shades of colour; and in this way, and in the size of the flowers and flower spikes, indicate the great advances which hybridisers have made in recent years with this almost everywhere-hardy North American plant. Pentstemons are sometimes lost from excess of moisture in the soil during the winter; and it is always advisable to strike cuttings annually at this season, so as to preserve the collection intact. Side shoots taken off with a heel—slips—strike readily in sandy soil under a hand-glass.

Mr. Robert Warner.—This gentleman, once well known amongst lovers of Orchids, has removed from Broomfield to Widford Lodge, Chelmsford, where he still cultivates some of his old favourites.

Devizes Chrysanthemum Show. — The Annual Chrysanthemum Show at Devizes, which is held in conjunction with a bazaar, in aid of the Benevolent Society of the town, will take place in the Corn Exchange, Devizes, on November 4. The sum of ten guineas is given as a 1st prize for twenty-four cut blooms of incurved Chrysanthemums, not less than eighteen varieties.

A Wall Nut, but Not a Walnut.—Mr. Batchelor, of the gardens, Harefield Park, Uxbridge, obligingly sends us a photograph of a very large Cob-nut growing on the top of a wall 6 feet high. The tree is this year bearing a good crop of Nuts.

Yucca gloriosa.—Mr. R. C. Hughes kindly sends us an excellent photograph of Yucca gloriosa, a plant, the majestic beauty of which requires no advertisement. Further, it has, like others of its kind, the great advantage of thriving in towns. Together with the Yucca comes a photograph of a portion of the banks of the Lake in Birkenhead Park, with the Yucca standing out in front of shrubs on a lawn gently sloping to the water; a beautiful picture, which we may possibly reproduce later on.

Cucumber Express.—We understand that Messrs. Sutton, of Reading, have become the possessors of the entire stock of the seed of this variety, raised by Mr. Mortimer, and which was awarded a First-class Certificate at the Royal Horticultural Society's meeting on August 12, and at Reading, as well as the 1st prize for a brace of Cucumbers.

Calne and District Horticultural Society.—On the occasion of this annual gathering of gardeners, amateurs, and cottagers of Calne and neighbourhood, the grounds of Bowood were opened by permission of the Marquis of Lansdowne, and the weather having been tolerably fine, a good attendance was secured, the gate money reaching the respectable sum of £130. The gardeners to Mrs. Harris, Colonel Piper, V.C., Mr. Herbert Harris, and Major Heneage, seemed to have been the most successful competitors; and the various productions, competitive and otherwise, especially the soft-wooded plants and vegetables, were of very good quality. It is gratifying to notify the fact of there being no falling off in the entries as compared with last year.

Important Case under the Factories Act.—Messrs. Thomas Grant & Sons were summoned before the County Magistrates, at Maidstone, on Wednesday, August 18, for that they, being the occupiers of a certain fruit factory at Lenham, did employ a woman named Sarah Finn after 7 o'clock on the evening of July 18. Defendants were also summoned for failing to keep in the prescribed form, and with the prescribed particulars, registers of the young persons employed therein, and also with failing to specify, in the prescribed form, the period of employment and the times allowed for meals of the young persons and women therein employed. Mr. Redgrave, Government Inspector of Factories, &c., conducted the case for the prosecution, and Mr. A. J. Ellis appeared for the defence. The Bench said they had considered the case, and Mr. Ellis's explanation, and they could not see that there was much mitigation necessary. Mr. Grant had been shown to be perfectly conscious of the requirements of the Act, and in spite of that, he had acted in opposition to them. They could not inflict a nominal fine. Defendants were fined in the first case £1, and 15*s.* 6*d.* costs; in the second, £1, and 15*s.* 6*d.* costs; and in the third, £1, and 8*s.* costs; in default, 14 days without hard labour. Referring to this matter, Messrs. Grant write:—

"We shall be glad to be permitted in a few words to state our position in your journal. In July, 1888, we represented to the Home Secretary that, inasmuch as we simply preserve the fruit for the jam-makers as it comes straight from the orchards, we cannot fix regular hours for the women to work whom we employ to pick over the fruit that comes in irregularly according to weather, sometimes in gluts, and some days none at all, or very little. Whatever comes in during the day must be dealt with, however late the hands may have to be retained. Obviously this is very unlike an ordinary factory as contemplated by the Act, but more resembles a fish-salting factory, which is specially exempt. We therefore asked the Home Secretary to hold us exempt for the same reason. This, he informed us, he had no power to do, but as a matter of fact, we were not afterwards visited by the inspector for two whole years.

"If our case leads, as we hope it will, to an alteration of the Act in favour of fruit preservers in general, who are all more or less in the same difficulty as ourselves, we shall not regret the unmerited punishment we have received.

"The law is equally hard upon the women we employ, who naturally look forward to the fruit harvest, when they are only too glad to make a little overtime.

"We hope everybody in this fruit-growing county will, in act or in sympathy, join in the effort that will be made to rid the agricultural interest of this irritating and unnatural interference with their operations and their liberty. Yours obediently,

"Thomas Grant & Sons,

"Maidstone, August 20, 1890."

PLANT PORTRAITS.

Anthurium Scherzerianum var. bi-spathaceum, *Illustration Horticole*, t. 107. An illustration of a not very uncommon malformation, which it would, as the Editor says, be desirable to perpetuate.

Apple Jeanne Hardy.—Large, very handsome; a seedling from Emperor Alexander, *Revue Horticole*, July 16.

Azalea indica var. Pharailde Mathilde, *Illustration Horticole*, t. 108. A seedling of M. Vervaene, with large double well-shaped white flowers striped with crimson.

Iris Danfordiæ, *Gartenflora*, t. 1327.

Lachenalia pendula aureliana, *Revue Horticole*, September 1.

Masdevallia Shuttleworthii, *Gartenflora*, tab. 1329.

Miltonia Bluntii var Lubbersiana, *Orchidophile*, June, 1890.

Miltonia flavescens var. grandiflora, *Gartenflora*, August 15.

Odontoglossum Harryanum, *Orchidophile*, July, 1890.

Pear Beurré Chaudy, *Bulletin d'Arboriculture*, August.

Staphylea colchica, *Bullet. del. Soc. Toscana di Orticultura*, August.

Xanthoceras sorbifolia, *Revue de l'Horticulture Belge*, August.

NURSERY NOTES.

SLOCOCK'S NURSERY.

About a mile from Woking Station, on a good sandy loam, is situate the nursery of which we have now to speak. We do not find any notice-board, nor "pictorial poster," to call attention to its existence and indicate its whereabouts. Some noble trees, soaring proudly over Golden Queen and Milkmaid Hollies, and other nursery stuff, are quite sufficient indications for us. We know that a treat is in store for us if we keep our eyes and ears open. And so it proved; but it is not so easy to pass on to others the gratification we experienced. One general nursery is very much like another. There are, indeed, local circumstances and particular specialties which give a special interest to some, but, speaking generally, one well-stocked nursery is, "on paper," very like another. One interested in plants and their growth can, however, always find interest and pleasure in inspecting well-grown nursery stock of the ordinary character, although he may have seen the like a hundred times before; and when, as in this case, it is combined with some things rather out of the ordinary groove, the interest is, of course, intensified. We do not, therefore, think it necessary to note the Rose trees, for these were past their best at the time of our visit; nor the fruit trees, trained and untrained; nor the Rhododendrons, for these were not in bloom; nor the Hollies, nor the multiplicity of good nursery stock with which this well-kept establishment abounds. Indoor plants are not much cultivated here; nevertheless, some long span-roofed houses, filled with Clematis, and others with Ampelopsis Veitchii, excite astonishment at the prodigious quantities they contain. Many, our host tells us, are destined for the American market. Of the smaller and more attractive Conifers there is a large stock, as of Retinospora obtusa aurea and the golden form of the American arbor-vitæ, and of the Lawson Cypress, gleaming like burnished gold, and contrasting with the silvery forms of the Lawson, known as Fraseri and Allumi, and vieing with the splendid tints of the Golden Elder, the Golden Catalpa, not forgetting the Golden Elms, of which there are three or four kinds, the best being U. Dampieri aurea. Retinospora obtusa compacta is of more sober hue, but its deep green colour and nice habit render it very desirable. Thuiopsis of similar habit is also noticeable, and rejoices in a similar name. But what we came specially to see is Thuiopsis borealis lutea, which is decidedly more uniformly bright than any golden form of this shrub that we have seen before, while the robust habit and vigour of the shrub give it an advantage over some of the similarly coloured varieties. The contrast between the yellow of the young foliage and the ruddy brown of the bark is very pleasing. Among the Junipers, the form of Virginiana known as Schotti is specially to be recommended. Its pyramidal habit, pleasing silvery colour, and neat foliage render it very desirable. Cupressus Goveniana, too, is a subject which should not be overlooked by the planter. We were pleased to fall in with a good-sized tree of this species in cone, proof sufficient that the climate of this part of Surrey is not unfavourable

to it. We note also, in passing, a form of the common mock Acacia, Robinia pseudacacia semperflorens, which well deserves its name, for it flowers from almost every leaf-axil, and will continue to do so till checked by the frost. Populus Bolleana, the upright form of P. alba, maintains the good opinion that was formed of it when it was first introduced, as also does the purple-leaved Persian Plum, Prunus Pissardi. Rhus glabra laciniata can hardly be too much praised, alike for the elegance and colour of its foliage; to keep it in beauty it is advisable to cut it in each year, so as to ensure a new growth of young shoots. Hydrangea paniculata grandiflora does superbly here at Woking, without any very special attention as far as we can see. It certainly does not do so well everywhere. Perhaps those who succeed with it will kindly give our readers the benefit of their experience. But all this while, those noble trees have been making us lift our eyes from the breaks and the quarters and the drifts beneath to the heavens above. At last we can withstand their magnetism no longer; out comes the measuring tape, but before we begin to measure, let us see what we are about to measure. Well, one is Pinus macrocarpa, a magnificent pyramid with spreading branches, and a trunk of 7 feet 6 inches in girth at 3 feet from the ground. Its buds are the largest of any Conifer that we know, and the cones are like the huge maces or spike-beset clubs which our forefathers were wont to let fall on the heads of their adversaries. It would not be altogether pleasant to take refuge under such a tree in a hurricane. We have previously given a figure of this tree as well as of the cones, but the tree at Woking is the finest of its kind that we have seen. Near at hand is another splendid fellow, even bigger than the macrocarpa, but not unlike it in general habit, though with much shorter leaves and very different cones. This is evidently Pinus ponderosa, possibly that form of it distributed as Benthamiana. The cones present a peculiarity unnoticed, we believe, in all the technical books, though we have seen the fact noticed incidentally by travellers; the peculiarity consists in this, that the whole cone does not fall off, but the greater part breaks away, leaving a few of the basal scales remaining attached to the boughs. There are other particulars relating to the shape of the scale and its stalk of which we may say more on another occasion. This tree measured 7 feet 5 inches at 4 feet from the ground. Of less dimensions, but still very noteworthy are several Sequoias (Wellingtonias), and Redwoods. Thuia gigantea (alias Lobbi), Libocedrus decurrens, with its curious columnar form; Cryptomeria Lobbi, more elegant than the common form, of which, however, it is only a variety. Picea Smithiana, Magnolias conspicua and acuminata, a cut-leaved Beech, a silver Lime, two fine specimens of Kolreuteria, and others which it would be tedious to enumerate, but which we advise the tree-lover to go and see. As for the fruit tree stocks so largely cultivated, there is not much to be said beyond the satisfaction one experiences in ascertaining (which is sometimes a matter of wonderment) where they come from.

HARDY BAMBOOS.

OLD readers of the *Gardeners' Chronicle* will remember the glories of Shrubland in former days. The terrace gardens, the beautiful landscapes, the awe-inspiring Chestnuts, still remain, and so does, we are happy to say, Mr. Blair, the gardener. When we paid him a visit some time ago, we noticed a valley planted with hardy Bamboos (fig. 48, p. 279), at the suggestion of Mr. Robinson. The effect, even then, was so good, and so novel, that we applied recently to Mr. Blair to know how the plants had succeeded, and what were the kinds to be recommended for their hardihood. In reply, Mr. Blair kindly writes:—

"The Bamboos which you saw at Shrubland are still thriving, and have not been disturbed since they were planted two years ago. Up to this time they have grown finely, many of them forming quite a thicket. A few suffer in the foliage about the beginning of March from the cutting winds, and it is near midsummer before they quite regain their fresh green colour. Until March they are as fresh as possible, and require no protection. B. Metake, the common sort, planted two years ago, is a complete mass of foliage, and the shoots of this year are from 8 to 10 feet high. B. aurea is 16 feet high; B. viridi-glaucescens, a good grower, is from 16 to 18 feet high; B. mitis is also a strong grower, attaining a height of 18 to 20 feet; B. Henonis grows finely; B. violascens is a good grower, strong; B. Quilioi also grows well; B. sulphurea has light stems; B. nigra has dark stems; B. Simonii is something in the same way as B. Metake; B. Metake grows anywhere. All require plenty of water while growing. A good number of the plants were sent from Guernsey with names, but they are so much alike it would require an expert to tell the difference. Most of the named sorts came from Bordeaux."

HOME CORRESPONDENCE.

ROSCOEA PURPUREA.—Mr. Elwes, in referring to the figure of this plant published a fortnight ago in the *Gardeners' Chronicle*, p. 190, says he is not quite sure whether the plant figured is the true R. purpurea or one distributed by him in 1881 as R. sikkimensis. The Kew plant is certainly typical R. purpurea, according to Mr. C. B. Clarke. There is neither a living plant nor a dried specimen of Mr. Elwes' R. Sikkimensis at Kew. The figure does not show the large oblong cluster of spathes from which the flowers are pushed, one at a time; nor does it give an idea of the height of the stems, which is about 18 inches. The credit of proving this plant hardy near London belongs to some visitor, probably Mr. Ellacombe, or perhaps Mr. Elwes himself, who, when at Kew, about four years ago, remarked that it had proved hardy or would probably do so in England. On that hint we tried, with the result that the plant is incomparably finer when grown on a sunny border in rich loam than it ever was in a pot under glass. The plants have increased ten fold since they were planted out; they are not protected in winter, save what shelter is afforded by the wall near which they are planted. They have been in flower since about the middle of June, and they are in flower now. Cautleya lutea, a very near ally of Roscoea, has also been in flower all the summer under the same conditions as the Roscoea. *W. W.*

THE NATIONAL CO-OPERATIVE FLOWER SHOW.—In your notice at p. 218, you believe the "rules which govern the show specify that the exhibits shall be grown from Association seeds." The explanation I desire to offer is that the rules in question only apply to that part of the schedule which consists of prizes offered by the Agricultural and Horticultural Association, and the Association as a registered body can only legally apply its funds to purposes having relation to its own business. But in addition to the Association prizes, there are about 300 prizes, as regards which it is expressly stipulated that "there are no restrictions as to the seeds, &c., used." These are the prizes furnished by other co-operative societies, by the Crystal Palace Company, and by friends of the festival—a constantly increasing body. In the second place, under the above impression as to rules, you not unnaturally conclude that "it is doubtful whether a show held under such restricted conditions, represents a *bonâ fide* effort to promote the valuable principle of co-operation in horticulture, especially in the seed trade, or whether it represents a gigantic advertisement of the Association for purely profit-earning purposes." Here it is necessary to explain that whilst the Agricultural and Horticultural Association, like all co-operative societies, is necessarily a trading body, it is not a "purely profit-earning" one in the ordinary sense. This will be best illustrated by the fact that last year on a trade of £73,156, the margin of profit was only £3142, or less than 5 per cent., and no part of this was divided on capital. The appropriations of profits were as follows:—Returned to customers, £1732 7*s.* 8*d.*; profit-sharing bonus to employés, £309 7*s.* 8*d.*; carried to various reserve and other funds, £716 6*s.* 5*d.*; balance applied by vote of the members to special depreciation, £384 7*s.* 11*d.* How little the Association resembles an ordinary trading concern, may be judged by the fact that the £17,331 of share capital is held by nearly 3000 shareholding members, who thus have an average holding of one, five, or six pounds each. For many years past it has been the rule to allot only a single £1 share to each applicant for membership. From all this it will be seen that, whilst the Association is naturally anxious to advertise and extend its work, it is not with a view to "profit-earning" for a limited body of proprietors that it seeks the advantages of publicity. Your third criticism is upon the practice of the Association to mark certain seeds with the prefix "One and All." You think "this can only end in leading purchasers to believe they are obtaining really new or distinct varieties." Here, again, the writer has not had all the facts before him. A reference to the publications of the Association will show that the meaning of the prefix is fully and clearly explained there, so that no purchaser can be misled. Take Peas as a case in point—referred to in your criticism. As regards these, the Association list says:—"To maintain trueness of character, and ensure a fine stock, all varieties require careful and continuous selection, some sorts deteriorating very quickly if neglected. . . . We have marked 'One and All' the varieties we can most confidently recommend." Going a step further, and taking in detail the two cases you specially select for criticism, I find in the Association list the following explanations regarding the first:—"A stock carefully selected, and a certain type maintained;" and regarding the second, "a careful selection from the ordinary intermediate." There is no suggestion of "new and distinct" as you will see. You suggest that the Association should forego the advantage of thus putting its trade-mark on its own selections, and sell them by "the recognised trade appellation." But this would not meet the case, as you will admit when I mention that your reporter has not in all cases been able to recognise in the "One and All" improved varieties the true original stocks. The additions to the names of the judges, printed in the schedule, were merely meant to advise distant competitors who and what were the gentlemen to whose judgment their exhibits would be submitted. We certainly did not mean to imply that these gentlemen officially represented the bodies with which they have connections, nor did we suppose anyone would make such a mistake. It is quite customary to speak of a Member of Parliament expected at a public function as M.P., when he is not in any way officially representing the House of Commons. The titular addition is only to let all persons concerned know who he is. *Edward Owen Greening, Secretary of National Co-operative Flower Show, and Managing Director, Agricultural and Horticultural Association, Limited, 3, Agar Street, Strand, W.C., August* 26, 1890.

—— It is rather too late in the day to find fault with associations, or individual tradesmen, for calling choice selections of the finer strains of vegetables, or flowers or fruits, or garden or farm produce of any sort, after their own names. For good or evil the practice is established, and the good of it immensely preponderates over the evil. We, in fact, owe much of the purity and quality of our strains of the culinary crops, and produce of garden and farm, to the practice of careful selection and re-christening. We are also quite familiar with the practice now so widely adopted by growers, of offering valuable prizes for the produce of their own seeds. It may also be assumed, without offence to any that the calling of the seed after the great houses not only pays the cost of selection and the prizes, but also leaves a handsome profit. And after all, the general public reap the major part of the profit of the transaction, for the credit of the great tradesmen and trading associations are pledged to the purity and excellence of the seeds they call by their own names. True, the public may occasionally get a good old thing under a new name; but oftener far this old strain gets so improved through skilful selection and persistent "roguing," as to deserve its new name. And in any and every case where respectable tradesmen or associations are concerned, the public get a good thing. For example, the dozen dishes of exhibition marrow Peas staged at the Crystal Palace show the other day, were the finest lot I have seen this year. And the four prize lots of this fine strain could not be equalled out of the sixty dishes of any other variety placed beside them. There were also open classes for annuals and other plants—hence it is quite a mistake to affirm that those exhibited were all grown from Association seeds. Neither must it be forgotten that this great annual exhibition is primarily designed to develop the instincts and tastes of co-operators into horticultural channels. Hence, there is both logical fitness and trade property in the Agricultural and

Horticultural Association, which originated those annual exhibitions, and finds £150 out of the £300 or more offered in prizes, directing attention to its own success as a Co-operative Seed Supply Association. The same thing is done by most of our great seedsmen and florists, to a greater or less extent at most of our great shows, and I fail to see what is held to be right in individuals can be wrong in companies, or how the public suffer by such efforts to push trade—through improving the quality of seeds, fruits, flowers, feeding stuffs, or manures. Few lovers of horticulture could have looked on that wonderful exhibition of horticultural produce and its producers without a feeling of honest pride in the present, and of larger hopes for the future. Faults and flaws might be picked out here and there, but contrasting the last show with all that preceded it, and remembering the social and monetary status of most of the exhibitors in Section I, the exhibition was most creditable alike to its promoters and supporters, and equally gratifying to horticulturists, patriots, and philanthropists. *D. T. Fish, One of the Judges.*

WISLEY NOTES.—My gardener at Heatherbank made a bed of Tuberoses on the lawn, and they have better blooms than any he grew under glass; this may not be new, but I think is worth a note. Montbretias are beautiful at Wisley, some of Lemoine's newer introductions, especially a yellow one with bronzy leaves, "Solfaterre"; they look well in a clump, but show their graceful growth much best when planted only, say half a dozen, 4 or 5 inches apart. This season has suited L. superbum, it has been especially fine; we have some large clumps of it, but I think it, too, shows best only a few together, with trees as a background—there are many between 8 and 9 feet, the tallest measures 10 feet 6 inches. *G. F. Wilson.*

TOMATOS IN THE OPEN AIR.—It is pitiable to see in this district (Ealing), many acres of Tomatos that have gone down before the disease. For a time, despite the somewhat changeable weather, the plants which had been raised in pots and put out with great care, looked very promising, and then, when they had swollen their first crop of fruit, and colouring had begun, the disease completely destroyed them. A similar loss of plants occurred last year, a little later in point of time. Tomato culture in the open ground is at the best a hazardous undertaking, which may bring in good returns in a favourable season. Does the culture of Potatos near to Tomatos assist the spread of the disease? and, if a plantation of Tomatos were grown a considerable distance from Potatos, would the chances of loss from disease be lessened? Can any one give information on these two points? *R. D.* [Probably. Ed.]

THE NATIONAL FLOWER OF THE UNITED STATES OF NORTH AMERICA.—Mr. Huftelen, of New York, has sent me a paper in which he recommends Lilium canadense as the national flower of the United States, in preference to the Golden Rod, which has been suggested. I think L. superbum would be better, as it is not only a more striking Lily, but has a better name. *George F. Wilson.*

TWO GOOD HARDY PLANTS.—May I draw attention to two of my best hardy plants, which can be grown with ease in any garden, but are seldom to be seen. One is Aster Thomsoni, a Himalayan species, covered with lavender-coloured flowers all the summer and autumn, and particularly flowery now, as a wet summer suits all Himalayan plants. Mr. Ware formerly sent it out as Calimeris incisa, and as I had doubts about it, I sent it to Mr. Baker, who kindly gave me its right name, adding that he had never seen it in cultivation before. The other plant is Boykinia aconitifolia, which, from a small herbaceous base makes a neat round bush 1 foot high or less, covered with small white flowers all June and July. I am sending a lot of seed of this to Mr. Thompson, of Ipswich, hoping that it may be more generally grown. Both these plants are true perennials. Neither spreads at the root, or looks untidy at any period of growth. *C. Wolley Dod, Edge Hall, Malpas.*

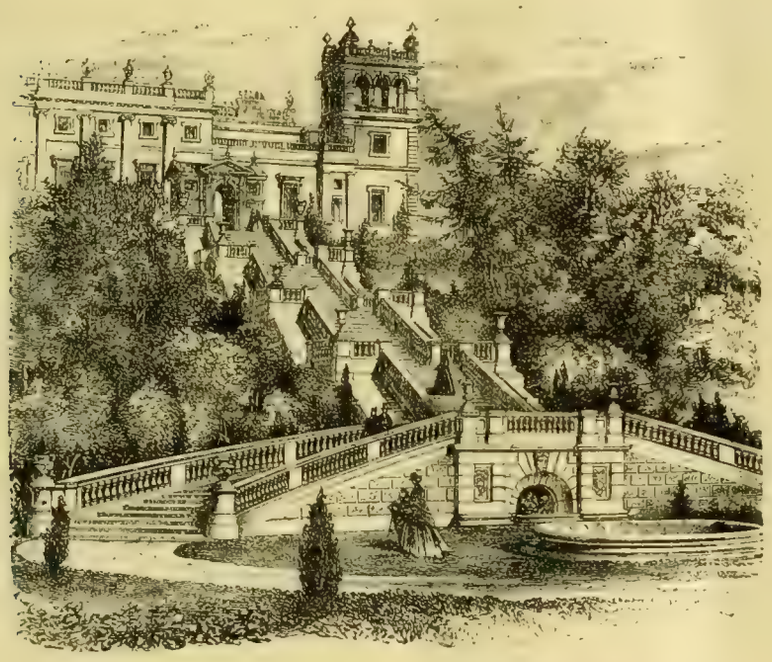


Fig. 48.—SHRUBLAND PARK, IPSWICH. (see p. 278.)

DENDROCALAMUS SIKKIMENSIS.—In the note which accompanied the figure of this plant (see vol. vii., p. 792), made from a specimen in Lord Annesley's garden, it is suggested that the species may prove hardy in the warmer parts of England. Plants of it have been in cultivation at Kew since 1885, and it has been tried in the open air as well as in the large temperate-house and the Palm-house. Outside, it perished with the first frost, in the temperate-house it barely lives, but in the Palm-house it is perfectly happy, the largest plant being 15 feet high, with eighteen stems, the thickest 4 inches in circumference, and the largest leaves over a foot long, by 4½ inches wide. Probably in some of the Colonial gardens it will have made better progress even than this. For its introduction we are indebted to Dr. King, the Director of the Calcutta Botanic Gardens, who sent the seeds to Kew in 1885, with the following note:—"I send you a bag of seeds of a Bamboo which Mr. Pantling found growing near a village in the interior. It is a large species with reddish stems, and very handsome, he says. He found it growing at 6000 feet, so it may possibly be grown in warm spots in the open air with you. I have never seen the species before. It is known to Lipchas as 'Pagreang.'" Both seeds and plants were freely distributed amongst Colonial and English gardens from Kew, under the name of Dendrocalamus sp. Pagreang, or Red-stemmed Bamboo. The plant was recognised as a new species by Mr. J. S. Gamble, who described it under the above name in Hooker's *Icones Plantarum*, t. 1770 (1888), where it is recorded as being then in cultivation at Kew. *W. W.*

THE TULIP TREE.—I quite agree with all you have said on p. 219 respecting the Tulip Tree, regarding its hardiness and ability to stand in exposed places. At this place there is a row of them on the lawn which are much exposed, and the elevation is 400 feet above sea-level. These trees grow splendidly, and the shade they afford is much enjoyed in sunny weather. The age of these trees is about seventy years, and they are as many feet high. The Tulip Tree is a surface-rooter, and yet grass grows beautifully under it, and the greedy roots keep the soil dry and firm at all times. Some thirty years ago, we nearly lost the lot in a severe winter, from the rabbits barking severely; but this danger is now averted by a fence. Some six years ago, a fearful thunderstorm raged in this part, and the lightning struck the shoulder of the finest tree, tore off all the bark on one side, and ran along the root to an iron fence; but the tree lived, and the wound is healing over fast. There is a magnificent Tulip Tree growing on this estate at an altitude of 660 feet; in my office I have a collection of 100 specimens of English-grown kinds of woods, and about the same number of foreign, and the Tulip Tree is unquestionably the most beautiful of the lot. *J. Rust, Eridge Castle.*

LINCOLNSHIRE DYKES.—In the spring, I tried to give in these columns some idea of the prettiness the dykes in the Lincolnshire marshes owed to the Marigolds, in order to point the moral that these bright flowers could be naturalised in many more places than they are. Just now most of the dykes in the marshes are choked by a lush growth of reeds, but wherever a friendly scythe or sickle has given other plants a chance, each dyke is as bright with colour as a cottage garden. Henbanes, Ragworts, Melilots, and Sonchi larger than elsewhere, illumine the banks, while the bed supports Sium, Œnanthes, Epilobiums, Menthas, Sparganiums, Ranunculus sceleratus and aquatilis, with here and there a flowering rush. One dyke will ever remain in my memory. The water for the first 50 yards or so was covered with Alismas and Forget-me-Nots, which gave place further on to a thick growth of wild Michaelmas Daisies (Aster tripolium), while at the bend the bank was covered with Skull-caps. The effect of the three shades of blue was very lovely. *C. A. M. Carmichael.*

THE HARDY WHITE PASSION-FLOWER.—Without detracting in any way from the credit that may belong to Messrs. Evans & Fuller for the introduction of the hardy white Passion-flower, Constance Eliott (p. 249), I can say for certain that it was only a re-introduction. Miss Morris has carried it back to 1879. I can certainly carry it back a dozen or fifteen years further. It must have been about the year 1865 that my father visited a nephew who had just bought a property near Chudleigh, and I well remember his pleasure at finding a large plant of a pure white Passion-flower growing against the house. That plant has long since perished, but he had a plant of Constance Eliott (now growing here) from Messrs. Lucombe, and at once recognised it as the same that he had seen at Chudleigh. I have little doubt there are more in the same neighbourhood—Chudleigh, Newton Abbott, and Lustleigh are all near together. *Henry N. Ellacombe, Bitton, Bristol.*

JUDGING MELONS.—I see in your issue for August 30, p. 250, "R. D." condemns the practice of cutting Potatos, and I agree with him that this should not be allowed, and that a decision should be made from the appearance of the tuber. [Cook them. Ed.] I should like very much to see less mutilation of Melons by the judges. Nothing looks worse when inspecting an exhibition-table of fruit, than to witness the mutilation which has been carried out. Visitors frequently inquire why the fruit is cut, and some so much more than

others; it spoils the appearance of the table. I agree with the dictum that the goodness of a Melon should be decided by its flavour; but why not employ a small instrument like a cheese-taster? If this were done, a small portion could be taken out of the fruit, and the rind placed in position again, the Melon appearing none the worse for the operation. Cases have come to my knowledge this season of exhibitors giving up showing because their various exhibits of fruits, &c., were so much cut about as to make them unfit for the table. *A Looker-on.*

THE GERMINATION OF SEEDS.—I have no new discovery to announce in regard to this matter, but simply to record two or three instances that have come under my notice that seem to illustrate the vagaries of seeds in reference to germination. Last summer I was desirous of getting a few seeds of the true type of Aquilegia cœrulea, and on making application to one whom I knew grew plants of it, he sent me some seeds which he said had failed to germinate with him. I soaked them in water for twenty-four hours, and sowed them in a pot twelve hours after, and stood the pot on a shelf in a cold greenhouse, with a piece of glass over it, where it remained all the winter, and in March of the present year plants began to appear above the surface, and they have continued to do so up to the present time. Some of the plants are 2 inches high, others of the smallest size. I think it may be reasonably inferred from this instance, that the power of germination in seeds remains longer than is commonly supposed when they are well ripened, as those I experimented with appeared to have been. I have heard gardeners complain that they fail to raise seeds of Everlasting Peas. I find no difficulty in doing so when they are two, and even three, years old, if I soak them in water for twelve hours, and sow them in a pot twelve hours afterwards, placing a piece of glass over it. In the spring I sent my brother at Bedfont some seeds of a choice variety of dwarf German Scabious, and they were sown in a bed in a cold house, in which he raises most of his choice seeds. He reported that they failed to germinate. I then sowed a few on a warm border in the open, and I should think nearly every seed grew. About the same time I supplied an allotment holder with some seeds of Knight's Protecting Broccoli, which he sowed in his allotment garden, and he informed me some time after that not a seed germinated. Being much surprised to hear this, I sowed some of the seeds in the open, and in a few days they came up so thickly, as to completely dispose of the assumption that the seeds were past germinating. It would be easy to multiply instances, but I state the foregoing facts, because seedsmen are often blamed for lack of growth in seeds, which is not from want of germinating power, but simply arises from causes over which the seedsman can have no control. *R. D.*

CABBAGES.—I have tried the varieties named by Mr. Cook on p. 196, and find Mein's No. 1 is far superior to any of them as a first early variety, if a good strain of seed is secured. Ellam's is a very nice thing if cut as soon as it is ready, but if left a few days too long it cracks and is spoiled. Mein's No. 1 will stand much longer in good condition; in fact, it grows to a good size if left long enough. Last year our first sowing was made on July 12, and the first heads were ready for cutting by March 27; these were growing in a warm sheltered position, and the winter was possibly exceptionally favourable for early Cabbages. *W. H. Divers, Ketton Hall Gardens, Stamford.*

SOCIETIES.

BERKHAMSTED.

August 25.—The annual exhibition was held this year in the Old Castle Grounds, with the result that a much better show was made than was formerly the case when the Society met in the Town Hall. In the open class for groups, there was a close competition. For stove and greenhouse plant groups, Mr. Higgins, gr. to A. P. Lucas, Esq., was 1st, with Mr. Geo. Hillier, gr. to H. H. Cooper, Esq., a good 2nd. In the groups of greenhouse plants alone, a very keen contest took place, Mr. Lush, gr. to Mrs. L. Lucas, getting 1st, with Mr. E. Mawley a very close 2nd.

The cut hardy flowers were a great feature, and the competitions of such equal merit that the judges had to divide 1st honours between Mr. Higgins and Mr. Foulkes; Mr. Tarbox, gr. to Lady S. Spencer, was 2nd.

Fruit and vegetables were well shown, especially the latter in the cottager's class. Mr. E. Mawley, Berkhamsted, showed a large collection of cut flowers, tastefully arranged, and including a grand lot of Tea Roses. Messrs. Lane sent from Berkhamsted nurseries a large collection of Apples, Nuts, Tomatos, and other fruit for which they are so famous.

READING HORTICULTURAL.

August 27.—A very good exhibition was arranged within the Abbey Ruins on this occasion, cut flowers, fruit, and vegetables being especially numerous, and very good throughout, while there was a much better display of plants than is usually seen. The Forbury Gardens adjoining, and which form a part of the corporation property, are looking very gay. The bedding arrangements were excellent, and the gardens admirably kept by Mr. Phippen of the Oxford Road Nursery.

Plants.—The best nine stove and greenhouse came from Mr. F. J. Mould, Nurseryman, Pewsey, who had two very fine Ericas, Jacksoni and McNabiana rosea; Mr. Aitken, gr., Ritchings Park, Slough, was a good 2nd; Mr. Curry, gr. to Col. Pepper, Salisbury, had the best four specimens.

Groups of plants, arranged for effect, were as usual a good feature; and they show to advantage on the raised sloping turf banks at the sides of the tents.

Achimenes, Fuchsias, Lilums, and Balsams were fairly well shown; and there were some very fine zonal Pelargoniums, grandly grown and bloomed. Tuberous Begonias here, as at other shows, have become a leading feature; the plants staged were finely grown and bloomed.

Foliaged plants were represented by some very fine specimens. Mr. Aitken's 1st prize six included a massive and splendidly coloured Croton Queen Victoria, C. Johannis, Kentia Forsteriana (a grand example), K. australis, Davallia Mooreana, and Anthurium crystallinum. Mr. J. Currey was 2nd, with a very good lot also; and he had, in addition, the best four specimens. Palms, exotic Ferns, and Lycopodiums were also well shown.

Table decorations are always a good feature at Reading, and they are shown in groups of three vases, in one case with garden, the other with wild flowers. Baskets of sweet-scented flowers are charmingly done, and this portion of the exhibition always greatly interests the ladies.

Cut flowers were represented by some delightful Roses. The best eighteen came from Messrs. Perkins & Sons, Coventry, who had, in fine condition, the following apparently good autumnal bloomers:—Madame Eugène Verdier, Marie Verdier, Mrs. J. Laing, Ulrich Brunner, Viscountess Folkestone, Etienne Levet, Comte Raimbaud, Merveille de Lyon, and François Michelon. Messrs. J. Jefferies & Son, Cirencester, were 2nd. The best six blooms of any one variety were Mrs. J. Laing, from Messrs. Jefferies; Messrs. Perkins & Son came 2nd with the same variety.

Some excellent Dahlias were shown. The best eighteen, and also the best twelve, came from Mr. George Humphries, Chippenham; Mr. J. Walker, of Thame, being 2nd in both classes. A superb lot of twelve bunches of single varieties was contributed by Messrs. J. Cheal & Sons, they being the only exhibitors. Gladioli and bunches of hardy flowers were remarkably good features also.

Fruit.—One of the best exhibitions of fruit seen at Reading for years was staged on this occasion. Mr. Goodman, gr. to C. Hammersley, Esq., Bourne End, was 1st, with eight dishes, having a very fine lot, consisting of Alicante and Muscat of Alexandria Grapes, Barrington Peaches, Pine-apple Nectarines, Moor Park Apricots, Washington Plums, Castle Kennedy Figs, and Victory of Bristol Melon; 2nd, Mr. Ashby, gr. to Mrs. W. Fanning, Whitechurch, who had very fine Madresfield Court and White Muscat Grapes, Grosse Mignonne Peaches, Elruge Nectarines, Apricots, &c.

In the class for six dishes, Mr. Paxton, gr. to the Hon. C. S. Irby, Taplow, was 1st, with Madresfield Court Grapes, Violette Hâtive Peaches, Lord Napier Nectarines, Melon, Figs, and Plums; 2nd, Mr. Osman, gr. to L. J. Baker, Esq., Ottershaw Park, Chertsey.

The best three bunches of Black Hamburgh Grapes came from Mr. Ashman, Billingbear Gardens, Wokingham—finely finished bunches; Mr. Osman being a good 2nd.

With any other black, Mr. Osman was placed 1st, with excellent Alicante; Mr. Pound, gr. to A. Sutton, Esq., Reading, 2nd, with the same. Gros Maroc and Madresfield Court were also well shown. Mr. Maher had the best Muscat of Alexandria, Mr. Osman running him close. The best bunches of any other white were Foster's Seedling, from Mr. Pound; Mr. Ashman coming 2nd, with Buckland Sweetwater.

Mr. P. Lockie had the best dish of Peaches, staging very fine Bellegarde; Mr. Lawrence, gr. to Mr. Owen Knox, Caversham, coming 2nd with Barrington.

Mr. George May, of Caversham, had the best dish of Nectarines, showing fine Pine-apple; Mr. Goodman coming 2nd with the same. Moor Park Apricots were good also.

Culinary Apples were very fine indeed, and dessert varieties made a brave show. Mr. R. Webb, Benham, had the best six dishes of the latter, showing Cox's Orange Pippin, Cox's Pomona, Blenheim Orange, King Pippin, and Fearn's Pippin; Mr. Howard was 2nd, having little differing from the above, but with Worcester Pearmain and fine Mr. Gladstone.

Mr. Dockerill had the best six dishes of culinary varieties, staging superb examples of Lady Henniker, Ecklinville, Emperor Alexander, Stirling Castle, Warner's King, and Keswick Codlin; 2nd, Mr. Turton, The Gardens, Maiden Erleigh, with very fine fruit of The Queen, Barker's Seedling, Dutch Codlin, Ecklinville Seedling, Stirling Castle, and Frogmore Prolific.

Mr. Paxton had the best four dishes of dessert Pears in Bon Chrétien, Windsor, Madame Treyve, and Clapp's Favourite. He also had the best four dishes of stewing Pears, the best green-fleshed Melon was Hero of Lockinge, the best scarlet-fleshed was Sutton's Monarch. Mr. Goodman had the best three dishes of dessert Plums, fine fruit of Washington, Kirke's, and Jefferson's. Mr. Howard came 2nd with Green Gage, Pond's, and Jefferson's.

Vegetables were a wonderful feature. The competition for the valuable special prizes offered by Messrs. Sutton & Sons brought fourteen entries. They formed a fine show in themselves, and the judges were a considerable time in making the awards. Several prizes were also offered by Messrs. James Carter & Co., E. Webb & Sons, and Mr. C. Fidler, and a good competition ensued. The best twelve Onions of either of Mr. H. Deverill's new varieties were Ailsa Craig, weighing 34 lb.; Mr. Bowerman coming 2nd with the same.

In the way of miscellaneous, Messrs. Kelway & Son, Langport, had a very fine and extensive collection of Gladioli, Delphiniums, Gaillardias, &c.; Mr. Charles Turner, the Royal Nursery, Slough, a large representative collection of cut Dahlias; Mr. Phippen, a large group of decorative plants, cut flowers, &c. Mr. Frank Lees, The Vineyard, Reading, a very interesting collection of Apples; and Mr. E. T. Such, Maidenhead, a large collection of cut flowers. Certificates of Merit were awarded to Mr. C. Turner for pompon Dahlias Novelty and Rubens; to Messrs. J. Cheal & Sons, for single Dahlia Northern Star and Cactus Dahlia Mrs. Douglas; to Messrs. Kelway & Son, for Gladiolus Jerome Kelway, Maori Chief, Dorothy Tennant, Cardinal Newman, Electra, and Baron Schroder; for Gaillardia Oliver Wendell Holmes, and Pentstemon Le Bordii; and to Mr. S. Mortimer, Farnham, for Cucumber Express.

SHERBORNE HORTICULTURAL.

August 27.—This popular Society held its annual exhibition in the grounds of "The Old Castle," Sherborne, on the above date, and the extensive and well-kept gardens, so ably managed by Mr. W. G. Pragnell for about thirty years, were thrown open to the public by J. K. D. Wingfield Digby, Esq. The show was a good one, and was well patronised during the afternoon.

Plants were well shown, and in fine condition. Mr. J. Wilkins, gr. to Lady Theodora Guest, Inwood House, Henstridge, was a good 1st, with twelve foliage and flowering plants. His Anthurium crystallinum, Alocasia Thibautiana, and Cycas revoluta, being very good plants indeed; Mr. Kidley, gr. to A. Heylar, Esq., Coker Court, Yeovil, was a creditable 2nd. Mr. Wilkins was also a good 1st for a bank of stove and greenhouse plants, staging a fine lot of well-grown Ericas, Allamandas, Dipladenias, &c.; Mr. Runnacles, gr. to C. Thurburn, Esq., Leweston, was 2nd.

Out of five good groups of miscellaneous plants arranged for effect in semi-circular form, and of

12 feet diameter, Mr. Wilkins again led with a very pretty group, and Mr. Pragnell was a good was 2nd.

With twelve varieties of exotic Ferns, Mr. J. Lloyd, gr. to V. Stuckey, Esq, Langport, took the 1st prize for large, healthy plants of Pteris umbrosa, Davallia Mooreana, and Adiantum trapeziforme; Mr. Wilkins was 2nd.

Several good lots of nine plants each of tuberous-rooted Begonias were staged, being dwarf, fresh, and profusely flowered varieties: Mr. G. H. Copp, gr. to W. E. S. Drax, Esq., Holdnest House, Dorchester, was 1st; and Mr. Andrews, gr. to General Place, Thornford, was 2nd.

Mr. Pragnell was 1st for eight well-grown Coleus, of large size, which were finely coloured.

Mr. Gillingham, Yeovil, took 1st for four Fuchsias; Mr. Copp securing a like position for six Balsams; Mr. Andrews was 1st for six well-flowered plants of Pelargoniums; and Mr. Shorto, Melbury Park, led with six plants of Cockscombs, all showing well.

Cut Flowers.—Messrs. Keynes, Williams & Co., Salisbury, were a good 1st, for twenty-four varieties of Dahlias, staging large, fresh, even, and perfect blooms of fine varieties; Mr. Joseph Nation, of Staplegrove, being 2nd, with good blooms. Mr. Bradbury, gr. to Dr. Budd, Bath, was the only exhibitor of twenty-four varieties of Roses, three trusses of each, and he was justly awarded the 1st prize for a good stand of fresh, even blooms. Mr. Wilkins was 1st for twelve bunches of choice kinds of Roses.

Fruit.—This was shown well generally. Mr. Lloyd was 1st for a collection of eight kinds, showing Brown Turkey Fig, Bellegarde Peach, Pine-apple Nectarine, Lockinge Hero Melon, Emperor Plum, Jargonelle Pear, and fairly good bunches of Madresfield Court and Muscat of Alexandria Grapes. Mr. Wilkins was a good 2nd. Four good lots were staged.

Mr. Lloyd was awarded 1st position for small thin, though well-ripened, bunches of Muscat of Alexandria; Mr. W. Connolly, gr. to J. K. C. Talbot, Esq., Lyme Regis, having to put up with 2nd for three large handsome bunches, averaging about 5 lb. each, fine in berry, and nearly as bright as those in the small exhibits, to which the 1st prize was awarded. Mr. Lloyd was also fortunate in obtaining the 1st prize in the "any other white Grape" class, showing small, loose, though well-coloured bunches of Foster's Seedling; Mr. Connolly being again placed 2nd for larger and equally well-ripened bunches.

Mr. Pragnell was 1st for Black Hamburgh Grapes, showing handsome bunches, fine in berry and colour.

Mr. W. Goodall, Fonthill House, Tisbury, was 1st in the "any other black" class, showing handsome bunches of Gros Maroc.

Mr. H. W. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, was 1st for a Melon (Longford Gem), 1st for Peaches grown under glass with Sea Eagle, and 1st for Peaches grown in the open, with Violette Hâtive.

Mr. Pragnell took premier position for six Nectarines grown under glass, showing fine fruits of Pitmaston Orange; Mr. Harris, gr. to Montague Williams, Esq., Woodland House, being 1st for Nectarines grown in the open air, showing good fruits of Lord Napier. Plums, Apples, and Cherries were shown well by Messrs. Kidley, Eaves, Moore, and Copp.

Vegetables.—These were shown in large quantities, and in fine condition by Messrs Copp and Wilkins, who were 1st and 2nd respectively for collections of twelve kinds. Mr. Pragnell took premier honour in the class for spring-sown Onions, showing large, handsome, firm bulbs of the Anglo-Spanish type; Mr. Wilkins being 1st for autumn-sown Onions, showing fine bulbs. Mr. Pragnell was 1st for Peas, showing a fine dish of Veitch's Prodigy; Mr. Copp being 2nd with Duke of Albany. This was a good class, as also was the Runner Bean class. Mr. Every, Batheaston, being 1st with a grand dish of Carter's Champion.

Non-competing exhibits.—Messrs. Stewart & Sons, Ferndown Nurseries, Wimborne, contributed a nice lot of plants and cut flowers, as also did Mr. Davies, of Yeovil, the latter staging some good varieties of the tuberous-rooted Begonia, with the improvement and production of which plants his name has been associated during the last few years.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

A meeting of the Executive Committee of the above Association was held in the Horticultural Club Room, Hotel Windsor, Victoria Street, S.W., on 5 p.m. on Thursday, August 28, Mr. T. F. Rivers in the chair. After the minutes of the previous meeting had been read and confirmed, the Hon. Secretary presented the following report with regard to the business transacted since the July meeting.

The Strawberry Report.—In accordance with the resolution of the committee, the report of the Strawberry exhibition and Conference in St. Stephen's Hall, Westminster, on June 27 last, has been printed in book form and distributed free to all members. It is also on sale to the general public, and can be had, post-free, for 1*s.* from Mr. Lewis Castle, Hotham House, Merton, Surrey. In addition to the complete historical and cultural information embodied in the papers read at the Conference, a chapter has been incorporated on Strawberry Forcing by an experienced cultivator. Many letters have been received expressing much satisfaction with the Association's first publication.

The Leicester Conference.—At the Leicester Conference, on August 5, the programme as arranged was carried out to the letter. James Ellis, Esq., M.P., occupied the chair, and Messrs. Rivers, Ingram, Pearson, and Bunyard read the papers announced. Several members of the Association journeyed a considerable distance to be present, and the Conference was attended by over 200 persons, the Chairman being supported by the Mayor of Leicester, Dr. Lankester. A committee of the Town Council had made the necessary arrangements for the Conference, having placed a large tent at the disposal of the Association. The readers of papers and officials were also entertained at lunch by the Mayor and Committee. Special thanks are due to the Abbey Park Superintendent, Mr. J. Burn, for the assistance rendered in the arrangements of what proved to be a very satisfactory gathering.

The Irish Tour.—In regard to the inspection of fruit culture in Ireland, the delegates, Messrs. Castle and Gordon, left Leicester in the evening of August 5, proceeding direct to Ireland *vid* Stranraer and Larne. Investigations were commenced in the counties of Londonderry and Antrim, and continued thence south to Cork and Kerry, taking all the principal districts in the way. They also proceeded to Limerick, and returned to Dublin, where they were received by the Council of the Royal Horticultural Society of Ireland, who have promised every assistance in collecting any further information required to complete the report. The outline report to be presented at the Crystal Palace on September 5 will comprise the chief subjects that will be dealt with more fully in the official report to be published later on. It is only necessary to say here that thousands of acres of fine land suitable for fruit culture were inspected, and that fruits, especially Apples, were good, succeeding even under the worst treatment, from the extreme north to the south; that good culture was seen in a few instances, and the results there were as satisfactory as anywhere in England, and that imported fruit had a large place in the shops and markets of the principal towns, proving the existence of a demand for fruit. The delegates experienced much courteous attention during the journey, and the objects received the hearty approval of all with whom it was discussed.

Sir Charles B. Barrington, Glenstal Castle, Limerick, having kindly consented to become a Vice-President of the Association, was unanimously elected to that office. Votes of thanks were also unanimously accorded to Mr. James Ellis, Dr. Lankester, Mr. Burn, and other gentlemen at Leicester, who have assisted so greatly in the arrangements for the Conference.

The following programme was adopted for the Conference to be held at the Crystal Palace, Sydenham, on Friday, September 5 next, at 3.30 p.m.

Subjects.—"Fruits in Ireland," by Mr. Lewis Castle and Mr. George Gordon; "Peaches and Nectarines," by Mr. T. Francis Rivers; "Plums for Market," by Mr. J. Smith, gardener to the Earl of Rosebery, Mentmore; "Cherries for Market," by G. Bunyard. Exhibits of Apples and other fruits from Ireland are promised.

The Brighton Conference will be held in the King's Room, Royal Pavilion, on September 11, at 4 p.m., the Mayor of Brighton in the chair. This will be the second day of the annual Autumn Show under the management of Mr. Edward Carpenter, and a good display of fruit is expected.

Subjects.—"General Fruit Culture," by Mr. T. F. Rivers; "Grapes for Market," by Mr. J. Roberts; "Tomatos for Profit," by Mr. W. Iggulden; "Wall Fruit," by Mr. R. Smith.

Members tickets admit to the Brighton Show and Conference.

ROYAL OXFORDSHIRE HORTICULTURAL.

August 28.—This was the third show of the season, and it took place, as usual, in the quadrangle of Queen's College, the plants, cut flowers, and fruit being arranged in the covered colonnade; the vegetables in the open.

Plants.—The best six stove and greenhouse plants in flower came from Mr. G. Jacob, nurseryman, Witney, who had good examples of Clerodendron Balfourianum, Plumbago capensis alba, Begonia Weltoniensis, and Cycas revoluta; 2nd, Mr. J. Mattock, nurseryman, Headington, who showed a very fine specimen of Valotta purpurea. The best specimen stove plant in flower was Vinca alba; the best specimen greenhouse plant was Hæmanthus coccineus, a fine piece; several bulbs in a pot bearing heads of flowers, and Hoya carnosa, an excellent specimen, came 2nd. The best hardy plant in a pot was a striking example of Statice incana hybrida; a fine pot of Lilium speciosum rubrum coming 2nd. Mr. J. Walker was 1st, with collections of single and double zonal Pelargoniums; Mr. Mattock, with some very good Begonias; and the Warden of Wadham, with some excellent Fuchsias.

Capital exotic Ferns were shown by Messrs. G. and C. Jacob; and Coleus by Mr. J. Mattock and others.

Cut Flowers were represented by Dahlias from Messrs. J. Walker and J. Mattock; Roses, Gladioli, Asters, Hollyhocks, &c. Some very fine bunches of hardy perennials were shown by Mr. R. Price, Headington, among them a fine bunch of the pale blue-flowered Scabiosa caucasica. Some excellent Carnations and Picotees for the season were shown by Mr. Geo. Chaundy, and a Certificate of Merit was awarded to him for a beautiful pink self named Edith.

Fruit was sparingly shown. Grapes consisted of good Black Hamburghs and Muscat of Alexandria. Apples Quarrenden, Irish Peach, Ecklinville, Frogmore Prolific, and Lord Suffield.

Vegetables were very fine throughout, gardeners and cottagers alike.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

This Society held its autumn flower show in the City Hall, Glasgow, on the 3rd inst. The exhibits exceeded in number and bulk the capacity of any one room in the City Hall, and were displayed in three rooms. The plants, fruits, and bouquets occupied the main hall, and the vegetables and cut flowers were accommodated in two ante-rooms.

The wretched weather which has prevailed all over the country has been felt in the west of Scotland as elsewhere, yet the exhibits of out-door stuff in the shape of vegetables and cut flowers, were, in the main, as good as they are usually seen at shows here, which means much, because, in cut flowers especially, the shows of the west beat those of the east in ordinary.

The floor of the main hall was chiefly occupied with tables of plants from nurserymen and gardeners. Those of the former, two in number, were—one from Messrs. Austin & McAslan, Glasgow, a very fine table of well-selected species and varieties of stove and greenhouse plants, set up with good taste; the other being from Messrs. Smith & Simon, Glasgow, consisting largely of Palms, &c., in a very fresh and saleable condition. Two tables, set up for effect, were presented by Hugh McGinlay, Oakleigh Park, Pollockshields; and by Mr. George Weston, Murcia House, Pollockshields, the two competitors being placed in the order named by the judges.

In the open nurserymen's classes, Mr. John Sutherland, Lenzie, took the 1st position with twelve distinct table plants; the finest twelve spikes of Gladioli were staged by Mr. George Muir, Prestwick, Ayr; the finest twenty-four Dahlias were staged by Mr. Campbell, High Blantyre; the best twenty-four blooms of Roses were staged by Messrs. Jas. Cocker & Sons, Aberdeen. The finest twenty-four blooms, Carnations or Picotees, were staged by Mr. Campbell; the best twenty-four blooms, Pansies, twelve show and twelve fancy, came from Mr. Campbell; and the best twelve bunches of Dahlias came from Mr. Hugh Dickson.

In the gardeners' classes, besides the tables already alluded to, the chief prize-takers in the plant classes were Messrs. Hugh Miller, Auchenraith, Bothwell, who took 1st position for four stove and greenhouse plants, distinct; Wm. Londesborough for six table

plants, distinct, in 6-inch pots. The last-named also stood 1st for three ornamental foliage plants. In Ericas, Mr. Hugh Miller held the field.

Ferns were a good feature of the show, the successful men in the several classes being Mr. George Weston, Murchie House; Mr. Hugh McGinlay, and Mr. John Lyon. In six zonal Pelargoniums, John Lyon; two Liliums, Hugh McGinlay. These were the best of the several classes.

Messrs. Dobbie & Co., Rothesay, had a splendid exhibit of vegetables, including their fine selections of Turnips, yellow and white, now so well known and approved; Leeks, the finest in the show, were remarkable more for their great thickness, in which latter particular they were surpassed by other exhibits on the same table, though they were in their length of 15 inches blanched as long as need be desired; some fine samples of French Marigold, the best certainly in the show in respect of size, symmetry, and purity of colour; and a splendid display of Violas and Pansies; among the former, Duchess of Fife, a yellow ground shading into white, with a pale lavender margin, presented a novel and very pleasing combination in this class of flower.

Messrs. Smith & Simon, besides their excellent table of plants, exhibited a good collection of vegetables and cut flowers.

Messrs. Cross & Sons had an extensive exhibit, to a large extent made up of products of growers who had employed their particular manure in the culture of the articles presented. There were Cranston's Excelsior Onion, 2 lb. 6 oz. bulbs, 6 inches diameter, some forty bulbs being exhibited, not all of that size, but all huge Onions. Some grand flowers of Madame des Granges Chrysanthemum, both white and yellow, resembling in the former the proportions and character of Elaine, rather than the variety they represented.

Mr. Cuthbertson, of Rothesay, had an excellent exhibit of vegetables; Leeks blanched to great length —18 to 20 inches, but thin; and Asters and Marigolds, in variety.

Mr. Lister, Rothesay, had a very attractive table of cut flowers, including herbaceous perennials, which were well set up.

Mr. Forbes, Hawick, presented an interesting collection of Carnations, tuberous Begonias, and a fine specimen of the inflorescene of Teleckia speciosa, exhibited *au naturel*, which attracted some attention from connoisseurs in hardy perennial flowers.

MARKETS.

COVENT GARDEN, September 4.

MARKET still very quiet, with scarcely any alteration. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	... 3	6- 8 6	Peaches, dozen,	... 1	0- 8 0
Cobs, Kent, 100 lb.	50	0- ...	Pine-apples, St. Michael, each	... 2	0- 6 0
Grapes, lb.	... 0	9- 2 6	Plums, ½-sieve	... 7	0-11 0
Lemons, per case	...12	0-20 0			
Melons, each	... 0	6- 2 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Articho., Globe, each	0	4- ...	Mustard and Cress, punnet	...	0 4- ...
Beans, French, lb.	... 0	4- ...	Onions, per bunch	... 0	5- ...
Beet, red, per dozen	1	0- 2 0	Peas, per quart	... 1	0- ...
Carrots, per bunch	... 0	6- ...	Parsley, per bunch	... 0	4- ...
Cauliflowers, each	... 0	3- ...	Shallots, per lb.	... 0	6- ...
Celery, per bundle	... 1	6- 2 0	Spinach, per bushel	... 2	0- ...
Cucumbers, each	... 0	4- 0 6	Tomatos, per lb.	... 0	9- ...
Endive, per dozen	... 2	0- ...	Turnips, per bunch, new	...	0 4- ...
Herbs, per bunch	... 0	4- ...			
Lettuces, per dozen	... 1	6- ...			
Mushrooms, punnet	1	6- ...			

POTATOS.—As stated in my last, prices have improved for good bright stuff. Magnums, 65*s.* to 80*s.*; Snowdrops, 85*s.* to 90*s.*; Hebrons, 65*s.* to 75*s.*; Imperators, 70*s.* to 80*s.* *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6	0-18 0	Ferns, in var., doz	4	0-18 0
Aspidistra, doz.	...18	0-42 0	Ficus elastica, each	1	6- 7 0
— speci. plants, each	7	6-10 6	Foliage plants, various, each	... 2	0-10 0
Asters, per doz.	... 3	0- 6 0	Fuchsia, per doz.	... 3	0- 6 0
Balsams, per dozen	... 3	0- 4 0	Heliotrope, per doz.	4	0- 6 0
Begonias, per doz.	... 4	0- 6 0	Hydrangeas, doz.	... 6	0-18 0
Calceolaria, p. doz.	... 4	0- 6 0	Liliums, various, per dozen	... 9	0-18 0
Campanula, per doz.	9	0-18 0	Marguerites, doz.	... 6	0-12 0
Chrsanthem., p. doz.	4	0-18 0	Mignonette, per doz.	3	0- 6 0
Coleus, per dozen	... 2	0- 6 0	Nasturtiums, p. doz.	4	0- 6 0
Cyperus, per dozen	... 4	0-12 0	Palms in variety, each	... 2	6-21 0
Dracæna terminalis, per dozen	...30	0-60 0	Pelargoniums, scarlet, per dozen	... 3	0- 6 0
— viridis, per doz.	12	0 24 0	— per doz.	... 6	0-12 0
Euonymus, in var., per dozen	... 6	0-18 0	Petunias, per doz.	... 4	0- 6 0
Evergreens, in var., per dozen	... 6	0-24 0			
Ericas, various, doz.	8	0-18 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	... 2	0- 4 0	Myosotis or Forget-me-nots, 12 bun.	... 2	0- 4 0
Asters, 12 bunches	... 1	6- 5 0	Pinks, various, 12 bn.	3	0- 6 0
— French, bunch	... 1	0- 1 6	Pelargoniums, scarlet, 12 spr.	...	0 3- 0 6
Bouvardias, per bun.	0	6- 1 0	— dozen sprays	... 0	4- 0 9
Callæthiopica, 12 bl.	2	0- 5 0	Primulas, double, 12 sprays	...	0 6- 1 0
Carnations, 12 blms.	1	0- 2 0	Pansy, or Heartsease, 12 bunches	... 1	0- 2 0
— 12 bunches	... 4	0- 6 0	Poppies, various, doz. bunches	 1	0- 2 0
Chrysanth., 12 bun.	3	0- 6 0	Pyrethrum, 12 bun.	2	0- 4 0
— 12 blooms	... 1	0- 3 0	Roses, Tea, per doz.	0	6- 1 6
Cornflower, 12 bun.	1	6- 3 0	— coloured, dozen	1	0- 1 6
Dahlias, 12 bun.	... 2	0- 4 0	— red, per 12 bun.	2	0- 6 0
Eucharis, per dozen	2	0- 4 0	— Safrano, dozen	1	0- 2 0
Gardenias, 12 blooms	2	0- 4 0	— outdoor, 12 bun.	1	0- 3 0
Gladiolus, 12 bun.	... 6	0-12 0	Stephanotis, 12 spr.	1	6- 3 0
Heliotropes, 12 spr.	0	6- 1 0	Sultan, 12 bunches	... 3	0- 4 0
Lavender, 12 bun.	... 3	0- 5 0	Tuberoses, 12 blms.	... 0	3- 0 6
Lilium, var., 12 bl.	... 0	6- 4 0			
Maiden Hair Fern, do	4	0- 9 0			
Marguerites, 12 bun.	3	0- 6 0			
Mignonette, 12 bun.	1	0- 3 0			

ORCHID-BLOOM in variety. Not over plentiful.

SEEDS.

LONDON: *Sept.* 3.—Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, London, E.C., report an exceedingly strong market for red Clover seed; the new crops are proving everywhere very bad. Trefoils just now are quiet, but firm. New white Clover seed offers very sparingly. There is no change in Alsike. For perennial and Italian Ryegrasses more money is asked. Lower prices are quoted for winter Tares. Sowing Rye is wanted. Choice blue Peas in good dry condition are still scarce. For bird seeds the demand is meagre on former terms. Linseed is firm.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending August 30, and for the corresponding period last year:—1890, Wheat, 35*s.* 9*d.*; Barley, 31*s.* 3*d.*; Oats, 19*s.* 2*d.* 1889, Wheat, 34*s.* 2*d.*; Barley, 24*s.* 6*d.*; Oats, 19*s.* 6*d.*

FRUIT AND VEGETABLES.

SPITALFIELDS: *September* 3.—Good supplies of fresh vegetables, new English Potatos, &c.; fruit scarce; demand good for fruit, but only moderate for vegetables, &c. Prices were as follows:—Fruit: English Apples, 3*s.* 6*d.* to 8*s.* 6*d.* per bushel; Pears, 2*s.* 6*d.* to 6*s.* per half-sieve; Egg Plums, 6*s.* to 7*s.* do.; Victoria Plums, 7*s.* 6*d.* to 10*s.* do.; Orleans Plums, 8*s.* to 10*s.* do.; English Tomatos, 4*s.* to 6*s.* per peck; foreign Tomatos, 4*d.* to 1*s.* 9*d.* per box. Vegetables: Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Cabbages, 2*s.* to 4*s.* per tally; Brussel Sprouts, 2*s.* to 2*s.* 6*d.* per half-sieve; Cauliflowers, 2*s.* to 3*s.* 6*d.* per dozen; French Beans, 1*s.* 6*d.* to 2*s.* per bushel; Scarlet Beans, 1*s.* 6*d.* to 2*s.* per bushel; Vegetable Marrows, 1*s.* 6*d.* to 4*s.* per tally; Turnips, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen bunches; Carrots, 2*s.* to 3*s.* 6*d.* do.; ditto, 22*s.* to 60*s.* per ton; Leeks, 2*s.* to 2*s.* 6*d.* per dozen; Mustard and Cress, 1*s.* 6*d.* to 2*s.* per dozen baskets; Endive, 1*s.* 6*d.* to 2*s.* per dozen; English Onions, 6*s.* to 6*s.* 6*d.* per cwt.; Spanish Onions, 7*s.* to 7*s.* 6*d.* per case; Dutch Onions, 4*s.* to 4*s.* 6*d.* per bag of 110 lb.; Celery, 6*d.* to 1*s.* per bundle; Parsley, 2*s.* to 3*s.* per dozen bunches; Beetroots, 1*s.* 6*d.* to 2*s.* per dozen bundles; Horseradish, 1*s.* 1*d.* to 1*s.* 4*d.* per bundle; frame Cucumbers, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen; natural do., 4*d.* to 1*s.* per dozen.

STRATFORD: *Sept.* 3.—The supply has been good during the past week, and a brisk trade done at the undermentioned prices:—Cabbages, 2*s.* to 4*s.* per tally; Cauliflowers, 1*s.* to 1*s.* 6*d.* per dozen; Carrots, household, 40*s.* to 50*s.* ton; do., cattle-feeding, 27*s.* 6*d.* to 32*s.* do.; Turnips, 2*s.* to 2*s.* 6*d.* per dozen; Mangolds, 20*s.* to 25*s.* per ton; Swedes, 21*s.* to 24*s.* do.; Onions, English, £5 to £6 per ton; do., Valencias, 5*s.* 6*d.* to 6*s.* 6*d.* per cask; Apples, English, 5*s.* 6*d.* to 7*s.* 6*d.* per bushel; American, 35*s.* to 38*s.* per barrel; Watercress, 6*d.* to 7*d.* per dozen.

POTATOS.

BOROUGH AND SPITALFIELDS: *September* 2.—Quotations:—Home grown Myatt's, 60*s.* to 70*s.*; Hebrons, 60*s.* to 80*s.*; Regents, 60*s.* to 70*s.*; Early Rose, 50*s.* to 60*s.*; Magnums, 60*s.* to 70*s.* per ton.

SPITALFIELDS: *September* 3.—Quotations:—Magnums, 40*s.* to 70*s.*; Myatt's Kidneys, 45*s.* to 60*s.*; Regents, 50*s.* to 60*s.*; Imperators, 55*s.* to 70*s.*; Hebrons, 45*s.* to 60*s.*; Early Rose, 40*s.* to 50*s.* per ton.

STRATFORD: *September* 3.—Quotations:—Magnums, dark, 47*s.* to 50*s.*; do., light, 55*s.* to 70*s.*; Imperators, 55*s.* to 76*s.*; Hebrons, 50*s.* to 70*s.*; White Elephants, 55*s.* to 75*s.*; Essex Regents, 60*s.* to 70*s.* per ton.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80*s.* to 105*s.*; do., inferior, 46*s.* to 75*s.*; hay, best, 60*s.* to 87*s.*; inferior do., 26*s.* to 50*s.*; and straw, 20*s.* to 42*s.* per load.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending Aug. 30.	Accumulated. Above 42° for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	4 —	57	0	— 51	— 72	0 av.	172	32.9	22	25
2	5 —	59	0	— 98	— 58	5 +	148	21.0	32	29
3	5 —	69	0	— 38	— 93	0 av.	125	16.9	44	28
4	7 —	78	0	— 91	— 39	1 —	130	16.9	49	36
5	7 —	69	0	— 116	— 26	1 —	124	15.8	45	31
6	5 —	93	0	— 88	— 68	3 +	124	19.6	50	34
7	4 —	69	0	— 51	— 73	2 —	149	32.6	44	33
8	7 —	69	0	— 29	— 81	4 +	142	22.3	40	30
9	6 —	81	0	— 104	+ 12	1 —	145	25.6	55	35
10	6 —	66	0	— 72	— 56	3 +	162	22.1	41	31
11	6 —	71	0	— 59	— 15	1 —	157	27.4	47	33
12	5 —	99	0	— 9	— 22	2 +	145	22.9	61	42

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending August 30, is furnished from the Meteorological Office:—

"The *weather* has again been unsettled and cold, with frequent rain and occasional thunder and lightning. In most parts of the Kingdom, however, fine bright intervals have occurred, and towards the end of the week the conditions improved generally.

"The *temperature* has continued below the mean in all districts, the deficit having ranged from 4° in the north and west of Scotland to 6° in Ireland, and to as much as 6° or 7° in most parts of England. The highest of the maxima, which were recorded on rather irregular dates, varied from 61° to 63° in Ireland, from 62° to 64° in Scotland, and from 63° to 72° over England. The absolute minima were registered on the 30th, and were very low for the time of year. In 'England, S.W.' (at Llandovery), the sheltered thermometer fell to 31°, and in 'Scotland, W.,' to 33°. Elsewhere the minima varied from 34° in the 'Midland Counties' and 'Ireland, N.,' to 40° in 'England, N.E.,' and 45° in the 'Channel Islands.' During the latter part of the period, sharp frosts occurred on the grass at several of the inland stations.

"The *rainfall* has been more than the mean in 'Scotland, E.,' 'England, S.,' 'England, N.W.' 'Ireland, N.,' and the 'Channel Islands;' in the other districts it has either been little less than the normal, or about equal to it.

"*Bright sunshine* has been more prevalent over the country generally than for some time past, the percentage of the possible duration having ranged from 22 in 'Scotland, N.,' and 32 in 'Scotland, E.,' to between 44 and 55 in most other districts, and to 61 in the 'Channel Islands.'"

ENQUIRIES.

"*He that questioneth much shall learn much.*"—BACON.

QUERCUS ROBUR.—Will any correspondent kindly furnish information and experience of Quercus robur, or of the suitability or otherwise of any other species of Oak (English Oak excepted), for a broad and long avenue? Also, if any good specimen trees of those kinds which are mentioned are to be seen anywhere in the Midlands? *W. C. M.* [See the "Dukeries."]

NOTICES TO CORRESPONDENTS.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

BEGONIAS: *F. G.* The double varieties are good, but there are many better singles. Will report on the malformation later.

BOOKS: *W. B. Floral Decorations for the Dwelling-house*, by Annie Hassard, is out of print, but it may be obtained second-hand.

CATTLEYA AUREA DISEASED: *Je ne le sais pas.* The disease is probably due to a fungus not yet determined, but the effects of which are very disastrous. See *Gardeners' Chronicle*, February 11, 1890, p. 240.

EXHIBITOR: *R. J.* As you were a gentleman's gardener for thirty years you would certainly have the right to show as such, although now you grow plants as a hobby. It would be unfair to amateurs and cottagers if you were allowed to compete with them.

FERNS: *Filix nigra.* The disease appears to be due to want of ventilation, and consequent scorching of the leaves when wet with dew.

FLORISTS' FLOWERS: *A Subscriber for Ten Years.* We cannot undertake to name florists' flowers. Send them to some nurseryman who deals in them. It will be a comfort to him if you do not pack them in cotton wool.

MARÉCHAL NIEL ROSE AND MUSHROOM BED: *A. E. K.* If you place the Mushroom bed over the roots of the Rose, the Rose will probably die from drought and want of air. If you could make a raised flooring of wooden slabs, stone, &c., over the roots, no harm might arise.

NAMES OF FRUITS: *T. W. E.* George IV. Peach, if the leaves have round glands. George IV. is a variety of American origin seldom met with in gardens.

NAMES OF PLANTS: *Munches.* 1, Eupatorium cannabinum; 2, Sciadopitys verticillata; 3, Podocarpus chilensis.—*C. N.* 1, Polygonum Weyrichii; 2, P. sachalinense; 3, P. polystachyum; 4, P. cuspidatum; 5, Linaria reticulata luteo-purpurea.—*J. R.* Eucalyptus amygdalina.—*Sir C. S.* Eucalyptus viminalis probably, but without seeing the tree in all stages of growth it is impossible to determine the species of this genus, Griselinia littoralis, New Zealand.—*A. B.* Lythrum salicaria.—*Winkle.* 1, the Deodar, or, may be, the Lebanon Cedar, we cannot tell from the scrap; 2, Skimmia japonica, true, the S. oblata of gardens; 3, Cryptomeria elegans; 4, Abies Douglasi; 5, Quercus Ilex; 6, a Juniper.—*D. Knight.* Poinciana pulcherrima. Next time, address the Editor, unless you want information about advertisements or matters of business.—*J. S.* Agapanthus umbellatus, not a named variety.—*G. B.* Helianthus (or Harpalium) rigidus.—*Stuart.* Wild Chicory, Cichorium Intybus.—*D. W.* Doodia media, Pellea Davoueana.—*G. A.* Miltonia spectabilis.—*J. P.* Viburnum opulus.

SHREWSBURY SHOW. Mr. Thomas Wilkins, gardener, Inwood House, Henstridge, Blandford, writes to inform us that it was he who took the 1st prize for a collection of vegetables, and not Mr. Hayhurst, as was stated in our report of the show, p. 254.

TREES AND SHRUBS BY THE SOLENT: *An Old Subscriber* should read our reply to another "Old Subscriber," in this column.

TREES IN NORTH-EAST YORKSHIRE NEAR THE SEA: *Old Subscriber.* Plant in the first line, as nurse and shelter-shrubs, Tamarix germanica, Elder in variety, Blackthorn, Furze, common Crab; then Beech, Hornbeam, Sycamore, Pinus Pinaster, Scotch and Austrian Pines and common Yew. First get up thick shelter belts, 20 to 30 yards in width, in well-prepared land, and behind this shelter you may be able to get many fine plants to grow which would otherwise perish. Obtain your planting stuff from open well-exposed nurseries in your own or some northern county. Do not plant any Elms and but few Oaks, as these trees do no good near salt water, at least in that part of the country. If an outer hedge be made of Blackthorn, it is a good plan to lace it together by planting amongst the Thorns, Traveller's Joy, Brambles, and Ivy.

VINES AND GRAPES: *J. B. P.* It is difficult to keep the roots of Vines inside a vinery in good order, and at the same time allow the Grapes to hang on the Vines; and the more so, seeing that your Grapes shank a good deal, which watering the soil would certainly intensify. If the Grapes must hang on the rods, the border should be maintained in a moist state so long as the foliage keeps green, and afterwards a mulch of dry hay should be spread over it, as a preventive of evaporation of moisture, and no water given during the time the Grapes are kept hanging on the rods. To mitigate the evil of shanking, the Vine roots must be brought up near to the surface, and induced to remain there by surface-feeding, the drainage made very good, and the temperature of the soil maintained at a higher point than hitherto. The Muscat of Alexandria suffers more, because, being a native of a much warmer climate, the roots dislike a cold medium.

CATALOGUES RECEIVED.

We have received catalogues of Bulbs, Roots, and Tubers suitable for autumn planting from—

Messrs. FISHER, SON, & SIBRAY, Handsworth, Sheffield.
KENT & BRYDON, Darlington.
J. MACFEE, Moss Street, Paisley.
J. T. GILBERT, Anemone Nurseries, Dyke, Bourne, Lincolnshire.
R. VEITCH & SON, High Street, Exeter.
HARRISON & SONS, Market Place, Leicester.
R. CLEAVER, 47, Bore Street, Lichfield.
DOBBIE & MASON, 66, Deansgate, and 22, Oak Street, Manchester.
W. DRUMMOND & SONS, Stirling, N.B.
W. MARTIN, 20, Market Place, Hull.
C. TURNER, Royal Nurseries, Slough.
ARTHUR ROBINSON, 8, Leadenhall Street, London.
F. C. HEINEMANN, Erfurt, Germany.
V. DÖPPLER, Erfurt, Germany.
WEBB & SONS, Wordsley, Stourbridge.
R. NEAL, Wandsworth Common, London, S.W.

Messrs. F. SANDER & Co., St. Albans—Orchids.
HEWITT & Co., Birmingham—Alpines and Border Plants, &c.
M. ANDRÉ LEROY, Angers, Main-et-Loire, France—Plants, &c.

COMMUNICATIONS RECEIVED.—W. T. T. D.—J. W.—C. W. D.—R. L., Edinburgh.—W. E. G.—J. B.—L. L., Brussels.—Vicomte de St. Leger, Rio Janeiro.—G. N.—Saharunpore.—J. H. M., Brighton, Melbourne.—Baron von M., Melbourne.—B. D. J.—Dr. Buysmann, Middleburgh.—F. W. B.—C. W. S.—L. C.—W. G. S.—H. H. D'O.—Sutton & Sons.—G. M'D.—G. H.—General S.—C. S.—C. W. D.—W. S.—Secretary Crystal Palace Co.—C. W. S.—T. T.—J. B.—W. Stansfield.—E. C.—T. H.—R. N.—H. E.—J. D.—F. R.—J. O'B.—W. R.—A Visitor.—R. D.—A. D.—E. M.—J. T. E.—R. A. R—T. C.—M. T.

PHOTOGRAPHS, SKETCHES, &C.—W. G.—J. A. (two).—Photographs also have been received from Mr. Batcheler, Harefield, and Mr. Hughes, of Birkenhead, to whom our hearty thanks are tendered.

PHORMIUM TENAX.—A correspondent near Lyme Regis, says that the above plant flowers well in her garden, which is about 5 miles distant from the sea. Some plants brought from New Zealand, and planted in a garden in the same county (Dorset), but distant from the sea about 3½ miles, have also flowered; the flowers in a mild damp season appearing in early November.

CHRYSANTHEMUM SEASON.

STANDEN'S

Established Nearly 30 Years. **MANURE.**

It is now generally acknowledged that this highly concentrated Manure exceeds all others in general fertilizing properties and staying powers, thus rendering its money value at least double that of other Manures.

More prizes have been obtained through the use of this Manure by Chrysanthemum exhibitors than by any other Fertilizer.

It promotes a rapid, healthy, and robust growth to plants generally.

It is a clean and dry Powder, with very little smell.

It is consequently particularly adaptable for Amateurs, equally with Nurserymen.

VOLUNTARY TESTIMONIALS,
the originals of which can be seen if desired:—

MESSRS. CORRY, SOPER, FOWLER & CO.,
"Fareham.

"SIRS,—We have used Standen's Manure for Chrysanthemums, mixed with the mould, when potting their last shift, and an occasional sprinkle over the top of the pots during their growth, especially just before the bud shows. We took last season thirty-one First Prizes, Silver Cup at Portsmouth, £25 Silver Cup, Devizes, and £10. We can highly recommend it for plants, especially Roses, Pelargoniums, Azaleas, Gardenias, and Stephanotis. Our Stephanotis this season we can pick by the gallon, from six to eight pips on each spray."

(Signed) W. & G. DROVER.

"We have used Standen's Manure for some years, and have never found any fertilizer so safe and valuable. Its action is literally 'magical.' We have tried it on unhealthy plants which seemed past recovery, and it has restored them to their natural vigour. However valuable other fertilizers may be, none can be compared to this. Camellias grown in the same pots *for ten years* are as healthy as if just repotted."

C. M. HOVEY, Boston, U.S.A.

Sold in Tins of increased sizes—6d., 1s., 2s. 6d., and 5s. 6d. each.

And in Kegs (free), at the following greatly reduced prices:—28 lb., 10s. 6d.; 56 lb., 18s.; 112 lb., 32s.

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Nothing can surpass this method for the total destruction of Insect Pests in Greenhouses. It CANNOT fail where the houses are secure. No possible injury to the most delicate plant.

PRICES—For Frames, &c., of 50 cubic feet, 6*d.*; 100 feet, 9*d.*; 500 feet, 1*s.*; 1000 feet, 1*s.* 6*d.*; 4000 feet, 5*s.* each.

Owing to the enormous demand, intending users should give their Seedsmen Early Orders to secure a supply.

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BARR'S AUTUMN CATALOGUES, free on application.
BULBS OF FINEST QUALITY for all seasons, including many rare and beautiful Bulbs and Tubers.
DAFFODIL CATALOGUE, contains the only complete collection of these beautiful hardy spring flowers, with a List of cheap and showy sorts for large plantings.
PLANT CATALOGUE, describing the best Hardy Herbaceous Perennials for Borders, Rockwork, and Cutting.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

FERNS! FERNS!! FERNS!!!—Trade offer. Great Annual Sale of Surplus Stock; 100,000, in 25 sorts, Greenhouse and Stove, Pteris, Adiantums, Polypodiums, Cyrtomiums, Polystichums, &c.; 30,000 Pteris cretica cristata, fine bushy stuff, soon make 48 if potted at once; 10,000 Adiantum cuneatum, bushy stuff, all at 12s. per 100; store Ferns, variety, 6s. per 100, 50s. per 1000. Packed free, cash with order.
J. SMITH, The London Fern Nursery, Loughboro' Road, S.W.

The Best Present for a Gardener.
VINES and VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5s., post-free 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

Dutch, Cape, and Exotic Bulbs.
ANT. ROOZEN AND SON'S CATALOGUE for 1890, containing details of their immense Collections of New, Rare, and Fine Bulbs and Plants (94 pages in English) is now ready, and will, as usual, be sent, post free, on application to their Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.; or themselves direct at Overveen, near Haarlem, Holland.
N.B.—No connection with any other firm of the same name.

MESSRS. DOBBIE AND CO.'S Autumn CATALOGUE is now ready, and may be had post-free on application. It contains full particulars and Prices of their well-known stocks of HYACINTHS, TULIPS, CROCUS, NARCISSI, ROSES, PANSIES, VIOLAS, &c., for Autumn Planting.
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CLIBRAN'S, Oldfield Nurseries, ALTRINCHAM; also 10 and 12, Market Street, Manchester.

GENUINE GARDEN REQUISITES, as supplied to the Royal Gardens.
RUSSIA MATS—New Archangel, 9 ft. 4 ins. by 4 ft. 6 ins., 20s. doz.; Heavy Petersburg, 7 ft. by 3 ft. 8 ins., 12s. doz. SPECIALITE TOBACCO PAPER, 10d. per lb., 28 lb. for 21s. TOBACCO CLOTH, 1s. per lb., 28 lb. for 26s. ORCHID PEAT, 8s. per sack. PEAT, LOAM, SAND, MANURES, and SUNDRIES. Price List free. — W. HERBERT AND Co., Hop Exchange Warehouses, Southwark Street, London, S.E.

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ORCHID PEAT, best quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. RHODODENDRON and AZALEA PEAT. Samples and Prices to WALKER AND CO., Farnborough, Hants.

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1 Cwt., and Oil Mixture, Free to all Stations.
Liquid Non-Poisonous Paints for Inside of Conservatories, &c. Prices, Patterns, and Testimonials, Post-free.
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BACHELOR'S WALK, DUBLIN.—*Discount for Cash.*

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TRIAL SAMPLE post-free. Without which none is genuine.
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COMPLETE SATISFACTION GUARANTEED
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Holds 40 gallons. Wrought-iron frame-work neatly painted. Galvanized tubes with tap to regulate flow. Gives spray 56 ins. wide. Price £4 net on rail Glasgow.
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COCOA-NUT FIBRE REFUSE,
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MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—**H. G. SMYTH,** F.R.H.S., 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

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is simple to use and free from unpleasant smell.

From Mr. G. WYTHES, *Syon Gardens, Brentford.*—"I am pleased with the Fumigating Insecticide. For Orchids I think it will be a great boon."

From Mr. W. TUNNINGTON, *The Gardens, Calderstone.*—"We have again used your Fumigating Insecticide, and have not the least doubt about its efficacy."

From Mr. W. BENNETT, *The Gardens, Rangemore, Burton-on-Trent.*—"I am much obliged for your Fumigating Insecticide, and cannot do any other than report favourably. We tried it upon a lot of miscellaneous things, and they are now, a week after, quite clean and uninjured."

From Messrs. J. BACKHOUSE & SON, *Nurseries, York.*—"We have tried Campbell's Fumigating Insecticide, and found it very efficacious, and also pleasant in using."

From Mr. JOHN ROBERTS, *The Gardens, Tan-y-Bwlch* —"Thanks for Fumigating Insecticide. I have given it a fair trial. It seems to be a great boon, not requiring any attention after being lighted, and is perfectly harmless to delicate flowers and leaves."

In rolls, post-free, for houses having a capacity of—
100 cubic ft., 8*d.* 500 cubic ft., 1/-. 1000 cubic ft., 1/3. 2000 cubic ft., 2/3. 3000 cubic ft., 2/9. 4000 cubic ft. 3/3.

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The ingredients have been so arranged that, whilst accelerating luxuriant growth, permanent benefit is secured by a continuance of nourishment to the plant.

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7 lb.	14 lb.	28 lb.	56 lb.	112 lb.
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TWO PRIZE MEDALS.

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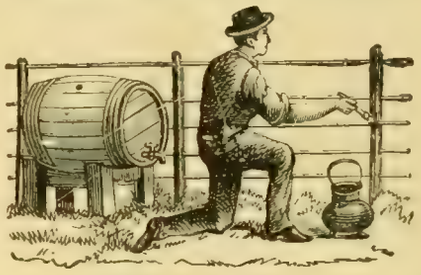
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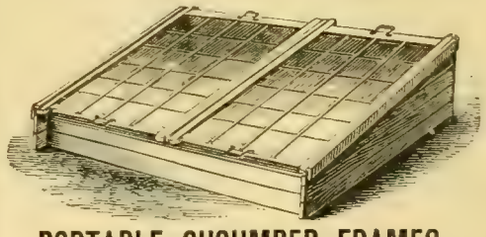
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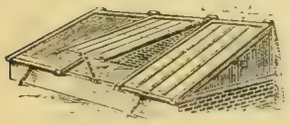
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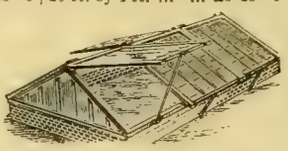
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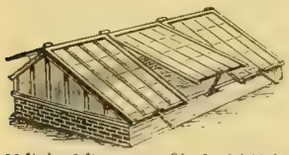
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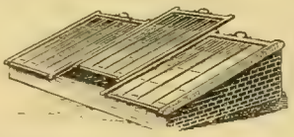
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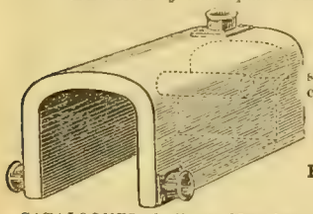
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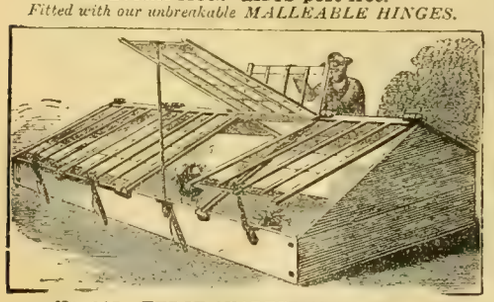
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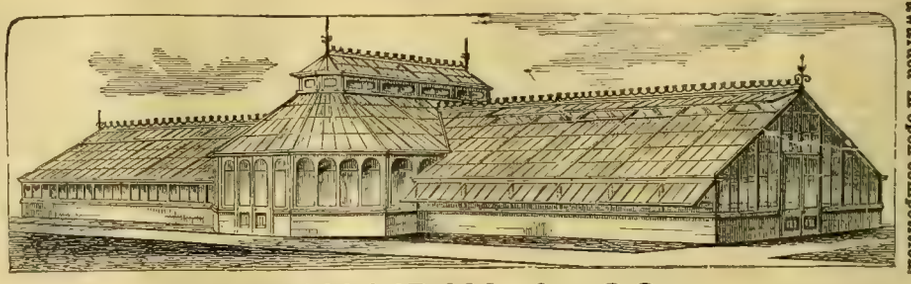
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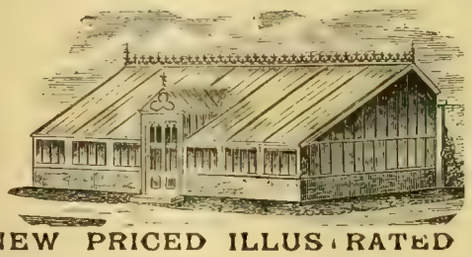
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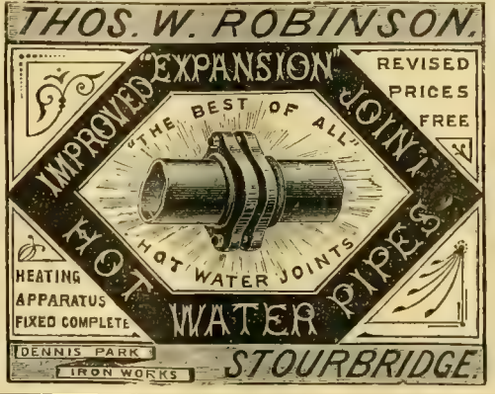
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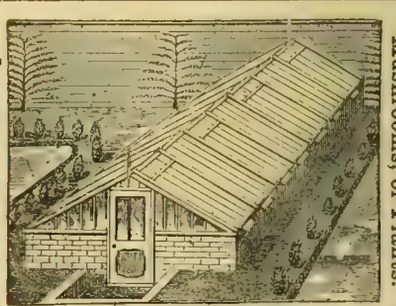
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CHARLES TURNER'S Descriptive Priced CATALOGUE of above, will be sent free on application. The consignments of Bulbs have been received in excellent condition.—The Royal Nurseries, Slough.

Strawberries, in 3½-inch pots.

FRANCIS R. KINGHORN offers very strong Plants of all the leading sorts, "La Grosse Sucrée," "Noble," "Latest of All," "Loxford Hall," &c. LIST on application.—Sheen Nurseries, Richmond, Surrey.

LAXTON'S STRAWBERRIES.—Competitor, Cardinal, and White Knight (new 1890); Latest of All, Noble, Commander, A. F. Barron, &c., with Albert (fine new), A. Nicaise, Waterloo, La Grosse Sucrée, and all best sorts. New Priced LIST from
T. LAXTON, Seed Grower, Bedford.

ASPARAGUS PLUMOSUS NANUS, Seedlings, 50s. per 100; in 60-pots, 75s. per 100; in 48-pots, £7 10s. per 100.
COCOS WEDDELIANA, Seedlings, 10s. per 100; thumbs, 50s. per 100; 60-pots, £5 per 100; 48-pots, £12 10s. per 100.
WILLIAM ICETON, Nurseryman and Florist, Putney Park Lane, Putney, S.W.

Prize Cob Filberts.

MR. COOPER, F.R.H.S. (late of Calcot Gardens), is the largest grower in the kingdom of Prize Cob Filbert Trees for Sale. Descriptive and Price LISTS on application to Mr. COOPER, Western Elms, Reading, Berks.

GRAPE VINES, FIGS.—Fine, well-ripened, for fruiting or planting. Price LIST free.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

FORTHCOMING SALES BY MESSRS. PROTHEROE & MORRIS,

Horticultural Auctioneers and Valuers,

CENTRAL AUCTION ROOMS and ESTATE OFFICES, 67 and 68, CHEAPSIDE, E.C. CATALOGUES FOR ALL AUCTIONS SENT FREE BY POST ON APPLICATION.

Dutch Bulbs.

GREAT UNRESERVED SALES.

Four times Weekly.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, all received direct for Unreserved Sale, and lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Upper Edmonton.—Monday Next.

FIFTH ANNUAL SALE of about 45,000 GREENHOUSE and other PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. May, to SELL by AUCTION, on the Premises, The Dyson's Lane Nursery, Upper Edmonton (five minutes' walk from Angel Road, and eight minutes' from Silver Street Railway Station, G.E.R.),

on MONDAY, September 15,

at 12 o'Clock punctually, in consequence of the large number of lots.

45,000
STOVE and GREENHOUSE PLANTS,
remarkably well-grown, and in the best possible condition, including
20,000 FERNS,

for the growth of which this Nursery is so famed, all being of the most useful market sorts, and amongst them many novelties.

10,000 TREE CARNATIONS,
comprising a fine lot of Mrs. Reynolds Hole, Mdle. Carle, A. Alegatierre, &c. A good lot of Old Crimson CLOVES.

2,000 TEA ROSES in Pots (extra strong),
embracing Maréchal Niel, Gloire de Dijon, and W. A. Richardson, with well-ripened growths from 15 to 18 feet long; also The Bride, Niphetos, Souvenir de un Ami, and others.

10,000 BOUVARDIAS,
including President Cleveland, Mrs. Robt. Green, Candidissima, and all the best double and single varieties.

3000 GENISTAS, fine bushy Plants.

Solanums (well berried), Crotons, Draccenas, Eucharis Amazonica, Aralias, Statices, Euphorbias, Ampelopsis Veitchii, Clematis, Ivies, Cyclamen, Primulas, Camellias, Azaleas, Ficus, Palms, &c. Genistas and Bouvardias for growing on, and a great variety of other useful Plants.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Lee, Kent, S.E.—Tuesday Next.

GREAT ANNUAL TRADE SALE, to commence punctually at 11 o'Clock, there being upwards of 1200 lots to sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons, to SELL by AUCTION, on the Premises, The Burnt Ash Lane Nurseries, Lee, Kent, S.E. (adjoining the Railway Station, South Eastern Railway), on TUESDAY, September 16, at 11 o'Clock punctually, without reserve, a remarkably well-grown stock of

WINTER-BLOOMING HEATHS,
all beautifully set with bloom-buds; and other

STOVE and GREENHOUSE PLANTS,
consisting of—

20,000 Erica hyemalis	1000 Boronia megastigma, and others
5,000 ,, gracilis	400 Solanum capicastrum, well berried
2,000 ,, Cavendishii	1000 Adiantum cuneatum
1,000 ,, coccinia minor	1000 Lomaria gibba
600 ,, caffra	800 Tea Roses in pots
600 ,, melanthera	500 Aralia Sieboldii
1,000 Grevillea robusta	500 Clematis Jackmanni
1,000 Ampelopsis Veitchii	550 Crotons, beautifully coloured
500 Acacia armata	
1,000 Palms, of sorts	
1,500 Epacris, to name	
5,000 Genistas	

with a large quantity of Epacris and Boronias of sorts. Young Erica hyemalis, E. Cavendishii, E. gracilis, and others; also Genistas, in 60-pots, for growing on.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—An inspection is invited of the Plants included in this Sale, the Heaths being particularly fine, and the whole of the Stock of the same first-class character as in previous years.

Lea Bridge Road, E.—Wednesday Next.

ANNUAL UNRESERVED SALE of fine Winter-flowering HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser, to SELL by AUCTION, on the Premises, the Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway), on WEDNESDAY, September 17, at 11 o'Clock precisely, in consequence of the large number of lots, a

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large quantity of WINTER-FLOWERING and other PLANTS, including:—

20,000 Erica hyemalis	2,000 Maréchal Niel, Gloire de Dijon, William Allen Richardson, 8 to 10 feet; Niphetos, and other Tea-scented Roses in great variety
1,000 Tree Carnations	
4,000 Erica gracilis	
6,000 Genista fragrans	
6,000 Ampelopsis Veitchii, 4 feet	1,000 Deutzia gracilis, established in pots, for earliest forcing
1,000 Epacris	
2,000 Lapageria rosea superba	
6,000 Cyclamen persicum (Fraser's superb strain)	6,000 Bouvardias, including a lot of "President Cleveland."
2,000 Passiflora Constance Elliot and cœrulea	5,000 Solanums, beautifully berried
2,000 Variegated and other Ivies	1,000 Clematis indivisa lobata
6,000 Clematis Jackmanii, and other best-named sorts	

and a great number of Erica ventricosa, Cavendishii, caffra, large-flowering white Jasmines, Stephanotis floribunda, Boronia megastigma, Escallonia macrantha, Gum Cistus, Japanese Honeysuckles, Ceanothus, Broad-leaved Gold and Silver Euonymus, Magnolias of sorts, Figs strong in variety, India-rubber Plants, Palms, Ferns, a few nice Araucaria excelsa, and other Plants. Also a large quantity of young Heaths and Genistas, for potting on.

The whole of the Stock is in the best condition, and ready for immediate sale.

HOE STREET STATION, on the Great Eastern Railway, is within a short distance of the Nursery. Trains from Liverpool Street every half-hour.

May be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Enfield Highway, N.—Thursday Next.

TWENTY-SECOND ANNUAL TRADE SALE of STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Brimsdown Nursery, Green Street, Enfield Highway, N., adjoining the Brimsdown Station, Great Eastern Railway, on THURSDAY, September 18, at 11 o'Clock punctually, in consequence of the unusually large number of lots, by order of Mr. John Maller, without reserve, upwards of 1200 lots of remarkably well-grown STOVE and GREENHOUSE PLANTS, mostly in No. 48-pots, and fit for immediate Sale, consisting of

15,000 WINTER-BLOOMING HEATHS,
including hyemalis, gracilis, Cavendishii, Ventricosas in variety, &c.
5000 Solanums, exceptionally well-grown and berried.
5000 Ferns, Adiantums, Lomarias, Pteris, &c.
3000 Tree and other Carnations, leading varieties, including Mrs. Moore and Duke of Fife.

1000 Epacris to name	1000 Stove and Greenhouse Climbers, including—Dipladenias of sorts, Allamandas, Bougainvilleas, Stephanotis, Tacsonias, &c.
5000 Bouvardias, including President Cleveland, Vulcan, and other best varieties	
1000 Grevillea robusta	1000 Passifloras
5000 Genistas	2000 Ampelopsis Veitchii
500 Double White Primulas	
500 Crotons, beautifully coloured	

500 Euphorbia Jacquiniflora, Chrysanthemums, new varieties, Palms, Ficus, Large Camellias and Azaleas for cutting, many thousands of small Ericas, Genistas, Ferns, &c.

Large quantities of Acacias, Gardenias, Geraniums, Cyperus, Poinsettias, Euonymus ovatus aureus, &c., suitable for the Trade and other extensive Buyers.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and also at the Brunswick Nursery, Tottenham, and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

N.B.—The whole of the Stock is in first-rate condition, the Ericas being especially well set for flower, and the Solanums unusually well berried.

Leytonstone, E.—Friday Next.

ABSOLUTE CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the premises, The American Nurseries, Leytonstone, adjoining the Leytonstone Railway Station, on FRIDAY, September 19, at 12 o'Clock to the minute, without the slightest reserve (the land being required for other purposes), the whole of the choice Stove and Greenhouse Plants, consisting of Camellias, Azaleas, Draccenas, Pandanus,

10,000 CHOICE PALMS IN VARIOUS SIZES,
including Kentias, Cocos Weddelliana, Areca lutescens, Latania borbonica, Seaforthias, and Areca Baueri.

A FINE STOCK OF THE BEAUTIFUL NEW VARIEGATED FICUS,
double white Primulas, Lapageria alba, Bouvardias, a fine assortment of choice Ferns, a small collection of Exotic Orchids, fine pot Roses, with strong canes of Maréchal Niel and Gloire de Dijon; also

ELEVEN GREENHOUSES
containing
3000 FT. OF 4-IN. HOT-WATER PIPING,
Boilers, about 1500 feet of slate slab staging, also the erection of Stabling, Bay Mare, and Ayrshire Cow, capital spring market Van with covered top, a Phæton, a capital Band Saw for hand or steam-power, and numerous other articles.

The stock may be viewed the day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

N.B.—The whole of the Out-door Nursery Stock will be Sold by Auction during the coming season. See dates in notice of Forthcoming Sales in *Gardeners' Chronicle* of August 30.

Friday Next.

GREAT ORCHID SALE.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. Sander, of St. Albans, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, September 19, at half-past 12 o'Clock, a very fine consignment of IMPORTED PLANTS, which are all in the very best condition, and which includes such valuable kinds as

VANDA SANDERIANA,

One of the finest importations ever received, and just to hand, *ex* s.s. *Sachsen*. Messrs. F. Sander & Co. have just received a splendid consignment of this noble Orchid, which is PROBABLY THE GRANDEST ORCHID IN THE WORLD, and amongst which are some specimens of rare beauty and size. Mr. Micholitz, the collector of these plants, brought them home under his personal care, attending to the watering of them, &c., consequently none of the plants have suffered from drought or other drawbacks usually attending importations. When the cases were opened, every plant looked as fresh and sound as though established. This is really a grand importation, and buyers should avail themselves of THIS ONE RARE CHANCE to secure a good stock of such a valuable Orchid for their collections. Every plant which will be sold is in good condition, and many have a profusion of young green roots which cannot fail to make the plants prosper. For description and plate, see *Reichenbachia*, vol. ii., part iv., t. 62.

CATTLEYA SPECIES.

In the way of C. Trianæ. Our collector has recently been searching in a hitherto unexplored part of Columbia, where he found these plants. With the importation some flowers were sent which were gathered from these very plants, and which show a beautiful and exceptionally fine character. From amongst these plants we have flowered two forms, which are excellent. The plants offered are fine specimens, and are furnished with good leads and green leaves.

AËRIDES LAWRENCEANA.

the most magnificent Aërides ever introduced. Professor Reichenbach in the *Gardeners' Chronicle*, October 13, 1883, says:—"A grand and unique Aërides, we may easily describe the inflorescence. A glorious Aërides raceme surpassing a foot's length having flowers nearly as large as A. crispum, but near those of A. odoratum, first with greenish then with white, finally yellowish ground coloured sepals, the petals flushed at the end with fine purple, mid-lacinia excluding basilar side lobules of same purple sending two purple lines to the mouth of the spur." See also *Gardeners' Chronicle*, September 22, 1883, p. 379, in which the Editor says:—"Briefly the plant may be described as the best and most beautiful Aërides ever introduced." The plant described realised when sold, in flower, by auction, 235 guineas.

CYPRIPEDIUM HAYNALDIANUM

A very fine sturdy-growing species. Messrs. Sander & Co. have just received a magnificent batch of plants, which, from the freshness of the leaves and the sturdiness of the growths, bear strong resemblance to well-established plants. We recommend these plants to purchasers as the finest ever offered, and rare and grand varieties may be looked for.

ANGRÆCUM FASTUOSUM.

Absolutely the finest of all the dwarf-growing species of Angræcum. In the *Gardeners' Chronicle*, April 25, 1885, there is a drawing made from a plant in the possession of Sir Trevor Lawrence. The plants offered are good healthy pieces, and are growing in baskets.

EPIDENDRUM MACROCHILUM ALBUM and ROSEUM.

One of the most lovely Orchids extant. The plants offered are in first-rate order. Some of these plants were potted when received by us, and many are now showing flower. A plant in flower will be sold at the Sale.

CATTLEYA VARS. HARDYANA, CHRYSOTOXA, IMPERIALIS.

The last plants received from our collector previous to his departure from the district in which the above lovely varieties have been collected. It is an absolute fact that out of twelve plants which were sold to a gentleman, no fewer than four proved to be Hardyanas. Buyers should certainly take this last opportunity of securing such splendid forms as will surely be found amongst this importation.

CYPRIPEDIUM ROTHSCHILDIANUM.

A new and very beautiful Lady's Slipper. The flowers are handsomely marked with rich brown on a pale yellow ground. The importation is very fine, and embraces many distinct plants.

CATTLEYA SPECIES.

These plants are an early importation from the same district wherein is found Chrysotoxa, Massaiana, Heine's var., &c. The plants are well established in baskets, and are all unflowered. The bulbs and leaves are very distinct in appearance, the latter being long and boat-shaped.

Also a few choice and rare Orchids, including MASDEVALLIA ROLFEANA, the beautiful new species; Sarcopodium Godseffianum, Bollea Lalindei, CYPRIPEDIUM VALONTEANUM, Batemannia Burtii, new Masdevallia, Dendrobium nobile Cooksonii, Phaius tuberculosus, a grand thing; and a rare Orchid, GROBYA AMHERSTIÆ, LÆLIA ANCEPS WILLIAMSIANA, a fine variety; and Cycnoches chlorochilon, in flower. Also a quantity of the beautiful Cypripedium insigne montanum.

On view morning of Sale, and Catalogues had.

Friday Next, September 19.

DENDROBIUM MACCARTHIÆ.

MESSRS. PROTHEROE AND MORRIS will include in the above SALE a grand lot of the beautiful DENDROBIUM MACCARTHIÆ, just received in splendid condition. It is the prized MAY-FLOWER of the Cingalese, its racemes of white rose and crimson flowers, each 3 or 4 inches across, making one of the handsomest Orchids we have. It received a First-class Certificate at the Temple Show of the Royal Horticultural Society in May last.

On view morning of Sale, and Catalogues had.

East Grinstead.
Important to the Trade and Private Buyers.
WELL-GROWN GREENHOUSE and STOVE PLANTS, fit for immediate Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Mont Nursery, East Grinstead, close to the East Grinstead Station, on WEDNESDAY, September 24, at 12 o'Clock precisely, by order of Messrs. Roberts Bros. (in consequence of want of room to house so many plants), 2600 MAIDENHAIR FERNS in 48 and other pots, 600 Tea ROSES of sorts in pots, 200 EUCHARIS, beautiful plants; 2500 BOUVARDIAS of sorts in 20-pots, for Winter Flowering; 2000 CHRYSANTHEMUMS, 1000 TUBEROSES, 500 PTERIS, and other PLANTS, particularly suitable to the Trade and Private Buyers.

May be viewed two days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Husbands Bosworth, near Rugby.
The ENTIRE COLLECTION of STOVE and GREENHOUSE PLANTS, ORCHIDS, &c., by order of Messrs. Gebhardt, the Estate having been sold.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Highcroft, Husbands Bosworth (about a mile from Welford Station, L. and N. W. Ry.), on THURSDAY, September 25, at 12 o'Clock precisely, without reserve, the choice COLLECTION of well-grown STOVE and GREENHOUSE PLANTS, consisting of Dracænas, Gardenias, Crotons, and others; 100 Camellias and Azaleas, Ferns, Palms, Roses, Heaths, 50 Orchids in variety, Lapagerias, Chrysanthemums, and a good assortment of useful WINTER-FLOWERING PLANTS. Also capital WATER-CART, three MOWING MACHINES, WATER-BARROW, &c.

May be viewed two days prior to the Sale. Catalogues may be had of Mr. SHARP, the Head Gardener, on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Richmond, S.W.
Expiration of LEASE, Gasfield Nursery,

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. G. & W. Steell to SELL by AUCTION, on the Premises of the Gasfield Nursery, Richmond, Surrey, on MONDAY, September 29, the First Portion of the extensive and well-grown NURSERY STOCK.

Further Particulars will appear next week.

Acton, W.—By Order of the Executors.
IMPORTANT CLEARANCE SALE of GREENHOUSES, HOT-WATER PIPING, GREENHOUSE PLANTS, &c., by order of the Executors of the late — Emanuel, Esq.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Friars Place Nursery, Acton, W., opposite the Acton Station, Great Western Railway, on TUESDAY, September 30, at 12 o'Clock precisely, without the least reserve, about 15,000 GREENHOUSE PLANTS, including 1000 Marguerites, 1000 Fuchsias, 1000 Poinsettias, 500 Hydrangeas, 100 Aspidistra variegata, 2000 Ferns, 5000 Geraniums of sorts, including Ivy-leaf; 1000 Chrysanthemums, best sorts; 1500 Carnations, 1000 Solanums, in 48-pots; 4 specimen Lapageria alba, 50 Azalea indica alba and Fielder's White, fine plants; 2000 Intermediate Stocks, 5000 Green and Variegated Euonymus, 2000 Aucuba japonica, 3 to 18 inches; 1000 Privet. The erections of twelve capital GREENHOUSES, STAGING, 3000 feet of HOT-WATER PIPING, mostly 4-inch; BRICKWORK, BOILERS, galvanised TANKS, ranges of PITS, 300 casts of FLOWER-POTS, spring VAN, spring CART, and other effects.

May be viewed the Saturday and Monday prior to the Sale. Catalogues may be had on the Premises; of H. C. WILKINS, Esq., Solicitor, Chipping Norton; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Windlesham Nursery, Bagshot, Surrey.
About twenty minutes' walk from Bagshot, and 2½ miles from Sunningdale Railway Stations.

CLEARANCE SALE of exceptionally well-grown NURSERY STOCK growing upon a portion of the Land which has to be given up at Christmas next, by order of Mr. Richard Mason.

Important to the Trade and Large Buyers.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Windlesham Nursery, Bagshot, Surrey, on WEDNESDAY, October 1, and two following days, at 12 o'Clock precisely each day, an extensive quantity of unusually well-grown and thriving NURSERY STOCK, in excellent condition for removal, including 15,000 Portugal Laurels, 1 to 3 feet; 1000 Cupressus Lawsonii, 3 to 3½ feet; 1000 Thuia Lobbii, 2 to 3 feet; 500 do., 4 to 6 feet; 150 Abies Nordmanniana, 3 to 5 feet; 800 Retinospora obtusa, 3 to 3½ feet; 16,000 Retinospora plumosa aurea, 9 to 15 inches, beautifully coloured, suitable for potting, the best in the country; 400 do., 15 to 18 inches; several thousands of other varieties; Tree Box; 500 Golden Yews, 2 feet; 5800 Laurels, of sorts; 50,000 strong Quick; Green Hollies, 2 to 4 feet; 50,000 bedded Green Hollies; 2000 Berberis Darwinii, 1½ to 2 feet; large Forest Trees, 16 to 20 feet; 500 Purple Beech, 8 to 10 feet; 600 Standard Thorns, of sorts; 15,000 Spruce Firs, 2 to 2½ feet; 200 Spruce Firs, 4 to 6 feet; 1000 White Broom, 3 feet; thousands of hybrid and ponticum Rhododendrons, Azaleas, and other American plants; 600 Standard Farleigh Damsons, 1000 Standard Victoria Plums, Apples, and Cherries; Standard Walnuts; 10,000 Berberis aquifolia, 1 to 1½ feet; and other Stock.

May be viewed one day prior to the Sale. Catalogues had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

NOTE.—The Auctioneers invite the attention of intending purchasers to this important Sale, the stock being exceptionally well grown. Purchasers can arrange with Mr. MASON for their Lots to be lifted and conveyed to the Railway Station to be forwarded, at the mere cost of the labour incurred and material used.

Isleworth.
GOLDEN EUONYMUS and SHRUBS for POTS.
Annual Trade Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, by order of Messrs. C. Lee & Son, on the Premises, the Wood Lane Nursery, Isleworth, on TUESDAY, October 7, several thousands of GOLDEN EUONYMUS, and immense quantities of young CONIFERÆ, for potting, specially grown for this Sale.

Catalogues may be had on application.

Sunningdale.—Without Reserve.
SIX DAYS' ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. C. Noble, who has received from St. John's College, Cambridge, peremptory notice to quit all lands held under them at Christmas next.

Important to Noblemen, Gentlemen, Builders, Fruit Growers, Nurserymen, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, close to the Sunningdale Railway Station, on MONDAY, October 6, and five following days, at 12 o'Clock precisely each day, without reserve, several acres of beautifully grown NURSERY STOCK, carefully prepared for removal, and including 25,000 Rhododendrons, 1 to 4 feet, consisting of named kinds, hybrid seedlings, ponticum, and others all in first-class condition for removal, many thousands of Andromedas, Kalmias, Azaleas and Ericas; 30,000 Laurels, of sorts, 1 to 5 feet; 3000 Portugal Laurels, 4000 Thuia Lobbii, 3 to 5 feet, splendid trees, all lately transplanted and suitable for hedges; 12,000 Thuia americana, 1 to 4 feet; 10,000 Cupressus Lawsonii, 1 to 5 feet; 10,000 Oval-leaved Privet, 1 to 4 feet; 2500 Berberis Darwinii, 1 to 2½ feet; 1000 Green Hollies, 1 to 2 feet, just transplanted. Several thousands of Abies Douglasii, Thuiopsis borealis, Retinosporas, in variety; Austrian Firs, and many others, 4 to 9 feet; very large quantities of Ornamental Trees, adapted for Street, Park, and Avenue Planting, such as Limes, Scarlet Chestnuts, Poplars, Elms, Laburnums, Thorns, and others; 10,000 Spruce, Scotch, Austrian, and other Firs, 1 to 2½ feet; 12,000 Standard and Pyramid Fruit Trees; including 2000 Pyramid Pears, 3 to 7 feet; Fruiting Trees of the best leading kinds; Standard and Pyramid Apples, Cherries, Plums and Damsons. Several thousands of Gooseberries; 2000 Webb's Cob Nuts, 1½ to 5 feet; 2500 Fruiting Berberis, 1 to 4 feet; 1000 Purple Berberis, 1 to 4 feet; 2500 Mahonia aquifolia, 9 to 18 inches. Ornamental and Border Shrubs, in great variety; Ivies, Hypericums, and other plants suitable for growing under trees; also a good collection of Flowering Shrubs, comprising Lilacs, Guelder Roses, Syringas, Deutzias, &c.

Luncheon will be provided for intending Purchasers, and arrangements can be made with Mr. Noble to lift and forward any Lots to all parts of the Kingdom at the cost of labour incurred and material used.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Important Notice.

MESSRS. PROTHEROE AND MORRIS have PERMANENT LISTS for their various SALES, to which they are glad to add names at any time for a regular supply of Catalogues, on learning the nature of the requirements of intending purchasers.

These Lists are compiled at an expenditure of great labour, and with these facilities, together with the advantages of advertising in their Public Sale Rooms (which are so largely attended by all classes of purchasers), they are enabled to give exceptional publicity to all Sales entrusted to them.

Forthcoming Sales of Nursery Stock.
Important to Noblemen, Gentlemen, Nurserymen, Landscape Gardeners, and others contemplating planting during the coming season.

MESSRS. PROTHEROE AND MORRIS respectfully give notice that they have been instructed to conduct the following SALES of NURSERY STOCK, in addition to those announced in to-day's Paper:—

OCTOBER 13, 14, 15, and 16.—At the NURSERIES, CART-HORSE LANE, WOKING, by order of Mr. R. Collyer, four days' Sale.

OCTOBER 20 and 21.—At the PILTDOWN NURSERIES, MARESFIELD, near UCKFIELD, by order of Louisa, Lady Shelley, the remaining NURSERY STOCK, the Land having been let.

OCTOBER 20, 21, 22, and 23—At the AMERICAN NURSERIES, LEYTONSTONE, absolute CLEARANCE SALE of the first portion of the EXTENSIVE STOCK.

OCTOBER 22.—At the ST. MARTIN'S NURSERY, CANTERBURY, by order of Mr. J. Kennett. First portion.

OCTOBER 23.—At the BEDFORD ROAD NURSERIES, NORTHAMPTON, by order of Messrs. Denton & Blunden.

OCTOBER 27.—At the NURSERY, CLIFFE, near ROCHESTER, ANNUAL SALE of FRUIT TREES, grown specially for the Auction, by order of Mr. W. Horne.

NOVEMBER 3, 4, 5, and 6.—At the celebrated AMERICAN NURSERIES, BAGSHOT, by order of Messrs. John Waterer & Sons. Four days' Sale.

NOVEMBER 4.—At the HALE FARM NURSERIES, TOTTENHAM, by order of Mr. T. S. Ware. Annual Sale.

NOVEMBER 10, 11, 12, 13, 14, and 15.—At the EXETER NURSERIES, EXETER, absolute CLEARANCE SALE, six days, by order of Messrs. Lucombe, Pince & Co., who are relinquishing the business.

NOVEMBER 17, 18, and 19.—At the AMERICAN NURSERIES, LEYTONSTONE, unreserved CLEARANCE SALE of the second portion of the EXTENSIVE STOCK.

IN OCTOBER.—At the NURSERIES, GROOMBRIDGE, by order of Mr. E. Hollamby. Two days' Sale.

Other Sales are in course of arrangement, and will be duly announced.

Intending Purchasers of Nursery Stock during the coming season will find these Sales an excellent medium for securing well-grown Stock, and the Auctioneers will be pleased to forward a regular supply of CATALOGUES on application.

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On view mornings of Sale, and Catalogues had.

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situated in St. Lawrence Valley, about 2 miles distance from St. Helier's, formerly the property of Edward Pond, Esq.

The said property, consisting of DWELLING-HOUSE, COTTAGES, STABLES, COACH-HOUSE, about 3000 feet long of GREENHOUSES, HOT-HOUSES, PACKING-HOUSE, FRUIT TREES in full bearing, the whole measuring 11 vergées, 4 perches, 21 feet (5 acres), facing south.

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TO LET, a well-established NURSERY, about 12 acres in extent, well stocked and in fine condition, situated near a large city.—Full particulars on application to A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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OF
HOME-GROWN HARDY FRUITS
IN THE
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OCTOBER 6, 7, and 8, 1890.

THE WORSHIPFUL COMPANY OF FRUITERERS being desirous of Promoting the Cultivation of **USEFUL HARDY FRUITS** in the **HOMESTEADS** and **COTTAGE GARDENS** of Great Britain, have organised an Exhibition to be held as above, when they will offer for competition:—

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The above Prizes will be offered for Exhibits of Fruit by COTTAGERS, TENANT FARMERS, AMATEURS, and GARDENERS in three geographical divisions in England and Wales.

The Framed Certificates of the Company will be given for exhibits by Trade Growers and Nurserymen.

Prizes will also be offered for exhibits of Jams and Preserves by Manufacturers, and also, in a separate class, for home-made Jams and Preserves.

It is hoped that all who are interested in Fruit Culture will make this Exhibition known in their districts.

For Schedules and all other particulars, apply to the Clerk to the Company,

Mr. O. C. T. EAGLETON,

40, Chancery Lane, London, W.C.

District of Wallasey.

TO LANDSCAPE GARDENERS, &c.

THE WALLASEY LOCAL BOARD invite COMPETITIVE DESIGNS for the LAYING-OUT of the LISCARD HALL ESTATE as a Public Park, Pleasure and Recreation Grounds, for which Designs they offer the following premiums, viz.:—

First Premium, 30 guineas.
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Third Premium, 10 guineas.

The three Selected Plans to be the property of the Board.

Competitors may obtain Conditions and a Plan of the Ground from Mr. A. Salmon, the surveyor to the Board, Public Offices, Egremont, Cheshire, on depositing a sum of two guineas, which sum will be returned on receipt of a *bonâ fide* design. All designs to be addressed to "The Chairman of the Board," and endorsed "Designs Liscard Hall," to be left at my Office as below, not later than 5 o'Clock in the afternoon of TUESDAY, the 30th instant.—By order,

WM. VICKERS, Clerk to the Board.

Public Offices, Egremont, Cheshire.—September 4, 1890.

Royal Parks.—Grass Seeds.

THE COMMISSIONERS of Her Majesty's Works, &c., are prepared to RECEIVE TENDERS for the SUPPLY of GRASS SEEDS, for use in the Royal Parks, &c., during the year 1891. Forms of Tender, containing full particulars, may be obtained at this Office, any day excepting Saturday, between the hours of 12 and 3.

Tenders are to be delivered before 12 o'Clock noon, on FRIDAY, the 26th of September, addressed to "The Secretary, Her Majesty's Works, &c., 12, Whitehall Place, London, S.W.," and endorsed "Tender for Grass Seeds, Royal Parks, &c."

The Commissioners do not bind themselves to accept the lowest or any Tender.

H. W. PRIMROSE, Secretary.

H.M. Office of Works, &c., 12, Whitehall Place, S.W.
September 3, 1890.

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As a Supplement
TO THE
GARDENERS' CHRONICLE
FOR
Next Week, September 20,
WILL BE
Published an Illustration
SHOWING
VIEWS IN THE GARDEN,
STONELEIGH ABBEY.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 13, 1890.

LANDSCAPE GARDENING.*

THIS is a handsomely got-up quarto volume, the contents of which have much interest for a large section of our readers. In successive chapters, Mr. Milner deals with the site, and the approach to the mansion, the terrace garden, the formation of the garden proper, the planting, the disposition of water, the construction of fountains, the designing of hot-houses, and other garden structures, the laying out of kitchen gardens, parks, and cemeteries, and the economic treatment of land for building purposes. These several chapters are prefaced by an introduction, and supplemented by the record of practical examples Each and all these subjects offer abundant scope for the reviewer. The work indeed merits detailed examination, and offers material for manifold comment, but we must content ourselves by giving the reader a general idea of the nature of the work, together with a few comments that have suggested themselves to us in perusing it.

Mr. Milner is a direct inheritor of the traditions of Paxton. Together with his father, and lately by himself, he has designed and carried out a very large number of fine works in this country and abroad, so that his experience is in many ways exceptional. The introduction, in which the author lays down the principles that have actuated him in his work, will therefore be read with special interest.

Mr. Milner at first shrinks from defining his art since "conceptions of beauty are varied and ever varying," and art, in his opinion, appeals more to the feelings and the emotions than to the reason. This may be true, but it is so only to a limited extent; genius is born, and cannot be made to order by any scheme of education nor by any amount of practical experience. But for all that, the man of genius works upon certain principles, and those principles are the same for him as for his less gifted fellow-labourers. If this be so, and we think it is so beyond dispute, a

* *The Art and Practice of Landscape Gardening*, by Henry Ernest Milner. (Simpkin, Marshall & Co.) 4to, pp. 116 with numerous illustrations.

careful study of those common principles must be of prime importance to any one who would succeed in his art. The superiority of the man of genius consists in the power he has, more or less unconsciously to himself it may be, of applying these principles to practice. In either case, therefore, whether from the point of abstract beauty, or from that of practical realisation, a study of first principles is essential. If we are to depend upon emotion and intuitive convictions only, we may admire and appreciate, but we shall be in no position to imitate, still less to construct. An architect, to adopt Mr. Milner's illustration, may rear a temple or a cathedral, which shall create a feeling of awe that compels an ignorant or a careless man to speak in a whisper, but he has no call made upon him to attempt anything of like kind. The man of intelligence is awe-struck at the sight—say, of the west front of Rheims, or the panorama from the Corner Grat, equally with his ignorant or careless brother, but he has the inestimable advantage of being able to appreciate to some extent—it may be little—the reasons why he is so impressed; whilst, of course, the expert architect, geologist, or painter is happy beyond measure in the fuller knowledge and exemplifications of principles which the objects present. So, then, the landscape gardener ought not, in our opinion, to trust to the mere feeling of emotion that beauty excites, but should so regulate his procedure that the principles, though not obtruded, should everywhere be recognisable by the intelligent spectator, and still more so by the expert. "If we endeavour," says Mr. Milner, at length grappling with the irresistible, "to define the art of landscape gardening, it may be stated as the taking true cognisance of Nature's means for the expression of beauty, and so disposing those means artistically as to co-operate for our delight in given conditions."

Mr. Milner's definition appears to us to be incomplete in that it does not take into account the purpose, the meaning, the significance, the history of that beauty which Nature, to adopt a mode of speech more convenient than accurate, takes means to express.

Absolute beauty is an ideality. What we see in Nature is a result, a consequence, an adaptation to numberless circumstances past and present. If the landscape gardener, or any other artist, should attempt to realise his conception of absolute beauty, he would assuredly fail; his only chance of success lies in adapting, so far as circumstances permit him to do so, his principles to conditions of locality and circumstances. A plan may satisfy the eye of taste and give pleasure to the spectator, but it by no means follows that the execution of that plan on the ground will give equal satisfaction—probably it will not. A plane surface is one thing, and a uniform condition of lighting is another, but both are widely different from the manifold and ever varying conditions of the garden; and this brings us to one of the leading principles of landscape gardening—the beauty of appropriateness. We speak of the geometrical style, or the picturesque style. According to the fashion of the day, or our whims, we say we prefer symmetrical style, or when the taste sets in the opposite direction we become admirers of the natural style, the truth being that each has its advantages under particular circumstances, and it is as absurd to plant a wilderness-walk or a wild garden on an architectural terrace garden as it is to set out geometrical flower-beds in the midst of a wood. Adaptation to locality and circumstances is the true line to follow. Make the best of the conditions that are at hand, emphasise all prominent characteristics that it is desirable to call attention to, shut out or conceal objectionable features; use art to produce a sense of distance, of breadth and repose, to furnish a standard of measurement where necessary, to divert the eye from what is unpleasing, to attract it to what is beautiful.

Landscape gardening is a practical art, and as such must, in spite of Mr. Milner's dictum, be regulated by fixed principles. It may be futile, as Mr. Milner says, to attempt to completely systematise the ever-varying yet constant manifestations of beauty that we encounter in the vast fields of Nature's operations. Futile, indeed, to suppose that we can ever completely attain such an aim; but it is not futile, but in the highest degree profitable, and ever increasingly advantageous, to do so, according to the measure of our capacity and the limitations of circumstances. Mr. Milner's practice is better than his creed—Nature, he says, is the great exemplar that he follows.

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

THREE NEW HYBRID CYPRIPEDIUMS.

IT is a rare event for three new species or hybrids of the same genus to flower simultaneously for the first time in one collection, yet this has been the case with the three novelties described below, which have been raised by Mr. A. J. Keeling, gardener to Mr. Drewett O. Drewett, of Riding Mill-on-Tyne, from whose collection several very interesting hybrids of this genus have emanated. These three were exhibited at the Royal Horticultural Society on August 26 last, as noted on p. 252 of this volume, although by some error the name of one is misprinted C. Arthur instead of C. Alfred. All of them are distinct-looking plants; C. Alice and C. Constance have pale-coloured flowers, but there is a clean look about them that is rather pleasing to my eye, both have two-flowered scapes, whilst C. Alfred produced but one flower, but doubtless will become two or more flowered as the plant strengthens; this is decidedly a pretty form, more brightly and deeply coloured than the other two, having broader and rather richly coloured petals, and a lip like that of C. venustum, but without the warts on the inflexed sides.

CYPRIPEDIUM "ALFRED," *N. E. Br.* (*new hybrid*).

This was raised from the seeds of C. venustum, fertilised with the pollen of philippinense (C. lævigatum). It is a rather distinct-looking plant, and decidedly intermediate in character between its parents. The leaves are 7 to 8 inches long and about 1½ to 1¾ inch broad, oblong, rather obtuse, of the same bright green, with pale nerves, as in C. philippinense, and hieroglyphic markings of a darker green that are not very conspicuous; the surface is minutely papillate, as in C. venustum; the underside is dull green, dusted with dull purple, which is also a character of C. venustum. The scape is 5 to 6 inches long, purple and hairy, one-flowered in the present instance, but a moderately-developed second bract indicates that on a stronger plant it will be two or more flowered. Bract an inch long, green, smooth, with a ciliate-acute keel. Ovary 2½ inches long, purple, hairy. Upper and lower sepals rather like those of C. philippinense, but not so thick, and with rather more nerves, ovate-acute; the upper one flat, with the apex slightly curving forwards, white with a pale greenish base, and brownish-green on brownish-purple nerves, and with a faint indication of an arched transverse band across the lower part; the lower sepal slightly concave, white with brownish-green or brownish-purple nerves. Petals 3 inches long, ½ to ⅝ inch broad, strap-shaped, acute, drooping, and twisted half round at the middle, the basal part yellowish with green nerves, and spotted with purple, the apical half entirely purple, both margins ciliate with purple hairs. The lip is very similar to that of C. venustum, of the same light bronzy-green with a darker network of veins; the inflexed sides are shining and yellowish without markings. Staminode as broad as long, very convex, with a shallow groove down the middle, and in front with a tooth on each side that rests on the inflexed sides of the lips, yellowish, reticulated with dark green, and pubescent with purple hairs. *N. E. Brown.*

CYPRIPEDIUM ALICE, *N. E. Br.* (*new hybrid*).

This novelty was raised from C. Stonei, fertilised by C. Spicerianum. The leaves are 15 to 16 inches long and about 1¼ inches broad, bright shining green, with very indistinct darker nerves and cross veins, the under-surface of an uniform paler green. Scape 6 inches or more long, purplish-green, sparsely covered with short hairs, two-flowered. Bracts rather open, 1 to 1½ inches long, nearly glabrous pale-green, tinged and nerved with purple. Ovary 2½ to 3 inches long, glabrous, purple, or greenish-purple. Upper sepal 1½ inches long and nearly as broad, elliptic acute, the sides reflexed almost from the middle, and their edges nearly or quite meeting at the back, white with a very delicate mauve-pink tinge, and a mauve-purple middle line; the back is suffused with mauve-purple, the base being light yellow. Lower sepal ovate-acute, the sides rolled back and embracing the ovary, white on both sides, with the base light yellow on the back. Petals about 3½ inches long, ⅛ inch long, linear-falcate, acuminate, twisted, with undulate margins, the lower border being strongly revolute, yellow at the base, passing into greenish-yellow towards the apex, and densely dotted with purple-brown along the upper nerves and mid-line, and more sparingly along the lower nerves. Lips like that of C. Stonei in shape, with a very shallow groove beneath, purplish, with the basal part and narrow inflexed sides yellowish. Staminode broadly trapezoid with a central point, convex, white, pubescent at the base and sides with purple hairs. *N. E. Brown.*

CYPRIPEDIUM CONSTANCE, *N. E. Br.* (*new hybrid*).

A pale-coloured hybrid, between C. Curtisii (male) and C. Stonei (female). The leaves are a foot or more long, and about 2 inches broad, green, with the nerves and irregular bars formed by the cross-veins of a darker green, but the mottling is not very pronounced, although quite distinct; the under-surface is of an uniform lighter green. The scape is about 9 inches long, rather stout, purple, hairy, two-flowered. Bract about 1¼ inch long, acute, glabrous, with ciliate keel, light green, suffused with purple at the base, and with purple nerves. Ovary 2¼ to 3 inches long, purple, sparsely covered with very short hairs. Both sepals ovate-acute, with recurving sides, milk-white, tinged with pale purple, and with slender purple nerves on the face, the back being of a somewhat ochreous colour, suffused with purple, and with purple nerves, slightly shining, and minutely pubescent. The petals are 3 to 3½ inches long, and nearly ½ inch broad; falcate, acuminate, slightly twisted, of a delicate pale yellowish, covered, except just at the base on the lower side, with very numerous small purple-brown spots, that show through on the back, both margins ciliate, with dark purple-brown hairs. The lip is very like that of C. Stonei in shape, with the margin of the mouth nearly truncate, and scarcely grooved beneath, pale purple, the narrow inflexed sides being cream-coloured, with a few light purple spots. Staminode quadrate-obcordate, very convex, three-toothed in front, the side-teeth turned in towards each other; uniformly pale yellow, and softly pubescent, with colourless hairs. *N. E. Brown.*

THE BRIXTON, STREATHAM, AND CLAPHAM HORTICULTURAL SOCIETY will hold its thirty-first annual exhibition of Chrysanthemums, at Streatham Town Hall, on Tuesday and Wednesday, November 4 and 5, 1890. Mr. John Salter is the Secretary.

FERTILISATION WITHOUT POLLEN.

With reference to the "Parthenogenesis" discovered in Ficus Roxburghii by Dr. Cunningham, notice of which was taken in the *Gardeners' Chronicle* of August 23, 1890, p. 218, it is not stated how the insect gets access to the interior of the receptacular cavity of the Fig. Presumably the pollen-grains are smaller than the insect, and in the same way that the latter gets in, the former might perhaps get in with it.

In any case, if what is asserted by Dr. Cunningham turns out to be true, it will be another instance of Parthenogenesis, or seeding without pollen, in addition to that already known in Cœlœbogyne, and conjectured to occur in Lilium and others. Who knows how many other cases of seeding without pollination may yet turn up. We are too apt to take it for granted that, because pollen is applied to the stigmatic surface, therefore every germinable seed has been directly pollinated.

Professor Henslow in his *Structure of Flowers*, p. 115, refers to some of Mr. O'Brien's experiments on Orchids, who says that, "By placing small pieces of grit on the stigma, I found that the ovaries would swell in many cases, just as though the flower had been properly fertilised by pollen. This same result often takes place in Orchid flowers under cultivation, and seed-vessels are obtained of full size, but, of course, with no vitality in the grains within."

At p. 170, Professor Henslow refers also to some experiments of Max Wichura in hybridising Willows. All grades of growth of the ovary and ovules have been obtained in these experiments by the application of pollen to the stigma, viz., from the swelling of the ovary alone, without any of its seeds being fertile, up to ripening of the ovary filled with numerous and fertile seeds. Moreover, although some seeds germinated, they were weak, and soon died.

In my experiments in hybridising Hippeastrums, I have experienced exactly the same results, and probably every one who has made similar experiments on plants has obtained similar results.

At p. 171, Professor Henslow refers to an interesting discovery which M. Treub accidentally made. It is analogous to that discovered by Dr. Cunningham. Treub found a larva in the ovary of Liparis latifolia. It did not injure either the ovules or the ovary, but seemed to feed on the juice secreted by the ovarian cavity. In this cavity, without the aid of pollen, the ovules developed and became covered with seed coats, as if under the influence of pollination. The irritation of the larva determined the same results as the pollen tubes would, that is the development of the ovules.

In spite of the high sounding name (Parthenogenesis), which has been invented for the development of ovules into seeds without pollination, I take the phenomenon to point to the conclusion that ovules are merely dormant buds, which can be started into growth, either by the pollen tube, or by the irritation or stimulus of insects, or perhaps by any other means which attract nourishment into the ovules, and change them from dormant into growing buds. Like all living tissues, they are sensitive, and being so intimately connected with the placental margins of the carpels, they would naturally partake of the stimulation which starts the ovary, and eventually develop either into simple buds (parthenogenitic seeds), or hybridised and variable seeds.

It is not impossible that as the application of pollen to the stigmatic surface often starts the ovary into growth, before any of the ovules are fertilised, the pollen tubes, although they grow, may be prevented from reaching all the ovules, owing to the simultaneous lengthening of the stigmatic surface at the summit of the ovary. For instance, Glaucium flavum (Papaver), has an ovary about an inch long. When fertilised, it begins to lengthen, and ultimately attains the length of about 9 inches or so. So that as the pollen tubes lengthen to reach the ovules, the lengthening of the ovary distances the stigma where the pollen is, and so tends to draw the tubes away from the ovules. It appears to be a race in this case between the pollen tubes lengthening in the one direction, and the ovary axis lengthening in the opposite direction, and so dragging the tubes away. This being apparently the state of things, it is not impossible that although the tubes may succeed in fertilising some of the ovules, other ovules may be started into growth and development, as simple marginal buds of the carpels by mere irritation. These would be the parthogenetic ones, those the directly fertilised ones.

Then, taking all these experiments and observations into consideration, it would seem legitimate to infer that the ovule is a bud, which, under certain circumstances, will develop into a seed without being fertilised directly by pollen, and when this germinates, it will give a plant, which does not differ from the parent plant, any more than that developed from an axillary bud or bulbil. On the other hand, the ovules, which have received directly the contents of the pollen tube is liable to produce a plant that will vary from the parent type more or less in accordance with the more or less distinctness of the varieties, from which the pollen and the ovule have come.

For all we know to the contrary, some of the seeds in the same capsule or pod may often be the result of direct pollination, and some only developed without pollination. This might be the reason why, in certain plants, so many of the seedlings turn out true, that is like the parent type, while others give variable seedlings. The true ones may be only seed-buds, while those that vary may be the directly fertilised ones.

I have conjecturally maintained the homology of the seed-bud with the axillary bud, and the marginal buds of the Bryophyllum leaf in the *Oranges and Lemons of India*, pp. 195 and 213, and I see no reason to disbelieve in it now. On the contrary, from an evolutionary point of view, I do not see how it can be anything else.

I am aware that "Strasburger" asserts that the embryonal vesicle perishes, and a parthogenetic bud takes its place, and becomes, to all appearance, a seed physically indistinguishable from that which the embryonal vesicle would have produced. But this is very much as if one were to say, that the stem resulting from an axillary bud is not a stem, because it came from a bud, and that it is a mistake to suppose that Vines and Potatos, grown from eyes, have any stem at all!

We may try to get rid of the homology between the seed-bud and the axillary bud by calling the unfertilised seed parthenogenetic or adventive, and that in such cases the embryo is an outgrowth of the cellular tissue of the body of the nucellus, outside the embryo sac. The same thing often happens in axillary buds. The main bud perishes, and a side-bud, or bud of the bud, takes its place. By the above, one would be led to infer that the parthenogenitic seed is a bud of the embryo sac, which would appear to be a round-about way of saying that the embryo and its bud are the same thing.

It was the fact of a female plant of Cœlœbogyne producing germinable seeds, without the male plant, the latter not being in the country, which first raised the suspicion that for the production of seed, pollen was not a *sine quâ non*. Asa Gray thus explained the circumstance that crossings between Lilium auratum and L. speciosum so often resulted in seeds, which only repeated the type of the parent seed plant. The ovules were probably not pollinated at all, except in the case of that of Lilium Parkmanni, but were only started into growth as ordinary bulbils by the irritation or influence of the pollen-tubes, and not by mixture of their contents with those of the ovules.

Now we learn that the irritation caused by the Fig insect is enough to set the ovules or seed-buds a-growing. We have been all along thinking that this pollen was of all importance for the growth of a new generation through the seed, and perhaps before long we shall be thinking that half the seeds of Nature are not much more than root-buds, stolons, axillary and other buds.

The buds on the margin of the Bryophyllum leaf, and the buds which appear instead of seeds in several viviparous grasses, such as Poa alpina, Poa stricta, and others, I think are sufficient adumbrations of what the real nature of the ovule is, however we may try to obfuscate our mental vision by fine names.

According to my view, then, the action of pollen applied to the stigma would be of two kinds:—

(*a*). When the pollen grain emits a tube, which enters the ovule, and mixes its contents with those of the ovule. This would be a crossed or hybridised ovule, and its seed would give a plant that would vary from the mother type.

(*b*). When the pollen grains, either by hybridising some ovules, start others into growth without hybridising the latter, or by starting the carpels and with them the ovules, which are in placental connection with those carpels, without hybridising any of the ovules. This would be analogous to starting the ovules into growth by the irritation of insects.

Further observations and experiments are needed to establish all this, or to upset it. *E. Bonavia, M.D., September 2.*

IMPROVED PETUNIAS.

When at Oxford recently, I was much interested in some experiments made by Mr. J. E. Jefferies, seedsman, of that city, with a view of improving both the habit of growth, and size and form of the flowers of the single and double Petunias. Thirty years ago or so, single Petunias were worthy the name of florists' flowers, and named varieties were as common as named Carnations in our day. The Petunia declined as an exhibition and decorative plant under pot culture; it was relegated to the flower garden, and then it seemed as if anything was good enough for a bedding plant, and this once-popular flower fell into the background, and was little regarded. Meanwhile, improved double varieties had put in appearance, and when these suffered the same fate as the single varieties, growers turned to the Continent for seed. Gigantic flowers, however ill-shapen, became popular; and there was an exceedingly rank and coarse growth also. What are known in these days as high-class strains of Petunias are, in many instances, so gross and uncouth that the Petunia finds little favour with gardeners generally.

It occurred to Mr. Jefferies that there is ample room for improvements, and that it was desirable some attempts should be made in this direction. He operated on some plants of compact growth bearing flowers of the best shape, both double and single, with the result that he has obtained types that recall the florist's ideal of a generation ago. Mr. Jefferies effects his crosses on plants grown on the window-sills of his residence in one of the main streets of Oxford. The pots in which the plants are growing are plunged to their rims in window-boxes of soil, and every cross is carefully recorded. Every attempt of this kind is made with some definite purpose in view, and as soon as impregnation of flowers has taken place, the pollen-bearing parts are removed. Mr. Jefferies has been at work for a few years, and at the Botanic Gardens of the University there can be seen a large collection of seedling Petunias under the care of the Curator, Mr. William Baker. There is a compactness of habit in all the types—they are free branching, and remarkably prolific of bloom. Both the single and double varieties are noticeable for the fine form of the flowers, and the handsome, striped character of many of the former. Mr. Jefferies has been labouring to secure tints of blue, and with considerable success. The double-flowered varieties have medium-sized, fully double, and very symmetrical blossoms, on compact-habited plants, and they are quite up to the properties required by the florist. A very dwarf, compact, and small-leaved strain deserves notice. It grows about 9 inches in height, and plants in pots bloom with remarkable freedom. For bedding-

purposes this is well adapted, and it would make an excellent edging to the taller-growing forms.

Mr. Baker attaches great importance to these improved Petunias obtained by Mr. Jefferies. He has over 100 plants in pots, and they can be seen at the Botanic Gardens by any one interested in the improvement of Petunias. *R. D.*

NOTES OF AN OBSERVER.

In many districts, very wide apart, the same disappointment among all classes of cultivators appears to be very general regarding the fruit crop, and in many parts north of the midlands of England, the finer kinds of vegetables and flower gardening have suffered, though we have no reason to complain of the crop of some kinds of fruits; others which promised so well at one time, are scarce, and not likely to ripen well—these are Pears, Plums, and Apricots. Apples, by the continued damp and sunless weather, are likely to be small and late, and will not (I fear) keep well. If growths are gross, and shading the



Fig. 49.—First attempt—at 10 years of age.

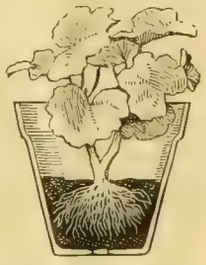


Fig. 50.—Finds the right end—at 12 years.





Fig. 51.—Wet feet—15 years. Fig. 52.—Dry feet—16 years.

fruits unduly, they should be shortened. Where due attention has been given in selecting Apples suitable to the district, and of a hardy free-bearing nature, good crops of them may be seen; but where the trees have been allowed to root deeply into cold soil, the Apple crop has suffered proportionately. Such is not experienced in northern parts only, but also in the more favoured districts of England. In the early part of July, I visited gardens in the east, south, and west of England, and the scarcity of Apples and Pears was very remarkable. I observed, however, where systematic root-pruning is practised, fair crops were to be seen (and some kinds were in great abundance). Around Cambridge, part of Herts and Essex, the scanty crops were on a par; but some compensation, in the shape of extra fine Roses, was given to lovers of flowers? In the Valley of the Thames, I was driven for miles past orchards which seemed almost destitute of fruit, and many of them so crowded and neglected, that only in fine seasons can wood be matured and prepared for fruiting the following year. Travelling westward by Oxford and Worcester, crops were very partial, and only to be seen on the kinds which seldom fail.

The lesson to be learned is this, plant selections of such sorts, and reduce collections to a minimum. We noticed in the fine collections of Apples in the Fulham fruit tree nurseries of Messrs. Veitch & Sons, the popular hardy kinds studded on young trees, notably Seaton House, which is the most certain fruiting Apple I know of.

In the highly cultivated fruit and vegetable gardens at Stoke Prior Reformatory (about 75 acres are under high class management near Bromsgrove), much is worthy of note in support of the "selection" principle.

Though many of the standard bush and pyramid trees of Apples and Pears are without fruit, there are those which are loaded, and the trees in the best of health. Among Pears, in particular, I saw a plot of trees, kept on the dwarf side, which were bearing most promising crops; they had been well root-pruned under the trunks, thus inducing the roots to search for food upwards, and keeping clear of inert and unwholesome subsoil. The kinds under heavy crops were Williams' Bon Chrétien, Louise Bonne of Jersey, and the hardy old Hessel—certainly not a despicable kind in untoward seasons.

This fruit farm was often a source of much pleasure to our late respected friend, Archdeacon Lea, at Droitwich, who did so much to advance fruit-farming for the benefit of the people. Nuts were a fine crop at Stoke Prior. Black Currants, on bushes kept thin



Fig. 53.—Honest measure—17 years.

of wood, were good. President Strawberry was doing good service; Sir J. Paxton (a most suitable kind for packing) was thin in crop. Raspberries were good and abundant, but unequal to the fine crops of large fruit at Blenheim Gardens, which were first-rate. Small fruits at that splendid establishment were receiving skilful attention; as well as the vast erections filled with Orchids and other plants.

Plums at Stoke Prior are a failure this season, and the loss of money thereby to the Reformatory School must be a heavy one; for example, the quantity in 1886 sent to markets was about 80 tons. Much might be profitably written regarding this most creditable establishment, which is so highly reported for masterly management by Her Majesty's Deputy-Inspector, reflecting great credit on Mr. McGilchrist (Superintendent) and his efficient officers. *Visitor.*

POTTING.

How Not to Do It, and How to Do It.

We take the accompanying series of illustrations, figs. 49 to 57, of the art of potting as practised in various ages from our cotemporary, the *American Garden*. They show how things can be done, how they often are done, and how they may be better accomplished. But the cuts tell their own tale, it would be a pity to blunt the point of the humour by any elaborate description.

NURSERY NOTES.

MESSRS. SUTTON and SONS, READING.

Travellers from London by the Great Western Railway, in passing the town of Reading, in the summer, will have noticed the fine floral display on nearing the railway station. This proceeds from the trial patches on land belonging to the above firm of seedsmen and nurserymen, and which cover an area of about 50 acres. The brightest display is that produced by the annuals, which are here grown to much perfection, and in but few places in the country is it possible to see such fine effects as are obtained by masses of these hardy flowers.

A bed of mixed giant Poppies, comprising almost every shade of colour, made a very fine show, and was an example for the gardener to follow. Borders of considerable breadth of dwarf-habited Nasturtiums of the dark crimson variety, Empress of India, with a brilliant yellow variety in the centre, told with

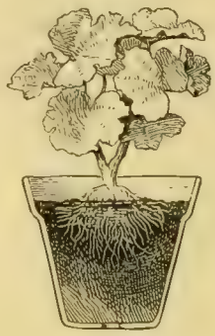


Fig. 54.—Penurious—18 years.



Fig. 55.—In a hurry—19 years.





Fig. 56.—Careless—20 years.

Fig. 57.—In business for himself—21 years.

great effect. In another part was a bed or two of the now well-known dwarf Godetias, Duchess of Albany and Lady Albemarle—plants that are much dwarfer and compacter than any of the old varieties, and produce white and scarlet flowers in quantity, and form a very striking feature when seen growing side by side. The dwarf or Candelabra Larkspurs make a very pretty show, the delicate colours of some of the varieties showing well when grown in contrasting lines. Sweet Peas are a specialty here, and of all the new varieties now on trial they will only send out to their customers those which they have found to be of a sufficiently fixed type, and have good points in size or colour, in addition to merely a new name. One bed of mixed Sweet Peas has made a grand show earlier in the summer, and the scent has been so powerful as to be quite apparent on a fine day from the railway train. Clarkias, grown in large masses, make a very effective display. Those two new varieties lately introduced by the firm—Dwarf Double White, and Dwarf Double Crimson—are great improvements on the older sorts; not only are they more compact in habit, but bloom much more

freely, and the flowers are more double than we have ever seen Clarkias before.

A bed of the new Cloth of Gold Nasturtium showed what a valuable variety it is, with its bright yellow leaves and scarlet flowers. The plant will last in good condition until cut by autumn frosts. Eschscholtzias too are now in full beauty, and by far the best variety is Mandarin, followed perhaps by Rose Cardinal. Leptosiphon made a pretty show, the dwarf varieties especially, which deserve to be grown much more than at present for beds and borders. I noticed several other plants which are well worth a place in every garden, not for bedding but for mixed borders. I refer specially to such as a variety of Linaria, named reticulata aurea purpurea, with its large heads of yellow and maroon flowers, the contrasts of colour being very effective, an excellent plant for town gardens; Chelone barbata, an old hardy perennial plant, with long spikes of scarlet Pentstemon-like blooms; Gaura Lindheimeri, Glaucium luteum, and the red, white, and yellow Hawkweed (Coreopsis), which are as useful for bouquets at this time of year as the most costly hot-house plants in the winter, and quite as beautiful. Moreover, the plants named have this special advantage—they can be possessed by those having the most slender purses.

Two other flowers which attracted my attention, are that charming Sunflower, Sutton's Primrose Perfection, with its dark centre and pale primrose-coloured petals, and the Shirley Poppy, which is now so deservedly popular. Messrs. Sutton's selection of the latter flower was one of the finest I have seen, embracing a remarkable variety of colours, from pure white to rich deep scarlet, and an immense number of delicate pink edged with white. This Poppy does equally well sown in the spring or autumn, and if sown now would make one of the prettiest beds in a garden, coming into flower as soon as the Hyacinths are going by.

The trial ground in the London Road is not the only sight Messrs. Sutton have to show to their visitors. Besides their premises in the centre of the town, which are well worth a visit to Reading for those who have not been over them, there are the Portland Road seed grounds, where seed of Chinese Primula, Gloxinia, Begonia, Calceolaria, &c., are raised. The numerous glasshouses were filled with a wonderful display of Gloxinias and Begonias, which were just then in perfection, all growing for seed.

A whole morning might well be spent with the Gloxinias alone, comparing the new varieties and their colours, the result of the careful system of crossing pursued. Besides the crassifolia type—for which the firm have been so long noted—with their large bold flowers, rich colours, and broad dark-green leaves bending over and completely covering the pots, for the last few years attention has been bestowed on the spotted hybrid varieties. These latter exhibit great variety of delicate colours and markings, which cannot be adequately described in a brief article like this. The most remarkable novelty in Gloxinias is the new netted strain, in which the self-coloured flowers appear beautifully veined with white in various ways.

At the Royal Horticultural Society's shows, and other places where this variety has been exhibited, it has always won distinction, as has also that superb white Gloxinia, Her Majesty, which the firm introduced last year. The great drawbacks to a white Gloxinia has always been the weak habit and thin substance of the flowers, but some of the variety just named produce flowers almost equal in shape and substance to the old much-prized crassifolia type.

One of the chief causes of Messrs. Sutton's success in Gloxinias and Begonias is doubtless the short time which is allowed to elapse between sowing the seed and flowering the plants—a period of barely six months—and yet the plants were strong and healthy, and the flowers abundant. The advantage of being able to cultivate Gloxinias as annuals in this manner must be apparent to every cultivator, and we should think it will soon supersede the old plan of buying tubers and keeping them from year to year.

The Portland Road grounds not only contain the houses for raising seeds, but also the trial beds of half-hardy flowers, such as Asters, Stocks, Phlox, &c. What struck me more than anything else in this department were the trial beds of seedling Carnations, filled with plants about eighteen months old, which are now flowering for the first time. I was astonished at the large percentage of doubles produced, and the perfect markings of these seedling flowers, which are quite equal to the majority of our named show varieties. A seedling plant of Carnation is the more valuable because of the great number of flowers it produces compared with plants from layers—several hundreds being borne on each plant. *B.*

THE LIVING EARTH.

The following extracts are taken from an address by Dr. G. V. Poore to the recent meeting of the Sanitary Institute at Brighton:—

The "Living Earth"! Some of you may ask what I mean by this, and whether I intend to apply the epithet "living" to the dark coloured inert mould which the countryman sees in the fields and gardens, and the town dweller finds in the flower-pot which holds his struggling Geranium? My reply is, "Certainly." We have arrived of late years at a certain knowledge of the fact, that the mould which forms the upper stratum of the ground on which we live is teeming with life, and as this fact seems to me to be one of prime importance to sanitarians, I propose to bring some points in connection therewith before you.

It has long been recognised by agriculturists that the upper stratum of the soil differs from that immediately below it in fertility; and in treatises on gardening (notably in that admirable work written by William Cobbett nearly seventy years since) the warning is invariably given to be careful, in trenching, not to bury the top spit of soil beneath the lower spit, because the top spit is by far the most fertile. The fertility in this case was supposed to be due to prolonged exposure to air, and the lower stratum of soil, if brought to the surface, would only become fertile after a considerable interval. It is interesting to observe that although these early writers were unacquainted with the whole truth, they had grasped the most important fact, and their practice was sound. This is often the case, and I feel sure that we act rashly when we hastily abandon the custom of centuries, because some new fact dazzles us, and distorts our vision. In connection with William Cobbett, I will draw attention to a term which he uses more than once in the work referred to, viz., the *fermentation* of the soil.

Fermentation in the Soil.

Cobbett tells us that the earth begins to ferment in the spring, and that before sowing, a thorough tilling and mixing of the upper strata of the soil is very necessary, with a view not only to the disintegration of the soil, but to a thorough leavening of the whole mass with fermentable matter. There is no doubt that this term "fermentation" as applied to the soil is perfectly apt, as we shall find further on. The black vegetable mould which lies upon the surface of the earth is largely composed of organic matter, which is not to be wondered at, seeing that every organised thing, whether animal or vegetable, which inhabits this globe, falls when dead upon the earth, and becomes incorporated with it. This black vegetable mould is largely composed of excrement, for not only is the excrement of the larger animals being constantly added to it, but this, and the varied organic *débris* which compose it, pass repeatedly, probably, through the bodies of animals which inhabit the earth, and especially of earth-worms. Darwin, in his book on *Vegetable Mould and Earthworms*, has forcibly drawn attention to the enormous amount of work which worms perform in the aggregate. How they disintegrate the soil. How they riddle it with burrows, which admit air to the deeper recesses of the soil. How their castings, which are incessantly being thrown off, tend to level inequalities, and gradually to bury stones, or whatever dead inorganic matter is incapable of solution, digestion, or disintegration.

Every one who has a garden must recognise the fact that gardening is only carried out at an enormous sacrifice of animal life, for with every thrust of the spade into rich garden mould, a death-blow is dealt to many of its inhabitants, the disintegration and aëration of the soil, which is effected by the quiet tillage of the earth-dwellers, is of the greatest importance to the agriculturist, for it is hardly conceivable that the delicate rootlets of plants could grow and extend unless the soil had been softened and pounded by the digestive fluids and gizzards of the earthworms and their neighbours. Seeing, therefore, that agricultural mould has all passed through the bodies of worms, and much of it through the bodies of other animals antecedently, we shall not be wrong in insisting that this so-called vegetable mould is mainly an animal excrement. The peculiar, sticky, glutinous quality of rich mould when moistened is probably in part due to this fact.

Organisms in the Soil.

Although the amount of *animal* life in the earth is considerable, it is as nothing compared with the richness of the soil in the lower forms of *vegetable* life. The dead and excremental matter becomes the food of saprophytic fungi, which abound in the soil to a very great extent. This must be the case, for we know that saprophytes and their allies abound everywhere, and as the surface of the earth is the common reservoir of all forms of life, it follows that these low vegetable microbes must be more abundant in the earth than elsewhere, and more abundant at the surface than deeper down. In Watson Cheyne's editions of Flügge's work on micro-organisms (New Sydenham Society, 1890), this is very clearly stated: "Enormous numbers of bacteria have always been found in the soil by the most various observers. Infusions made from manured field and garden earth, even though diluted 100 times, still contain thousands of bacteria in every drop, and the ordinary soil of streets and courts also shows the presence of large numbers. Bacilli are present in much the largest numbers; but in the most superficial layers, and in moist ground, there are also numerous forms of micro-cocci."

These micro-organisms of the soil are very active in producing changes in organic matter added to the soil. These changes are usually in the direction of oxidation; occasionally the change is one of reduction. One thing is certain, that if the soil be sterilised by heat or other means, it is no longer capable of producing any chemical change in organic matter. This seems to me to be a fact of prime importance to the sanitarian. The oxidation and nitrification of organic matter in the soil is a biological question, pure and simple. It is an effect produced by the *living earth*; a process analogous to fermentation, which Cobbett seems to have appreciated. Whether the nitrifying process which takes place in the soil is due to one or to many varieties of microbe is doubtful, but the latter supposition is probably correct, and experiments seem rather to point to the conclusion that, given favourable conditions—the free admission of air to a soil which is not unduly moistened—nitrification will go on.

Many attempts have been made to isolate a nitrifying organism, and one of the latest, by Professor Percy Frankland and Grace Frankland, the results of which were communicated to the Royal Society in February, 1890, appears to have been successful, for these observers isolated a bacillo-coccus, the power of which in producing nitrification appears to be most remarkable. Whether this bacillo-coccus is one of many having similar power, or whether it stands alone, is not known; but in any case we must regard it for the present as the Nitrate King among microbes. It has been asserted that fungi of a higher class, mould fungi, are also active in producing the disintegration and oxidation of organic matter in the soil. It is possible, however, that the bacillus mycoides, which forms threads closely

resembling mycelium, has been mistaken for mould-fungus. This bacillus-mycoides is one of those which is constantly present, we are told, in garden soil. It has been conclusively shown by Flügge, Koch, and others, that the microbes are most abundant in the superficial layers of the soil, and that they tend to disappear in the deeper layers. They are practically absent in the deeper layers, unless the earth has been deeply stirred or trenched, or unless sewer or cesspool has conducted filth to the deeper layers without touching the superficial ones.

THE EARTH AS A FILTER.

Numerous filtration experiments, on a large and small scale, have shown most distinctly that a layer of earth ½ to 1 mètre in thickness, is an excellent filter for bacteria, and hence the purification of fluids from bacteria must be still more complete in cultivated, and especially in clay soil, and where the fluid moves with extreme slowness. Further, it has been repeatedly shown that wells which are well protected against contamination with bacteria from the surface and from the sides of the well, furnish a water almost entirely free from bacteria; that, further, wells of water containing bacteria become the purer the more water is pumped out, and the more ground-water comes in from the deeper layers of the soil.

The vegetable living mould on the surface of the earth is, in short, a filter of the most perfect kind. It is very rich in saprophytic bacteria, whereas the subsoil at a depth varying from 3 to 6 feet is barren of bacteria, as well as of other kinds of life. The subsoil is mineral, inorganic, and dead; the mould upon the surface is organic, and teems with life. Anything which is thrown upon the surface of the ground soon disappears. This is especially the case with water. The absorbing power of soil for water varies according to its mineral constitution. Loose sand and chalk absorb water very readily, and clay less rapidly; but the absorbing power of vegetable mould, or humus, as it has been called, is infinitely greater. Humus is said to be able to absorb from 40 to 60 per cent. of water, and to hold it very tenaciously. This is from two to three times as much as the most porous dead mineral soil is capable of absorbing. We all know that in times of heavy rains it is infinitely rarely that we see water lying in pools on the surface of cultivated soil, whereas it soon collects on roadways and paths, which are made of dead mineral matter. The tenacity with which mould retains water is due to the fact that the water is absorbed into the interior of millions of vegetable cells, and is not merely held by capillary attraction in the interstices between the small mineral particles. It is the swelling of individual cells which forms so effectual a barrier to the passage of bacteria. Not only water, but everything else, when thrown upon the soil, disappears sooner or later. Such things as pieces of wood, or leather, about the toughest of organic materials, become softened and permeated by fungoid growth, and finally crumble away. In some parts of the country rags of all kinds are largely used for manure. Through the autumn and winter these may be seen lying on the surface, but when in spring the tilling of the land goes forward, and the fermentation of the soil commences, the coarsest of these rags disappear. If wood, leather, and rags disappear, leaves and animal excrement disappear, as we all know, far more readily. The disintegration is forwarded by birds, insects, worms and their allies, and what was the excrement of a large animal, becomes, as it were, the excrement of many small ones, until finally, by the action of saprophytic fungi, these organic matters become fertile "humus," which is the only *permanent* source of wealth in any country—the source whence we derive all the materials for our food and clothing.

The question, whether among the bacteria which are found in the soil, some may not be hurtful to mankind, is a question of great interest and importance. If disease-causing organisms find their way into the soil, may they not multiply, or at least continue to live, and then prove a danger to health? There can be no doubt that pathogenic organisms do exist in the soil, but their power for harm would seem to be practically very small indeed; and to regard the soil as dangerous because some pathogenic organisms may lurk in it, would be about as rational as it would be to condemn vegetable food because of the occasional dangers of Hemlock, Aconite, or the Deadly Nightshade. It is well known that if soil be inoculated into some of the lower animals, such as guinea-pigs, fatal results will follow from malignant œdema and tetanus; and it is also well known that earth, and especially street mud, if ground into wounds in the human subject, may cause malignant œdema and the death of the victim. It is equally well known that the workers of the soil, agricultural labourers and gardeners, are amongst the healthiest classes of the community, and that they are not credited with any diseases which are special to their calling. It seems to be a fact that the great doctrine of the survival of the fittest holds good for microbes in the soil, as for all other organised things, everywhere; and that organisms which flourish in the human body languish, and cease to multiply, in the soil, where the conditions are unsuited for their multiplication, or even for their survival. They get overgrown by saprophytic microbes, and even if they do not die, the risk of their finding their way into the ground-water is practically *nil*, for we have seen that humus is the best of filters.

(To be continued.)

BURFORD LODGE, DORKING.

THE squares and borders adjoining and in front of the greenhouses here are still very gay and effective, despite the unfavourable weather, of which we have had so much. The display is more noteworthy on account of its being largely made up of hardy annual and perennial plants. At the present time, probably the most striking thing is a grand row of the beautiful Crinum Powellii—the well-known cross between longifolium and Moorei. The hybrid has, to a large extent, inherited the ensiform, acute, moderately-firm texture of the leaves of longifolium, as well as the long narrow perianth segments; but their uniform reddish colour takes after Moorei. The plants are growing very luxuriantly, having dense crowns of leaves, which measure up to 6 feet long. Most of the bulbs had several flower-scapes carrying a dozen and more flowers each. We were told that the secret of success lay in thoroughly preparing the ground by deep trenching, &c., before planting, and to plant deeply—those under notice being quite 2 feet deep. There are also some lines of C. Moorei, or Mackoyanum as it is called, in a really flourishing condition, but as a garden plant we think C. Powellii is superior.

Gladioli, as might be expected at this season, are rather conspicuous. A fine selection of the gandavensis and purpureo-auratus hybrids being grown—the wet season has evidently been favourable to these plants. A bed of the dwarf Platycodon grandiflorum Mariesii—although somewhat past, had evidently been very good. This variety is quite as floriferous as the type. But it is only about 1 foot high, instead of 2 to 3 feet as in grandiflorum. Good masses of Salpiglossis and Nigella damascena were very striking, several forms of the latter are grown—but the double-flowered variety is the most telling. A line of Canna iridiflora, Ehemanni, and the variety C. Moutonii, a lesser grower, with darker flowers—each had produced masses of growth—carrying large panicles of their brilliant coloured flowers. Rudbeckia purpurea was noticeable with its long purple petals and dark brown disk; masses of Sweet Peas, Sunflowers, and some excellent Dahlias contributed their share to the display.

A run through the greenhouses disclosed the fact that Orchids are by no means the sole occupants, as some might infer from the fact that it is Sir Trevor Lawrence's garden we are speaking of. Indeed, there was a grand show of zonal Pelargoniums, both single and double, evidently the cream of both sections. Another house was very gay with well-grown plants of tuberous Begonias, the flowers being of good size and substance. The curious, slender, trailing Pratia littoralis had berried well, planted in a basket near the glass. It is nearly hardy, but is apt to go off in winter if left outside unprotected. Blandfordias are well done here, and although they flower early in the season, yet some stray flower-scapes of B. Cunninghamii reminded us of the great beauty of these plants. The flowers of this species are almost bell-shaped, numerous, pendulous, and carried at the apex of a stout peduncle. They are coppery-red outside, tipped with yellow, as well as being yellow internally; they are about 2 inches across, and somewhat more in length. I also noted fine specimens of Anthurium Veitchii and Warocqueanum, also many fine hybrids of the Schertzerianum type. A fine batch of Dracænas for decorative purposes; also the large-flowered Ruellia macrantha, with its rosy-purple flowers. *F. R.*

DISEASE OF BEGONIAS CAUSED BY NEMATOID WORMS.

A CORRESPONDENT has forwarded leaves of Begonias badly discoloured and diseased. The mischief has been caused by colonies of minute eel-worms living and breeding between the two membranes of the leaf. The attacks of eel-worms on plants give varied results, one of the most familiar being the disease of Cucumbers, Melons, &c., where the rootlets become covered with small nodular swellings. Ear-cockle in Wheat is another form, the livid patches on Carnations a third, and "tulip-root" in Oats a fourth. One of the most remarkable is the disease caused by nematodes in Odontoglots (see *Gardeners' Chronicle*, January 9, 1886, p. 41).

The effects of the attack of nematodes upon Begonias differ from every other case with which we are familiar. The eel-worms appear to traverse the stem of the Begonia from the root upwards to the extremities of the succulent chief ribs of the leaves. When the apex of the leaf is reached, the nematodes eat away the substance of the main ribs, as shown in the accompanying illustration (fig. 58). The ribs then completely collapse, and the nematodes eat their way into the substance of the leaf between the upper and lower membranes. The collapse of the chief ribs, as seen from beneath the leaf, is very striking, and in the examples examined by us, the nematodes swarmed in abundance. Although nematodes are a frequent cause of disease in plants, we cannot remember any former record of their occurrence in Begonias, neither can we remember seeing any result identical with the one here described.

The actual eel-worms are shown *in situ* at A, A, Fig. 59; with an egg with eel-worm within at B; and the cells of the Begonia leaf at C, C. *W. G. S., Dunstable.*

FLORISTS' FLOWERS.

THE AURICULA.

I HAVE not touched upon this plant since writing of its treatment in May, and amongst other details of culture I recommended repotting in that month. Many of the best growers used to repot at that time, and I amongst the number this year; but other plants were repotted in June. I was anxious to save some seeds, but seeds take a very long time to ripen, and not until August were all the seed-pods ready to gather, consequently some of the plants were not repotted until quite the end of July or early in August. I have (now that the latest repotted plants are well-established) taken stock of them, and it certainly seems to me that those done most recently promise to give the best results for next year. The earliest are flowering much more freely, and wasting their strength in producing offsets, while the others which have been bearing seeds have not done more than form good crowns for next season's bloom, the effort to ripen off the seeds having retarded growth.

The woolly aphis seems to be prevalent in many collections, and it is a very troublesome pest, that spreads rapidly; and those who have it to deal with for the first time naturally become alarmed when they see the roots and the neck of the plants covered with the insects. We do not take much heed of it now, and merely remove it from the roots at the time of repotting; and if it reappears on the neck of the plants, it is brushed off, and the place dusted over with tobacco-powder, which has the effect of driving them away, if it do not kill them.

The last of the offsets for this year have been put in, for any that are planted after the beginning of September, unless they are well rooted before removal, have a tendency to damp off during the winter, and when a variety is scarce, it is not wise to run risks. Offsets taken off early in the year are now growing freely; many of the more vigorous varieties are in large 60's, and these plants will form good trusses, I hope, in the spring. Seedlings are to many more interesting than named varieties, even when the seeds may happen to have been purchased, but to be anything like successful with Auriculas, careful hybridisation of the best flowers is necessary and on this point I have learned much during recent years. I have learnt that if there is a chance to produce a variety, superior than either its seed or pollen-parent, there is quite as much probability that there will be a reversion to the original type, and the progeny of the highest class flowers, from the point of view of the florist, have the greatest tendency towards reversion. In one instance I had as many as 20 per cent. of the seedlings either yellow, or very nearly so; and Mr. Horner wrote to me during the past summer to say that all the beautiful yellow varieties he had raised, including Buttercup, were chance seedlings from edged varieties. It is common even to find dark-coloured selfs amongst the seedlings from edged flowers.

I would urge very emphatically the careful crossing of the best varieties in each class with each other. In the green-edged class, growers can obtain Prince of Greens (Trail), Rev. F. D. Horner (Simonite), and Colonel Taylor (Leigh); the last-named won prizes nearly sixty years ago, and is not now of vigorous constitution. In grey-edged varieties, I would recommend George Lightbody (Headley), Lancashire Hero (Lancashire), Mabel (Douglas), Marmion (Douglas); and in the white edge, Acme (Read), Smiling Beauty (Heap), Mrs. Dodwell (Woodhead), Conservative (Douglas). In selfs, the best yet in the trade are Heroine (Horner), Mrs. Potts (Barlowe), Black Bess (Woodhead), and Sapphire (Horner). The above list of varieties is not a long one, but I would rather begin with the above than with a much longer list, which would have to contain some of inferior merit.

Many persons are inquiring about growing Auriculas out-of-doors, and some of them write to me to say that they have been very successful. The Auricula is a very pretty spring-flowering plant for the rock-garden, and when well placed and planted in masses of one colour, the effect is really good. A clump of Diadem (Gorton) has been established in our rock-garden for five years, and in the spring of the present year it produced upwards of one hundred good trusses of bloom. In the first instance, six plants were put out about 8 or 9 inches apart. The clump is more natural in appearance when the form is irregular. Clumps of other varieties have been put out, but none have succeeded so well as Diadem. A surface-dressing in the spring, of loam, leaf-mould, and decayed manure gives the plants great vigour. They may be taken up and replanted every year, and now is a good time to do it, for if left until the spring before blooming time, the flower trusses are likely to be weakly. As winter approaches, it becomes necessary to look over the plants frequently, both under glass and out-of-doors, to see that all decaying leaves are removed. *J. Douglas.*



Fig. 58.—Begonia leaf. (see p. 298.)

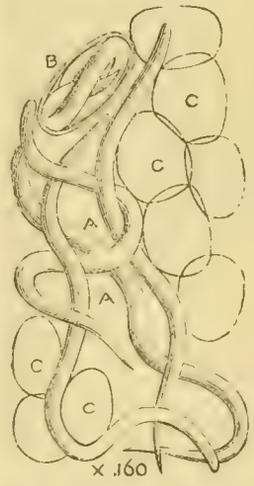


Fig. 59.—Eel-worms in Begonia leaf: magnified 160 diam.

The Pansy.

This is perhaps the easiest plant to cultivate amongst our old-fashioned florists' flowers, and on that account it is not so much cared for as it ought to be. Pansies rapidly exhaust the soil, and the quality of the flowers deteriorate if the plants be not renewed by propagation; therefore, if we wish for a succession of high-class flowers, frequent raising of young plants becomes a necessity. The routine of culture is very simple. In August or September, cuttings which may readily be found at the base of old plants—small wiry shoots are best—may be jerked out with the finger and thumb with some few roots attached; these may be dibbled in, in a shady part of the garden, and such cuttings or rather suckers soon become established.

Pansies are free from insect pests this year, but sometimes they are much infested with a species of aphis, which is, however, easily destroyed by dipping the cuttings in weak tobacco-water and soft-soap. Let them lay in the mixture for half-an-hour, and then wash, take them out and clean before planting them. The Pansy is hardy, but I find that when young plants are put out in the open ground as late as October, they do not get sufficiently established to pass unharmed through severe winters. They ought to be planted early in September, and the cuttings should have been taken off in July. Late cuttings should be planted in a sheltered corner for the winter, and replanted where they are to flower in the month of March; but even this is no assurance that they will not be injured by frost. We put out two large beds in March of the present year, and 23° of frost a day or two after crippled many, and killed some. We cannot make sure of not losing some of the varieties unless a plant or two of each is wintered in boxes in a cold frame. Pansies grown in pots are very pretty objects early in the season, but for this purpose early-raised plants are necessary, and they should also be established in September; they continue to produce flowers all through the winter and spring months. Rich open soil is necessory to give good results, either for open garden or pot culture. *J. Douglas.*

Plant Notes.

Spiræa bullata.

This charming little Japanese plant is very useful for rockwork, as it rarely exceeds 2 feet high, and is a pleasing object even when not in flower; the leaves are dark green and somewhat wrinkled, and its flowers of a rich pink colour are borne in clusters. The plant is hardy, but it is seldom met with; as a subject to plant in front of groups of the larger growing varieties it is admirable. Propagation is by cuttings, which if put into sandy loam in a cold frame about this time of the year will root before winter.

Abelia rupestris.

This is a Chinese shrub, introduced by Mr. Fortune. At the present time plants of it are covered with trumpet-shaped flowers, which last quite five weeks in good condition, and are very nicely scented. The foliage is shining. Planted against a wall it grows rapidly, and soon becomes effective. It is readily increased by cuttings put into 5-inch pots, and plunged in a moderately warm propagating case.

Hypericum aureum

is a very distinct St. John's Wort that flowers most freely at this season. Its leaves are large, oblong, and of a very shiny appearance; the flowers measuring 1½ inches across, and are yellow. H. oblongifolium is another of the same family with large golden-cupped flowers, which are borne in clusters on each twig, but it is not sufficiently hardy to stand severe frost, and requires a little protection in winter. H. patulum is also a free bloomer and very graceful, the flowers are rather smaller than those of oblongifolium, but they are rich in colour. H. reptans is chiefly used for rockwork, as it is of a low-

growing nature. If cuttings are put into 5-inch pots and placed in frames, they will root in about a month. Now is the best time of the year to plant the Hypericums. *H.* [Many of the species will root well in very sandy soil under a west or east wall, if protected with a hand-glass. ED.]

FERN NOMENCLATURE AND THE ROYAL HORTICULTURAL SOCIETY.

I HAVE read with much interest the articles on the above subject by Messrs. Druery, Baker, and Lowe. On the subject of names of genera and species. I do not presume to interfere, being quite content to let the botanists settle it among themselves. I venture to point out, however, with regard to the general principle enunciated by Mr. Baker, "that between each different genus there must be a palpable and appreciable difference in sporange, sorus, or indusium," that between some of the despised varieties of undoubtedly the same species there are distinct differences in at least some of these parts. For instance, A. f. f. plumosum, Horsfall, is destitute of indusia altogether, and was described by John Smith, for this reason, as Phegopteris plumosa. Nevertheless, it is a true Lady Fern, as also is, I believe, the so-called Polypodium alpestre.

With regard to the vexed question of the naming of varieties, Mr. Druery strikes the true note when he says that the chief evil is their excessive multiplicity (*i.e.*, multiplicity of names, not of varieties). I think there is no doubt that the number of current names greatly exceeds the number of really distinct varieties. The fact is, we are all apt to imagine that our own geese are swans. This, I imagine, is the gist of the whole matter. Very often, when a person finds, or raises, or steals a form which is unfamiliar to him, he rushes to the conclusion that it is new, and straightway sets his wits to work to invent a name. Not rarely the most original and suitable name he can think of is his own patronymic with two i's tacked on to it. Perhaps half a dozen people raise forms which are identical with each other, and so half a dozen new names come into circulation for a plant which is perhaps after all not a new one. I have in mind one variety which passes under at least four synonyms all ending with double i.

I have only one slight modification to suggest with regard to Mr. Baker's proposal for a committee appointed by the Royal Horticultural Society to revise names, and that is, that every time a new Fern is proposed to be named, a dried frond should be sent round to the principal Fern growers (they are few enough for this to be done), and their comments asked for. This frond or a duplicate could be retained as a standard by the central authority. In this way, old forms attempting to pass as new would be caught and put in their proper places. It is impossible that two or three men can be acquainted with all the forms in existence, and have the value of a number of counsellors. The presence of a scientific botanist upon the committee can only be productive of good, but it seems rather hard upon him as well as upon the others that he should be retained solely to draw the line between varieties and "monstrosities." I respectfully invite Mr. Baker or Prof. Bower to tell us, once for all, what constitutes a variety and what a monstrosity. Let us proceed upon some general principle, otherwise if the referee should happen to die, we shall be left in the lurch.

I cordially agree with Mr. Lowe as to the desirability of classifying the varieties in sections, as has been done with Lilies and other plants, but I do not see that this will shorten the names much, because, in order to identify a particular variety, it will be necessary to give the name of the section, as well as that of the variety. There does not seem to be much gained in the matter of brevity (although there may be in other ways), by saying Polystichum angulare, section plumosum, variety Elworthii, instead of P. a. plumosum, Elworthy. As a matter of fact, I think the difficulty about the inordinate length of Fern names has been greatly exaggerated. In labelling a Fern for exhibition, for instance, it is usual to give the name of the genus and species, as well as of the variety, and when the former happens to be long (*e.g.*, Athyrium filix-fœmina), the total result seems somewhat formidable, but the specialist in Ferns never thinks of writing these at full length, even if he mentions them at all, on his labels; he considers them sufficiently obvious in the plant itself. If the names of genus and species were given at full length in labelling, say varieties of Roses, Pelargoniums, Fuchsias, Hollies, &c. the total linear measurement would probably average higher than in the case of Fern names. I have known, and still know, Fern lovers of all grades of education, from colliers and drapers' assistants, up to professors, and I never knew a real one to make any fuss about long names.

With regard to the principles of naming, I must say I regard the descriptive system of Wollaston and Jones as the most scientific and satisfactory. If the name indicates the main points in which the variety differs from the parent species, one has an idea at once upon seeing the name, what the plant is like. It is also true that between forms having the same general characteristics, there are subtle differences only appreciable by the practised eye, and not definable in words. Take, for instance, that very distinct and natural group of forms of Polystichum angulare, named by Mr. Wollaston, cristato-gracile, and by Colonel Jones, percristatum. In all these the fronds are somewhat slender, the apices of fronds and pinnæ are tipped by small neat crests, and the pinnules are crested. Forms agreeing in all these respects have been found by Gray, Jackson, Padley, Moly, Wills, Jones, and others—they are all percristatums—to the casual observer and perhaps even to the botanist they are all alike, but the experienced Fern-lover can pick them out and discriminate between them by subtle and perhaps indefinable characteristics of habit, colour, texture, and symmetry. What can be simpler than to call these all by the same botanical name, but to refer to them as percristatum of Gray, Jackson, or Moly, &c., as the case may be? I dislike the attempt to convert English proper names into Latin, or rather to make them look like Latin. What can be more grotesque and barbarous than such expressions as Wrightii, Brownii, Shawii, Stansfieldii—many of them words which could not exist in Latin because that alphabet does not contain their letters. I do not see why we should bow down before the "printer's ink" fetish, for undoubtedly descriptions, and even figures, have been published of varieties which were not permanent, and which even if permanent, would only be fit for the rubbish-heap. It was, perhaps, inevitable at a time when Fern varieties were "the fashion," that the fashion should be carried to unwise extremes.

To tabulate the reforms required, we want—

1. A responsible central authority, to revise old names, and give new ones to new varieties.
2. A definite principle of naming, in the light of which the action of the central authority can be criticised.
3. Rigid selection of distinct and beautiful forms only for naming.
4. Free communication between the central authority and outsiders before a name is granted to a supposed new Fern.
5. A standard collection of dried fronds, or, preferably, of living plants when this is possible. *F. W. Stansfield, M.B., Derby.*

KEW NOTES.

OXALIS BOWIEANA.—This is a first-rate greenhouse flowering plant. In the Succulent-house at Kew it is planted as an edging to one of the brick stages, and is now a broad band of elegant large rosy-purple flowers. There is no Oxalis to equal it in the combined characters of size of flower, richness of colour, and floriferousness. The somewhat dry conditions, coupled with bright sunshine, which are afforded in this house, appear to suit the plant to perfection. Three years ago, a few bulbs of each of the species of Oxalis grown at Kew were planted in the succulent-house, with a view to finding if the conditions would be favourable to them. There were many failures, whilst the successes were O. floribunda, O. brasiliensis, O. lobata, and O. Bowieana; but the best of the quartette by far is O. Bowieana. [When grown in sandy peat in pots, this plant does well, and is very effective in greenhouse decoration. When the foliage is mature, the pots should be placed in a cool, very dry place, and kept quite dry until wanted to start in March, April, and May. ED.]

Tenacity of Life in a Yucca.—Nearly two and a half years ago the trunk of a Yucca, probably Y. elata, was received at Kew from Dr. Pringle as a specimen for the Museum of Woods. It measured 14 feet in height by 1 foot in diameter near the base. There was not a vestige of a root upon it, and the top had been sawn off. It was at once placed in the museum, where, of course, the conditions are almost as dry as an oven. A week or two ago, two shoots were seen growing out from the top of the trunk, one composed of leaves, the other of flowers. On examination, the whole of the trunk proved to be full of sap, and as succulent as if it had only just been dug up from the ground. It was, therefore, removed to the Temperate-house, where it may now be seen in flower. Y. elata is peculiar to the dry desert region west of the Rocky Mountains, between the United States and Mexico. It has erect stiff filamentose leaves, and an erect flower-spike 10 to 12 feet high; the flowers are 4 inches across, and pure white.

Faradaya splendida.—This plant is now in flower in the Palm-house. The genus is a small one, of two or three species, and is related to Oxera and Vitex. The species under notice is a robust climber, and has large opposite oblong leaves, sometimes a foot long by 4 inches broad, leathery, and glossy-green. The flowers are in a loose terminal panicle, pure white, and fragrant. The calyx is small, the corolla tubular, dilated upwards, with a spreading four-lobed limb, 1½ inches across. The Kew plant is trained to a large iron pillar, 25 feet high, and it has reached the top. It has been in the collection since 1879, when it was received from Brisbane. For furnishing pillars in large tropical houses, this plant is most useful, as it grows freely, and retains its large healthy-looking foliage a long time. A second species, called F. papuana, is also in cultivation at Kew. A figure of F. splendida has been prepared for the *Botanical Magazine*. *W. Watson.*

PLANTS AND THEIR CULTURE.

STOVE PLANTS, &c.—Many of the plants in this house which have flowered freely should be watered with liquid manure. Allamandas will give an abundance of bloom if liberally treated; Dipladenias are also gay at this date, and will take supplies occasionally of a good fertiliser if the plants are in a healthy condition. Clerodendrons will be useful, the dwarf, shrubby kinds lasting for weeks if well treated and kept free from mealy-bug; their bright scarlet flowers are very effective, C. fallax being the best of the dwarf kinds. C. fragrans is also useful, and does well with cool treatment in the summer, and will continue to bloom for some time yet; C. Balfouriana, now growing vigorously, must also be afforded liquid manure. Specimens which have bloomed, and are now completing their growth, should be removed to a cooler house, affording them less moisture; and plants whose bloom is past, should be put into a warm corner of the stove and close to the glass, and encouragement given them so as to get quick growth. Supply Bougainvilleas well in bloom with liquid manure, especially such as are planted out. These and similar plants will require scarcely any shading, the wood being better ripened by free exposure. Ixoras are better for a lower temperature, so as to prolong their blooming; plants past their best should be rested, by giving them less moisture at the roots and a cooler house.

Justicias should always be grown in two or three lots, so as to prolong their season, the latest being grown in cold frames in the summer months. The plants are both useful and enduring. The various species of Æschynanthus are charming plants, blooming in the late summer months—good for baskets or pots; in the front of the conservatory stages these plants are effective. The plants delight in heat and atmospheric moisture whilst growing. The recently introduced stove plant, Amasonia punicea, deserves extended cultivation, it

being in bloom at this date, and lasting in good order for a long time. We have not yet tried to grow it cool through the summer months like the Poinsettias, but intend to do so as soon as sufficient stock has been raised. Anthuriums should be making a liberal growth if their spathes came early in the season, and a warm moist house will best suit them. Weak liquid manure occasionally, and plenty of pure rain-water, are required. In a dry house red-spider is apt to disfigure the leaves. Combretum purpureum, a beautiful stove plant, requires plenty of root moisture and heavy syringing while making its growth; it is excellent as a pillar plant when planted out. Torenia asiatica, T. Baillonii, and T. Fournierii when well grown are good subjects for summer and autumn; I usually sow thrice in the season, and secure blooming plants until late in the year. As basket plants for low houses they are very serviceable, but they should not be suspended high, much of their beauty being then unseen. Vincas and Streptocarpus are useful for late summer decoration, and easily grown; but they should not be kept in a warm moist house. *G. Wythes, Syon House, Brentford.*

The Orchid Houses.

East India House.—The earlier flowering plants of Phalænopsis amabilis and P. grandiflora will now be showing their flower-spikes; but should any of the plants do this before the leaves have attained their full growth, the spikes should be at once pinched off. This will give the leaf-growth chance to mature before November—a great advantage to the plants. The leaf-growth should be kept very clean, for dirt upon the foliage is the forerunner of more than one trouble, to which these plants are often liable.

Angræcum Scottianum is undoubtedly the freest growing plant of this genus, and it is nearly always in flower, whether affixed to a bare raft, or planted in basket or pot, with peat and sphagnum moss. Paphinia grandis we find a useful Orchid, and its flowers of an extraordinary size compared with that of the plant. It will flower on, when very strong, two and three times a year, from the same pseudo-bulbs.

Plants of Dendrobiums, as they finish up their new growths, should be removed to a cooler house, where, with a plentiful supply of fresh air and full sunshine, they may properly ripen up the new growths. Should the temperature fall so low as 55° at night, it will do no harm to the plants, but the plants must not be neglected; they should be looked over daily, to see if any require to be watered. Drying-off has caused the loss of untold numbers of Orchids; nevertheless, I would strongly advise the removal of plants from their growing quarters to a light airy house, where all the conditions I have mentioned can be observed. The resting of Orchids requires much study of their needs if they are to be kept healthy, and is of quite as much consequence as the summer treatment. If autumn and winter treatment is what it should be, the plants in summer will almost take care of themselves. The temperature here may now be allowed to gradually decline, the more gradually the better; and, if the house be allowed to fall to 70° or 72° at night, no harm will be done, always remembering to keep a current of fresh air playing through it.

Odontoglossum-house.—Every effort should now be made to get Odontoglossums repotted. I have before in previous Calendars given full instructions how this should be done, and I would advise very careful watering of the plants for some time after repotting. Far better, give no water at all, but quickly dip them in the water-cistern, so as merely to settle the materials on the top of the pot. Leave the top ventilators wide open at night, that the plants may receive full benefit from night dews. *A. G. Catt, Parkfield, Hallow.*

The Hardy Fruit Garden.

Peaches.—The trees which fruited first are now ready for pruning, which is not a heavy operation, but consists merely in the removal of wood from which the fruit was gathered. When pruned, the wood of the current year is regulated and tied-in to the walls to ripen. Laterals and all strong-growing shoots should have the points pinched out, and a good washing with the engine should be given to the trees. Late kinds should be kept closely tied or nailed, the proper balance of growth being maintained by cutting back gross shoots and laterals. Fully expose the fruit so as to get high colour and good flavour. All kinds of autumn fruit seems to be as forward as in ordinary years—Jargonelle Pears have not been so early since 1887. If woodlice are troublesome, trap them with small pans of moss, Carrots, and Potatos. Nectarines, I think, suffer more from their ravages than Peaches. Some growers slip a piece of tinfoil behind each fruit.

It should now be decided what trees are to be lifted and root-pruned, so as to prepare suitable materials for use when the time comes. October is no doubt the best time to root-prune Peach and Nectarine trees, but this ought really to be decided by the state of the wood; for nothing need be done until the wood is ripened, or it will shrink, and the buds will drop as soon as the sap becomes active in the spring. Rich loam is the best of soils for these and all other stone fruits; and unless the soil is very poor indeed, no kind of manure should be mixed with it. If the suitable loam cannot be procured, the kind used should be mixed with burnt earth and lime rubble. Failing lifting and replanting, much good may be done by taking away the surface soil and replacing it with good top spit loam, &c.

Gooseberries. — Bushes, from which the fruit is gathered, should have their shoots thinned out, and when the soil is retentive, it should be forked lightly over, as owing to the continual trampling, the ground has been made hard and adhesive. Red and White Currants should also have the shoots thinned and shortened back, and the soil loosened. *A. Evans, Haslemere.*

Fruits Under Glass.

Vines and Vineries.—Pot Vines required for starting in November should now be pruned—the laterals closely cut in and the canes shortened to about 6 feet—just within the summer stopping, as generally the best eyes are found near the end of the cane, but often they are not well ripened and firm, lanky bunches being in consequence produced. Keep the canes out of doors fastened to supports to prevent twisting by wind, the pots being top-dressed after removing as much of the old soil as possible. The top-dressing should consist of good turfy loam mixed with a little bone-dust, and it should be well rammed together. Do not allow the pots to become dust-dry, but at the same time protect them from heavy rains. Dress all wounds with styptic, or painters' knotting, to avert possible bleeding; and when the canes are put into heat, do not remove any leaves, but allow them to mature and fall naturally. If kept cool, there will be no risk of any of the permanent buds pushing after this final pruning, but the effect of the treatment will be to send them to rest. Very soon the same kind of treatment will apply to the earliest forced planted-out Vines, and it is not necessary to wait till every leaf is off before pruning them, provided the wood is brown and hard, and the leaves are turning yellow. Where Vines have been hard forced, and the canes spurred in year by year, it will be found advisable to leave here and there a few of the best laterals, those having several well-ripened eyes thereon, and train them parallel with the old rod. Such shoots will usually form good buds and larger bunches, although these may be looser and more lanky than those on the closely spurred shoots. Moreover, the greater substance of the foliage on these new shoots is invigorating to the Vine, but disbudding must be rather severe to prevent overcrowding of the foliage, whilst young laterals should be selected and trained in for the purpose indicated. The lifting of the Vine-roots being now finished, the whole of the soil should be kept in a moist condition. Borders with a hard surface should not be allowed to crack through dryness, otherwise such contraction will sever many of the best fibrous roots. On the other hand, material for the protection of outside borders should be in readiness, in case of heavy rains setting in, which reduce their temperature. This refers principally to borders in cold districts, but in this county we should be glad to get twenty-four hours' steady rain, for notwithstanding the number of days on which rain has fallen more or less, the total rainfall is much below the average, and the springs are correspondingly low.

Late Vineries.— Take every advantage of the present sunny weather to bring up the colour of the late Grapes, and assist the process by the use of fire-heat at night, with good ventilation (day and night), the night warmth being kept at from 60° to 65°. It is advisable to damp down the walls and floors once or twice during the forenoon of bright sunny days; do not neglect to afford pure water to the roots when it is needed. Fix netting over the ventilators where ripe Grapes are hanging, to keep out the wasps and flies. Late crops of Muscats should have much of the foliage tied aside, out of the way of the bunches, so that the sun's rays may bring up the colour. Remove seedless and imperfect berries, and keep a sharp look out for red-spider and the small spiders which weave webs in the bunches.

Gros Colmar takes a long time to colour, but it must not be hurried. Both this variety and Lady Downe's keep best if perfect colour is obtained in the berries by the end of September. A moderately dense foliage overhead assists the black Grapes to colour, whilst plenty of direct light encourages the colouring of white Grapes. Remove all lateral growth from Vines whose crop is gathered, as by the liberal admission of light, the ripening of the wood is hastened. Young Vines with strong growth late in ripening may be assisted with fire-heat, continuing the same with free top and bottom ventilation until the wood is ripe. Discourage growth by the removal of laterals as they appear.

Figs in Pots.—These, if for early work, should be top-dressed, as advised for Vines. Trees planted out should have a portion of their roots sought out and relayed near to the surface in loam, crushed bones, and old mortar rubble rammed very firm. Prune off exhausted shoots and snags, and beyond this the Fig needs no more pruning. Bring the trees to a state of rest, but do not withhold water from the roots as a means of doing so. Remove all half-grown Figs, as these are sure to fall in the winter, and endeavour to keep all the foliage free from insects until they fall. *W. Crump, Madresfield Court, Malvern.*

The Kitchen Garden.

Potatos.—Early and late kinds, as soon as sufficiently ripe, should be dug up, sorted, and stored. For this kind of work advantage should be taken of fine, dry mornings, the gathering up of the crop being done in the afternoon, or, at all events, when the tubers have got somewhat dry. When the Potato is dry on the skin, diseased tubers are readily distinguished from sound ones. The useable part of the crop may be pitted, and the seed spread thinly on shelves in a frost-proof shed. But if disease has made its appearance, it will be advisable to give them another turn over in a fortnight or so, before finally clamping them down. When picking up the tubers do not leave any that are diseased on the ground, but take such away with the haulm and burn them.

Cauliflowers.—Autumn Giant will now be turning in, and for safety sake bend some of the leaves over those ready for cutting. When frost is likely to be severe, I lift all the plants just turning in, laying them in thickly by the heels, on a warm border, and covering them over at night with mats if frost seems imminent.

Onions.—These bulbs should be harvested forthwith. Usually these reach maturity in time for the ground to be planted with Cabbages, but this year I find that they are much later than usual, and the stalks green; but bending these over will somewhat hasten ripening, as will the bright weather. When drawn, the bulbs may remain in the open for a few days, being turned over at intervals. When thoroughly dry, twist the tops off, and store in a dry airy shed, away from frost.

Capsicums.—As fast as the pods become ripe, they should be gathered and gradually dried; the fruit keeps better if taken off the plant and placed in drawers. The green pods come in useful for pickling.

Celery.—Still continue, in the absence of rain, to deluge the rows with water, and sometimes with manure-water, and allow no check to growth, as it often leads to the Celery plants bolting, especially if it be followed by heavy rains and warm weather; it is a cause also of toughness and stringyness in the stalks. *H. Markham, Mereworth Castle, Maidstone.*

EDITORIAL NOTICES.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

NEWSPAPERS. — *Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	SEPT. 15	Great Annual Trade Sale of Greenhouse Plants, at the Dyson's Lane Nursery, Upper Edmonton, by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	SEPT. 16	Great Annual Trade Sale of Greenhouse Plants, at the Burnt Ash Lane Nurseries, Lee, by Protheroe & Morris.
WEDNESDAY	SEPT. 17	Great Annual Trade Sale of Greenhouse Plants, at the Lea Bridge Road Nurseries, E., by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	SEPT. 18	Great Annual Trade Sale of Greenhouse Plants, at the Brimsdown Nursery, Enfield Highway, by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	SEPT. 19	Important Clearance Sale of Greenhouse Plants, Palms, Greenhouses, &c., at the American Nurseries, Leytonstone, by Protheroe & Morris. Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	SEPT. 20	Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—57°.4.

The British Fruit Growers' Association.

THIS young Society held its annual meeting at the Crystal Palace on Friday last. The day was propitious, for an excellent illustration of what British fruit growers can do was afforded. It may, of course, be said that such fruit as was shown was exceptional, in that it represented the selected produce of skilled gardeners provided with all needful appliances. That is, no doubt, true, but the point to be driven home is not the detail which must vary according to circumstances, but the principle, and that principle is, that fruit culture, if it is to be made profitable, must be conducted substantially on the same principles, and, so far as possible, with the same careful attention to details as those which characterise the procedures of the gardeners.

Different conditions and varied circumstances, some, perhaps, conflicting, necessitate adaptations and modifications, but the principles are the same. It is this fact, we take it, that the Association has to impress upon the would-be cultivators of fruit for profit. The Association had its rise at a period when the wildest exaggerations were indulged in as to the profits that the British farmer was to reap from undertaking the cultivation of fruit. Such obstacles as want of knowledge of the business, ignorance of the art of marketing, unfavourable tenure of land, burdensome taxation, repressive railway rates, foreign competition, and unfavourable seasons were minimised, if not ignored, and the public was informed, like Mrs. MICAWBER, that the "profits to be gained from fruit culture were 'enormous.'"

The Royal Horticultural Society, by its conferences and the Fruit Growers Associations, have done much to disperse these frothy and misleading statements, and to show what is the real state of the case. The Association has set to work in a strictly scientific way to collect, compare, and weigh evidence bearing on the subject, and then to diffuse information showing under what conditions fruit-growing may be reasonably expected to return a fair, but never a very large average percentage on the capital and labour expended. The meetings which have been held already in various towns, and those which are to follow have had, and will continue to have, these objects in view.

For our own parts, we think the Association is likely to be of most benefit to small capitalists, to allotment gardeners and cottagers. Large capitalists can take care of themselves; if they want information they know where to obtain it. They can command the assistance of trained cultivators who know what to buy, what to grow, and how to grow it, and what and when to sell. But the small growers, those who would find fruit farming on a modest scale a valuable adjunct to their business, these are the class of people who most need the assistance of experts, and the assistance this Association is well calculated to give.

The paper of most general interest was that of Messrs. GORDON and CASTLE on "Fruit Culture in Ireland," in which they detailed the results of their observations in a hasty visit to that country. In the course of the discussion on this paper, initiated by Mr. BULLOCK HALL, that gentleman advocated the commissioning of itinerant lecturers—we should rather say demonstrators—to instruct the rural communities in the methods of cultivation, and in the sorts to be grown with the greatest prospect of success. This is a procedure which has been followed in France and Belgium for many years, and one which has repeatedly been advocated in these columns. Certainly, judging from what Messrs. GORDON and CASTLE told the meeting, and still more from the quality of the Irish fruit shown on the occasion, there is much room for improvement. Mr. HALL doubts whether the present race of peasants and small proprietors are capable of being moved, and holds out but little hope of assistance from the rural priests. Much might have been hoped for from them, seeing how valuable are the services rendered by their Continental brethren in the rural districts. Mr. BULLOCK HALL thinks that more may be done in Ireland through the influence of the schoolmaster on the rising generation. North-east Ulster with an inferior climate, is a-head in fruit culture, as in most other things, and this superiority is attributed by Mr. DENNY LANE, of Cork, who made an excellent speech, to the admixture of the Scottish element, to superior education, and more favourable land-tenure. On the other hand, the climatal advantages of the south and south-west are so great as to enable the cultivation of fruit to be undertaken in Ireland almost as successfully as in the Channel Islands.

Small fruit and bush fruit offer greater chances of success on the average of seasons than do Apples, and with them foreign competition is much less formidable than in the case of Apples. While the larger cultivator, therefore, will do well to plant Apples, Pears, and specially Plums, the small grower may be recommended to rely chiefly on the small fruit, the culture of which can be undertaken altogether with that of flowers and vegetables.

The Red Wood.

THERE is something to be said in favour of commemorative names, after all. The Red Wood!—why Mahogany is a red wood, and many Eucalypts are redder than the Red Wood—but Sequoia!—there is but one Sequoia—that is, there is but one genus of that name, but that genus is a veritable Anak. Its only two species are the Red Wood and the Wellingtonia, or the Washingtonia, both of California—are not these sons of Anak in point of size? WELLINGTON was a great man, so was WASHINGTON, but SEQUOIA? ENDLICHER, who in 1847 founded the genus, does not tell us why he named it thus, but those learned in the ways of the North American Indians tell us that SEQUOIA was in his way as remarkable a man as either of the two heroes above mentioned. He was a Cherokee Indian—or a half-breed—and it is related of him that he invented an alphabet appropriate to the language of the Cherokees, and most of us can recognise that this was a great feat.

Anxious that some memorial should be raised to the memory of such a man, inquiry was made to ascertain where he lay. "But no man [could] point out the spot where moulders the dust of the Cherokee Cadmus." It was, however, pointed out that an Austrian botanist had already conferred immortality on SEE-QUA-YAH by naming a genus after him, and the fame of the Cherokee linguist is thus enshrined in the Sequoia of the botanist.

It is strange, as we said, that one small genus of two species should be made to commemorate three such diverse personalities as SEE-QUA-YAH, WASHINGTON, and WELLINGTON. Between two of these and the third there could have been little in common, but all three had this negative correlation—that they were not botanists, nor the patrons of botanists; so that their title to commemoration from this point of view is a "courtesy title" indeed!

Be all this as it may, the Red Wood of California is certainly the Sequoia sempervirens of the botanists, and it is happy beyond most plants in not being burdened with many synonyms. This shows that substantial consensus of opinion has been attained as to what the name should be. The Red Wood is a native of California, forming forests on, and at no great distance from, the coasts, from latitude 42°, nearly to the Mexican boundary. It extends inland up the cañons, where it is swathed in fog, and rarely extends to any great elevation on the mountains. Cultivators, please note the conditions under which the plant grows naturally!

It forms a straight, cylindrical trunk, "festooned and ornamented, rather than loaded with branches" (Newberry). The foliage is like that of the Yew, dark-green above, whitish beneath. The cones are 1 to 2 inches in length, not unlike those of the Cypress.

In point of dimensions the tree almost, if not quite, rivals, its brother the mammoth tree, the Sequoia gigantea of botanists, the Wellingtonia of our gardens. Three hundred feet is spoken of as a not unusual height for it to attain to. In point of age, 1500 rings have been actually

counted, and there is no reasonable doubt that, close to the heart of some of these trees, may be found the ring formed in the year of the Nativity. What living contemporaries of this event, other than a few trees, can be cited? Its red, soft, fibrous bark is very like that of the Wellingtonia, and is so little inflammable, that it serves to preserve the tree amid those devastating fires that tree lovers and patriots bemoan. In point of utility the Red Wood, though "second in size is first in importance." While the timber of the mammoth trees is relatively soft and useless, that of the Red Wood is one of the most valuable woods in all California, that land of "lumbermen." It is much used for roofing houses, also for buildings generally, for railway uses, and for purposes where its freedom from resin is advantageous, as in wine casks, tan-pits, cigar boxes, &c.

Unhappily reckless felling is doing its work here as in other countries. This is not so destructive in the present case as in some other trees, owing to a peculiarity of growth, to which we shall afterwards refer, but with reference to the mammoth trees, the Sugar Pines, and that host of trees which form the glory of the Sierras, it would seem that the prophecy of Isaiah, fulfilled in Palestine, would be equally true in a land of which the prophet knew nothing:—"And the remnant of the trees of his forest shall be few, that a child may write them." *Is.* x., 19.

The species was discovered by Menzies in 1796—not a hundred years ago—how many æons had it been there before his time? In what geologists call miocene times—times which they call comparatively recent, but which are ancient beyond the power of man's mind to conceive—in such times the Red Wood was in existence—and in existence, too, in our own continent, in Greenland, in Iceland, in Alaska, which is very significant, from the point of view of its present distribution, and even in our own island. When one considers what must have taken place on this planet before those times, and what prodigious changes have occurred—what incalculable time has elapsed, the history of a nation—the record of all the series of nations put together—seem by comparison to have been accomplished in a day.

Of course, the fact of the occurrence of the Sequoia in these rocks in a form to all appearance absolutely indistinguishable from the still existing plant, sets the speculators and those that are always asking questions to work. Why is the Red Wood now confined to a narrow belt along the Californian shores—there, and nowhere else on the present surface of the globe? How and why did it once flourish in Europe and the other countries where it is found in a fossil state? Why is it not there now, and so on? The discussions and arguments are interesting, nay, fascinating; and whatever the direct result, certain it is, that indirectly they are vastly profitable towards the advancement of knowledge.

We shall not attempt to enter into the subject here; it would take up far too much space and time. Ours is the more practical task of calling attention to the tree from a cultural point of view. Those who wish to know more of the history of the tree and the deductions to be drawn from it, will find what they want in geological treatises, in works on fossil botany, and specially in the late Andrew Murray's papers in this journal, 1866, and in Asa Gray's "Sequoia and its History," reprinted in the second volume of his *Scientific Papers*, as edited by Professor Sargent.

It is fifty years since the tree was introduced into cultivation here, and experience has shown that although its young growths are occasionally cut by frosts, more damage is done by wind. A sheltered, low-lying position, a rich, damp, but well-drained soil, these are the conditions that seem to suit it best, and these are just the conditions under which we might have expected it to thrive from a consideration of the circumstances under which the plant grows naturally. All travellers speak of the tree as frequently engulfed in fog, and where it can get the benefit of this moisture it is the predominant tree, higher up, above the fog line, it mingles with the Douglas Fir, and others. There must be many a district in the



Fig. 60.—Redwood: how they measure trees in California.

south-west, in Ireland, and the west coast of Scotland, where the requisite conditions are sufficiently nearly forthcoming for its successful culture.

So long ago as 1863, the tree had attained a height of 58 feet at Castle Martyr, near Cork; at Essendon, Herts, it was noted in 1866 to be 55 feet. At Crieff, where it was planted in 1871, its height, two years ago, was 31 feet. At Kenfield (Kent), a tree planted in 1854, had attained 60 feet in 1884. At Eastnor, Mr. Coleman recorded its height, in 1886, to be 70 feet; while at Dropmore, in the same year, it was noted at 80 feet. At Linton Park a tree planted in 1846 was, in 1877, 44 feet in height, the average rate of growth being about 18 inches per annum. Very likely the tree has in many places suffered from the destruction of its leader from frost or other causes; this, however, would not materially affect the cubic bulk of timber the tree is capable of producing, as it has a faculty remarkable among Conifers of producing new shoots, and even felled trees sprout along the whole length of the prostrate trunks, as we have witnessed in Mr. NOBLE'S nursery, at Bagshot, and, as travellers tell us, they do on a large scale in Californian forests. Moreover, the tree has the faculty of producing from the cut stump a veritable forest of shoots, which leads us to recommend the culture of the tree for coppice or covert purposes. Indeed, if our memory serves us aright, it has been grown for hop-poles in some parts of Kent and Sussex.

We have seen how valuable the timber is in California, but we have no record of its properties in this respect in this country, though doubtless some few trees have been already felled and converted. It would be interesting if some of our correspondents would give their experience as to the height attained, the quantity and quality of the timber, and other particulars relating to this most interesting tree. What we do know of it as a timber tree, leads us to commend it for the particular kind of locality mentioned, and as it is easily propagated and grows rapidly, the initial cost would be small.

As an ornamental evergreen it is of value for the sake of variety, and the sweeping curve of its branches is very elegant; still it cannot, in our opinion, be placed in the first class in this particular.

The tree shown in our illustration (fig. 60) grows in the Santa Cruz Mountains, south of San Francisco, and is denominated The Giant. The measurements given are—total height, 366 feet [formerly], but, owing to injury, now 296 feet; circumference (at what height is not stated), 60 feet. The mode of measuring the girth as represented is perhaps not quite so accurate as with the tape, but sufficiently so for the purposes of the measurers, and if it inspire them with a wholesome respect for the trees, as one would think it must do, we shall not hear in the future so many laments as to the wanton destruction of these patriarchs. Self interest alone will surely check the reckless waste of resources which, by all accounts, has characterised the youngest, as it did the oldest nations on the globe. With the photographs, the following letter from Mr. W. BARROW, containing interesting particulars, has been obligingly communicated to us:—

"The Red Wood is found in the Santa Cruz Mountains, seven miles from here (Santa Cruz). As you go up the incline by rail up the valley, you see plenty of smaller trees (Red Wood) on the way; but the chief place is in a grove seven miles off, where you get off the train, and see a number of giants that the woodman has spared. The photograph shows the base of one called The Giant. In the front are fourteen people taking hands in a ring, showing how they encircled the trunk quite close, and then came to the front to show the actual space occupied by the base. I have walked round myself, and make it about 60 feet round the base, and the tree is 300 feet high. I think 60 feet fell down some time ago, making the full height about 360 feet. The other photograph is taken of the same tree, but about 1 foot from the ground, and gives you a better idea of the girth. There is no exaggeration in the figures, as I have seen myself. There are some of the trees that are a group of large trees all starting from one base. I have seen nine and ten trees all starting from one base, and going straight up, like cathedral spires, with a diameter of 10 feet each. They are cutting a tree, that is going to the world's fair in Chicago; of course, only a section will go; the diameter is 33 feet, and circumference 66 feet—said to be the largest in California. As to age, I was talking to a woodman in the forest who was sawing a monster that he had felled—260 feet long, and only a moderate-sized tree. He claimed 1500 years for the one he was sawing, and says they claim 2000 to as high as 8000 years for the biggest. I cannot quite take this in, but the rings ought to prove it. Anyhow, it would seem that we might take 2000 years. The wood is red, and very brittle when split with the grain; but in thick pile it is very strong. It would not do to use for foot-boards in the streets, as the friction of the passengers would soon wear it away; but it is useful for house building and on railway lines. It is most frequently about 100 feet up the stem before the first bough appears; but in favourable situations, that is, when not so crowded, the boughs start about 20 feet from the ground. There is a peculiar feature about this tree. When a big tree with only one stem is cut clean off, 2 or 3 feet from the ground, a series of small trees will commence to spring up all round the base, that is, not from the roots, but out of the base left, and will grow into a circle of lofty trees in time. It is a grand sight to see lots of these trees about, and they make a nice place to picnic in."

GLADIOLI AT THE ROYAL HORTICULTURAL SOCIETY.—To have gathered together so considerable an audience as that which assembled at the Drill Hall on Tuesday last, in the beginning of September, is a feat. It shows that the Society is gradually interesting its Fellows in its work. Of the show, which was naturally small, mention is made in another column. We have used the word "show," but this is rather misleading, as applied to the objects exhibited for the judgment of the several committees. Great interest was felt in the paper of M. LEMOINE on Gladioli. M. LEMOINE is so skilled a hybridiser that anything he says is likely to be listened to with interest. So it was on this occasion when he detailed the procedures which had led to his last triumph of raising a new race of hardy Gladioli. The "Eve" of this series was G. purpureo-auratus, imported by Mr. W. BULL in 1870. This was crossed with gandavensis×, a cross between psittacinus and cardinalis, the object being to obtain the hardy character of the one parent with the brilliancy of colouring of the other. Victor Lemoine, Marie Lemoine, and others were the result of these crosses, which, in their turn, were refertilised with the pollen of gandavensis× and others with Saundersianus, whence originated the race known as Nanceianus×, of which "President Carnot" may be taken as a typical illustration. Among the series exhibited by M. LEMOINE was a so-called blue variety, or, rather, one of a blueish-lilac colour, but in any case of quite a different colour from anything known previously in the genus. The colour is probably due to the dilution of the purple colour of G. purpureo-auratus and its admixture with other hues. We look forward to the publication of M. LEMOINE'S paper with great interest. If ever a man has earned a Botanical Certificate he has. A First-class Certificate, in our opinion, by no means meets the case—that should be reserved for subsequent developments, but the man who originates a new race by scientific methods is not only a cultivator, but a physiological botanist, and his merits should be recognised as such quite independently of his achievements in practical Horticulture. The new Gladioli are hardy, with the slightest protection at Nancy, where the winters are more severe than they are here, where they need no protection at all. They flower earlier than the Gandavensis breed, grow in almost any description of soil, and need not be lifted annually. Mr. KELWAY'S paper dealt with the derivatives from G. psittacinus, namely the Gandavensis set, such splendid samples of which he exhibits from time to time, and of which a fine collection was displayed on this occasion. Mr. KELWAY'S paper dealt with the history and method of cultivation of the plant, but unfortunately the paper was read in so low a tone as not to be audible. Gladiolus cultivators will eagerly await the publication of the paper of so renowned a practitioner. It was most fitting that the chair should have been occupied on this occasion by the Rev. H. H. D'OMBRAIN, the oldest amateur exhibitor of these plants, and the author of the only treatise in English on their cultivation. To him, as he said, the progress made in the last thirty years was marvellous. At one time, if they had three or four flowers open at once—"pips" was the word used by that zealous florist—they were content; but now fourteen to sixteen were looked for. Beyond the speech of the Chairman no discussion took place, though both papers, so far as we could hear them, bristled with subjects for comment, and not a few practical growers were present who could have contributed advantageously to the discussion, had they been forewarned as to what was likely to be said. Mr. GOLDRING showed flowers of a new, supposed hybrid between G. dracocephalus and gandavensis ×, the flowers of which were thickly spotted with red on a yellow ground.

THE DOUBLE COCOA-NUT.—There are several Nuts of this extraordinary Palm, Lodoicea Seychellarum, in an advanced stage of germination at Kew. One of them has already produced a leaf, and has a mass of healthy roots, whilst two others are bursting into leaf. There is now, therefore, a prospect of our seeing this Palm among the many species which are the most striking features in the great Palm-house. The process of germination in the Lodoicea is exceptionally slow. In its native habitat the Nut is said to be about two years, after falling on to the ground, before it produces its first leaf. The leaf on the Kew seedling is 2½ ft. long by 2 ft. broad, and it is folded double laterally, so that if spread out it would measure 4 feet. It is divided along the top into about forty segments; the texture is unusually stiff and leathery even for a Palm.

BRITISH ASSOCIATION. — Professor MARSHALL WARD introduced the subject of botanical teaching at great length. He said that botany ought to be taught in schools because of the interest which the subject aroused in the mind of a child, and the ease with which it could be taught. The study of botany cultivated and stimulated those powers of accurate observation and comparison, and conscientious recording of results so much needed by all, and which came naturally to children, who were not too much under the bane of a mere instruction system. The value of such teaching was not to be measured by the number and kind of facts remembered, any more than historical knowledge consisted of being able to remember the dates of battles and other events. The elements of botany afforded to the teacher the cheapest, the cleanest, and the most convenient means of cultivating in young children the power of observation and comparison direct with Nature, and afterwards teaching them to generalise. At present in colleges and other special institutions there was a great waste of time in the case of students, who went insufficiently prepared for the work, and this applied no less to physics and chemistry than to natural history and botany. The only remedy for this state of things was for teachers to leave the blind worship of

facts which at present dominated schools, and, instead of measuring a scholar's progress by the amount of dogmatic information which he imbibed and put into an examination paper, look to his understanding the relation between facts, thus paying less attention to *data*, and more to the inferences to be drawn from them, and the way in which he intelligently described what he saw. Let the teacher try the experiment of imparting the lesson direct from Nature, and it would be found that the new exercise would have a good effect. The discussion was continued by Professor Frank Oliver, Dr. Forsyth, Professor Green, Professor Horton, Professor Hillhouse, and Professor Geddes.

STOCK-TAKING: AUGUST.—The usual monthly returns are to hand, and whilst showing a decrease under the head of imports for the month, amounting in the whole to £1,614,191, and on the eight months to £5,465,710, show on the export side of account a gain of £1,418,102, compared with the same month last year, and of £11,761,192 compared with the same period in 1889. These exports, it may be noted, are of British and Irish produce and manufactures; the exports of foreign and colonial produce to our customers for such, shows a falling off for the month, but an increase on the eight months. The following figures are extracted from the summary of imports for the month of August:—

	1889.	1890.	Difference.
	£.	£.	£.
Total value of imports	32,937,088	31,322,897	—1,614,191
§II.—(A.) Articles of food and drink—duty free	11,520,771	11,187,665	—333,106
(B.) — do., dutiable	1,797,824	1,998,108	—200,284
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	3,313,450	3,011,132	—302,318
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,985,328	4,137,800	—847,528
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,068,554	969,110	—99,444
(B.)—Parcel Post ...	35,060	32,106	—2,954

There continues here, as in most other countries where employers and employed have learnt how to combine, a certain number of strikes of varying degrees of magnitude. Of course both import and export trade are affected thereby; but possibly some "average of variation" is now worked upon by them in reckoning the chances. Annexed is our usual excerpt from the general figures in the returns having the nearest interest for our growers of fruits and vegetables:—

	1889.	1890.	Difference
§ II. Fruit:—			
Apples, raw ... ... bush.	202,972	126,270	—66,702
Unenumerated, raw ... ,,	656,592	675,893	+19,301
Onions ... ... ,,	347,222	339,219	—8,003
Potatos ... ... cwt.	39,701	17,008	—22,963
Vegetables, raw, unenumerated ... ... Value	£69,578	£97,031	+£27,453

Possibly these last extracts may be noted with closer attention as the year "builds up its total" in connection with the ascertained results of our British crops.

THE COCOA-NUT TRADE IN TAHITI.—The following note is from a consular report on the trade of Tahiti for the year 1889:—Notwithstanding the destruction of many Cocoa-nut trees by a storm which raged in the early part of this year, and the loss of innumerable nuts by a blight, which still prevails, there is an excess over last year of about 1500 tons in the quantity of copra exported. Less dessicated Cocoa-nut has been manufactured, but more Cocoa-nuts have been sent to confectioners in San Francisco.

PUBLICATIONS RECEIVED.—*Sap; Does it Rise from the Roots?* By J. A. REEVES. (London: G. KENNING, 16 and 16A, Great Queen Street, W.C.)—*Fruit Farming for Profit (up to date).* By G BUNYARD, Maidstone.—*Manual of Injurious Insects*, 2nd ed. Miss ORMEROD. (Simpkin, Marshall & Co.)

FRUIT PRODUCTION IN IRELAND.*

As many of you are aware, we devoted the greater part of the month of August to the work in hand, and I would mention, as a matter of some importance, that our inquiries extended from the counties of Antrim and Derry in the north, to Cork, Kerry, and Waterford, which form the southern seaboard. In this tour, which involved travelling nearly 900 miles by rail and car, we saw much to deplore in the present condition of fruit culture, and not a little that filled us with hopefulness as to the possibilities of the industry. We met also with much kindness and great interest in the object we had in view, and an evident desire on the part of those with whom we came in contact to render all the assistance possible. Commencing our inquiries in Ulster, we soon found ourselves on farms that would bear a favourable comparison with the best holdings in England. We found also in this province that orchard planting had not been altogether neglected in the past, and that on many of the farms there were considerable breadths of Apple trees. On examining the orchards in Antrim and Armagh, we found that whilst the utmost care and skill had been brought to bear upon the Wheat, Oats, Flax, and other staple crops, it had been thought sufficient to simply plant the trees and leave the rest to Nature. When I tell you that the greater part of these orchards were planted from seventy to eighty years ago, and have since been practically left to themselves, you will readily understand that they give a very poor return. As a matter of fact, the majority consist of old worn-out trees, bearing plentiful crops of lichen and moss, with but little fruit, and that of the most inferior description. Not only are thousands of trees utterly exhausted, but a considerable proportion represent local varieties of the most inferior description, and therefore quite unfit for sending to markets in which the finer kinds make their appearance. We were repeatedly told by those who were old enough to remember the orchards when the trees were in a vigorous condition, that they had now ceased to bear satisfactorily because of a change in the climatic conditions, whereas the cause, as you so well know, is the exhaustion of the trees in consequence of old age and an impoverished condition of the soil. We saw but few signs of these old orchards being replaced by new ones. Here and there a few trees had been planted during the past few years; but instead of their having fresh ground they had almost invariably been planted in the positions occupied by trees that had died out. As might have been expected, they had become a prey to mildew, lichens, and mosses, and presented a miserable starved appearance. Had we taken a superficial view of the case as presented to us in Antrim and Armagh, where Apple orchards occupy much space in proportion to their area, we should perhaps have regarded the production of first-class fruit in these counties as an impossibility. Knowing from practical experience and wide observation that the condition of the greater proportion of the orchards was due to old age and want of attention, we sought those which had a reputation in the several districts for the excellence of their fruit. We turned our attention also to gardens near at hand that were under the charge of men who had received a training in fruit culture. In the orchards that were in a fruitful condition we found the trees to be much below the average in age, and to have received some attention in the way of pruning and manuring. The gardens, however, afforded the best indications of the possibilities of fruit culture, not only in Ulster, but in the whole of Ireland.

Proceeding southwards we passed through a district on the boundaries of the counties of Meath and Dublin, in which fruit growing is carried out on much the same lines as in the market gardens in the neighbourhood of London. In Ulster, the whole of the orchards were in grass, but here the Apple and other standard fruit trees were planted at wide distances apart, and the intervening spaces filled with Gooseberries, Currants, and Raspberries. The whole of the standard trees were in a healthy state, showing that they received proper attention, but the crop was comparatively light, and as we were assured by those who were well acquainted with them much below the average. The various bush fruits presented the most satisfactory appearance, and had as usual borne heavy crops. It may here be stated that throughout the whole of Ireland, excepting of course in the mountainous districts, the whole of the bush fruits grow vigorously and bear heavily, the fruit being of the finest possible quality. No better crops of Currants and Gooseberries could possibly be desired than those we met with both in the north and south. For many years Gooseberries were rather largely imported, but they are now being planted somewhat extensively in one or two districts in Ulster, and they appear to be yielding satisfactory returns. The district between Drogheda and Gormanstown is not only remarkable as representing the most advanced stage of commercial fruit culture in Ireland, but it is distinguished by the general prosperity that prevails on all sides. In no other part of Ireland did we see the labouring classes so well dressed, or having such comfortable well-kept houses as in the neighbourhood of Gormanstown, and it is fair to assume that the air of prosperity is chiefly due to the profitable character of fruit culture as there carried out.

South of Dublin the orchards on farms are comparatively few in number, and, as in the case of those in the north, they are chiefly furnished with old trees, more remarkable for the picturesque appearance of their lichen-laden branches than for their fruitfulness. But from the appearance of the orchards attached to the homesteads of some of the landed proprietors, and the condition of the trees in large gardens, it is evident that Apples of the finest quality might be profitably grown in many districts in the several counties between Dublin and Cork. In the Golden Vale there is ample evidence of the practicability of growing Apples of the finest quality, and here we met with an instance of the way in which suitable land might be increased by the judicious planting of fruit trees. On a large estate in which the rent of much of the land does not exceed 10*s.* per acre, there are several orchards that are let at a rent of about £3 per acre, which was not regarded by the tenants as in any way excessive. Here we found in full force the barbarous practice which obtains throughout Ireland of shaking the Apples from the tree, with the result that the greater proportion are bruised and rendered worthless for keeping beyond a few days. To gather the fruit by hand is considered a waste of time. We inquired of a young lady who was busily engaged in shaking down the fruit, how she secured the Apples that could not be shaken off, and she at once replied, "We knock them down with a long pole." In the valley of the Suir between Limerick Junction and Waterford, much of the soil and many of the situations are suitable for Apples. At one time cider of excellent quality was manufactured from Apples produced in this district, but the trees appear to have been allowed to die out. Whether the manufacture of cider was profitable or not, we could not ascertain, but the fact that there were recently large breadths of free-bearing Apple trees is a proof that the district is on the whole well suited to their cultivation.

In speaking of the possibilities of fruit culture in Ireland, we are anxious to be as guarded as possible in any expression of opinion. We should, however fail in our duty were we not to state in the most

* By Messrs. George Gordon and Lewis Castle. Read at the Conference of British Fruit Growers' Association, Crystal Palace, September 5, by Mr. Gordon.

emphatic manner that there is room, not only for improvement, but for an enormous development of the industry. There is no reason, apart from the apathy of the people, why Ireland should not only be independent of America and other countries for its supplies of Apples, but be in a position to export large quantities of that important fruit. We know that it receives immense quantities of American Apples during the winter and spring months, and in August we saw considerable quantities of Tasmanian Apples in the shops. There is evidently a good demand for Apples, and it is assuredly not a satisfactory state of things for the Irish people to import from countries some thousands of miles distant, fruit that can be produced at home. The climate is admirably adapted to the growth of Apples, the heavy rainfall and the atmospheric humidity being favourable to the production of fruit large in size and clear in the skin. Cultivators not well acquainted with the conditions that obtain, regard the atmospheric humidity as fatal to success. They, in fact, consider the ripening of the wood and the formation of the flower-buds an impossibility with an annual rainfall of 40 inches. As the result of our observations and inquiries, I have to tell you that there is but little difficulty as to the maturation of the wood. On the shores of Lough Neagh, with an annual rainfall of about 35 inches, we saw in gardens and orchards under the charge of experienced cultivators heavy crops of all our best kinds of Apples. The fruit was not only plentiful, but of the largest size and finest quality. I was particularly struck with the crop of Stirling Castle, which was then being gathered for market, the price realised in Belfast being 16*s.* per cwt. The finest of our dessert and kitchen Apples were also met with in the most productive condition some 10 miles south of Cork, where the annual rainfall averages 45 inches. In a fruit garden in the last-named county, Pears were bearing not less satisfactorily in the open quarters than were the Apples, the fruit of many of the varieties being equal to the finest samples received from the Channel Islands. Pears, Plums, and Cherries have so small a space in orchards, and are so generally grown against walls in gardens, that the extent to which they can be successfully cultivated in the open cannot at present be satisfactorily determined. It is a question well worthy of the attention of those who have opportunities for experimental culture. The probability is, that they might in many districts be grown with considerable success. Inquiring of one cultivator whether he had many Damson trees, he said, "No; I have only two, but these usually produce about 3 cwt. of fruit each." The excessive moisture of the atmosphere is highly favourable to the growth of both mosses and lichens, more particularly the latter. They quickly attach themselves to the fruit trees, and when allowed to remain undisturbed, they soon cover the whole of the branches, and impose a check upon the growth, but evidently not so severe as might be imagined. [Except as a lair for insects they do little harm. ED] To keep the tree free from both lichens and mosses is by no means difficult. We had a proof of this in a garden belonging to a merchant, who devotes much attention to fruit-culture. The garden contains comparatively large collections of Apples and Pears. The trees were all bearing heavy crops, and the fruit was so finely developed, that it was not surprising to find the proprietor regarding fruit of Warner's King weighing 1 lb. each as by no means exceptional. The point, however, that I wish to bring out is the fact, that there were no traces of either moss or lichen on the trees, and the immunity from these plagues was due to the trees being annually painted with a mixture of which clay, lime, and paraffin form parts. The cost is practically nothing, and the trees were equal to any that could be found in Kent.

To effect a general improvement in the condition of fruit culture in Ireland will be slow work, but with well-directed efforts I have no doubt as to the ultimate success. We must first endeavour to create an interest among the owners of land, whether they be private individuals or corporative bodies such as the great City companies. Probably one of the best means for doing this will be to show, as in our report we shall be able to do, that many of the districts are well adapted to fruit culture, and that by judicious planting and management the value of the land may be greatly enhanced. What is especially wanted is the planting of experimental orchards on large estates in various parts of the kingdom. These are required for the purpose of testing the relative merits of varieties for the respective districts, and training young men in the management of orchards, and the marketing of the fruit. The cost of planting from 10 to 20 acres with fruit



FIG. 61.—SEQUOIA SEMPERVIRENS (REDWOOD). p. 302.

trees would not be great, and whilst giving a good return annually, the plantation would form a practical school of immense value. The conditions under which farms are now held are favourable to the planting of fruit trees, but in the present state of their knowledge it is hopeless to expect tenant farmers to plant largely. Nor is it desirable they should do so until they have had opportunities for acquiring sufficient knowledge to engage in the work with the full assurance of success. Knowing how fruit culture may be made to increase the wealth of many districts, we are naturally anxious that there should be as few mistakes as possible. It would also



FIG. 62.—FOSSIL SEQUOIA SEMPERVIRENS (REDWOOD). p. 302.

be an enormous advantage if, in conjunction with these experimental plantations, the bottling and preserving of the soft fruits were carried on exactly as in the case of Lord Sudeley's fruit farm at Toddington, as it is essential that the utilisation, as well as the production of fruit, should receive a full share of attention. In the meantime much might be done to show that existing orchards may be greatly increased in value by judicious thinning of trees, by regrafting worthless kinds still vigorous with the finest sorts, by manuring trees that are in an exhausted condition, and by keeping the wood free from lichen and moss by application of limewash or other suitable dressing.

It is not only desirable that there should be an extension and improvement in the culture of fruit for market, but the fruit trees should be planted more extensively on small farms and in cottage gardens for home supply. At the present time this phase of fruit culture receives but scant attention. Mr. Bullock Hall, one of our Vice-Presidents, has for several years past been doing much to promote the planting of fruit trees in Ireland, and has generously distributed large numbers amongst various classes of the community in the south. He is still engaged in the good work with such modification as experience has suggested, and it was gratifying to hear how greatly the majority of those who had received trees appreciated them.

HOME CORRESPONDENCE.

TOMATO DISEASE.—Your correspondent, "R. D.," p. 279, asks, does the culture of Potatos near to Tomatos assist the spread of the disease? In my opinion it unquestionably does. Twenty-five years ago, I had a dwarf wall of Tomatos here looking most promising; but on the south-west side of them was an acre of Regent Potatos—a favourite kind in those days, but subject to disease, which attacked them very badly that season, beginning in a damp shady corner, and spreading over the entire plantation in a few days. The wind was south-west, and I could distinctly trace its progress day after day, and then it spread to the Tomatos, which went off as if they had been shrivelled or scorched by fire; and to my mind, then and now, it clearly indicated that the disease spread from the Potatos. The appearance and smell was the same, and from that day till now I keep them as wide apart as possible. But one need not wonder at Tomatos not doing well this season, when I may safely say that there has not been a month this summer without frost more or less in the valleys of Sussex. I have this year in many instances seen the folly of planting Potatos in low-lying localities, whereas on breezy knolls and lighter land the produce will be satisfactory; indeed, in one garden surrounded by trees and a low locality, they will not get their seed, and, more favourably situated, they will sell enough to help out with the rent. I ought to mention that our prevailing wind here is south-west. *J. Rust, Eridge Castle.*

DAHLIA HENRY PATRICK.—Among the white Cactus Dahlias, Henry Patrick is one of the best, as it is white from the first, whereas Mr. Tait shows stains of colour, and not only so, but the blooms do not spread themselves out from among the foliage, and have short stalks, while those of Henry Patrick are borne clear on long ones, which make them of more value for cutting-glasses. They are also good for purposes to which Guiding Star is put, and of great value for growing in borders, as it is less stiff in habit than most other Dahlias, and the flowers contrast well with the scarlet one of D. Juarezii. The two, when placed together in vases, or separated but near, have a telling effect. *J. S.*

MILITARY BOTANY.—The late General Eyre was an enthusiastic botanist and naturalist. After his death several of his books came into my possession, viz., Withering's *British Botany*, 4 vols.; Lindley's *Introduction to the Natural System of Botany*; Meyen's *Botanical Geography*; Kirby's and Spence's *Etymology*, &c. *James McRonald, Chichester.* [Colonel Champion should also have been mentioned as well as General Walker, both of whom did good work in Ceylon. ED.]

EARLY CABBAGES.—For several years the market gardeners around Aberdeen have grown for early use Myatt's Early Cabbage as the best, earliest, and most useful variety. It has been tested against Mein's No. 1, Ellam's, and other sorts, and has always beat them for earliness and quality. *A.*

MONTBRETIAS.—Years ago the good old Montbretia, or as it was then called Tritonia aurea, used to be grown in pots, and was considered a tender greenhouse plant, and unless in skilful hands, was seldom seen in a really healthy condition, as the foliage was generally affected with red spider, an insect to which, when under glass, this Tritonia is very subject to; but in the open it is rarely attacked, and comes much finer, the growth being very strong and the spikes of bloom large and bold. Besides the one referred to, there are now several varieties that eclipse this well-known favourite, the best that I have seen being M. Boule de Feu and M. Pottsii, both of which are very brilliant and of a different hue to M. aurea, the three being very showy and of great value for cutting, as

they dress up well in glasses and last longer in perfection. The most suitable situation for growing them in is a narrow border under a sunny wall, where they should have a light rich sandy soil, and when once planted they should never be disturbed, but top-dressed in the autumn to bury the bulbous rhizomes deeper, and thus render them safe against frost. All the Montbretias increase quickly and readily by means of the roots and crowns that spread about, and they also seed freely. *J. Sheppard.*

MAPLES.—Gardens have of late years been enriched by many new Acers, introduced from abroad, some of which are very beautiful, not only in the form and colour of the foliage of the greater number. One of the most attractive in these respects is A. japonicum var. aureum, which is very distinct, the leaves being many lobed, and of a soft pale yellow, with rose-tinted stalks, the contrast between the two being pleasing and striking. A. palmatum, and the many forms of it, are brilliant in leaf-coloration, and remarkable for their elegance; they are very valuable as pot plants to mix in groups of other plants. At one time these Acers were supposed to be too tender to stand our climate outdoors; but all that they require is a warm sheltered position, as starting into growth early in the spring, they are apt to be cut by spring frosts or cold winds. The best way to manage them is to get plants in pots, and plant out in some suitable situation, as the foreground beds of tall evergreen dark shrubs, and if Gold or Silver Hollies are near, the effects produced by nearness are very nice. Those who would see them at their best should visit the nursery of Messrs. Veitch, at Coombe Wood, where, though the soil is not particularly favourable to their growth, they flourish and make a grand show. *J. S.*

ACCLIMATISATION.—This subject seems to be occupying the minds of a good many people just now, but inasmuch as the discussion in your columns has been both useful and interesting, there is still open a wide field for contemplation. For a considerable time I have been interested in the matter, more particularly with bulbs and seeds from Ceylon, South Australia, and South America, this country being the intermediate station, their ultimate destination being Scotland. Our object is to acclimatise a few species which are hardy in the above-named places—to a Scotch climate—and although tolerably successful so far, I have a kind of misgiving that we shall not accomplish very wonderful things, but I will furnish you with the result of our experiment at a future date. I am inclined to agree with Mr. Ellacombe with regard to acclimatisation of plants, except through the agency of seeding; but I will mention an instance that came under my observation quite recently. Last October a lot of hardy plants had to be removed a distance through change of residence, and by an accident two Ophiopogon jaburan aureo var. got mixed with them and planted on an east border. This spring the Ophiopogons made their appearance, and grew into models of what a table plant should be. They had hitherto been growing in a cold greenhouse, where on several occasions a few degrees of frost got into the house. As this is the first time to my knowledge of its surviving an English winter, it might reasonably be supposed that this treatment had something to do with its subsequent hardiness. On this point, however, I am still sceptical, and think the plant proving itself hardy is one of its natural characteristics and nothing more. *G. B. Claydon, Holbecks Park.*

OUT-OF-DOORS TOMATOS AND DISEASE.—I have read with interest your correspondent "R. D.'s" remarks, p. 279, on Tomatos in the open air. My opinion is that disease-stricken Potatos growing near Tomatos does assist the spread of the disease, and should, if possible, be avoided; and not only does it affect Tomatos in the open air, but also in houses that stand in the midst of Potato crops. For instance, I have two houses, in which I have grown this season splendid early crops of Tomato, with no sign whatever of disease, fruit being cut before the disease made its appearance on the Potato crops. I have other large houses that are badly stricken with disease; and these houses are encircled by diseased Potato crops. To my mind the disease-spores would easily be admitted through the front and top ventilator. *S. G. F.*

[One of the diseases of the Tomato is identical with that of the Potato, the other is somewhat similar in its appearance and effects. The same climatic conditions are as favourable to the one as to the other. Ed.]



Fig. 63.—Group of redwood trees in californian forest. (see p. 302.)

WHEAT GROWING.—Now will be a good time to select the best ripened, largest, and most productive variety of the Wheat which has been grown on the richest soils for future sowings, as the larger the grain sown the better the returns to the farmer; also for the consumers, by increasing their physical strength. (He fed them, the Children of Israel, with the finest flour of wheat). Perhaps erroneously explained, and one reason why the pulp of the grain is extracted for bread making. The selection of seed should be done annually, to keep the grain from deteriorating in size and quality. Store dry. It will be best to keep the rollers off the fields when the young blades are above ground, or they will be liable to be bruised and injured by the heavy rollers passing over them. To secure the best results, with certainty of crops, see *Malachi*, 3rd chap., also to prevent the ravages of the Phylloxera in vineyards. *E. Cording, Effra Nursery, West Norwood.*

THE NATIONAL FLOWER OF U.S.A.—The subject of Mr. G. F. Wilson's brief note in a recent issue has been, and is being much discussed in the New York papers. Very many flowers have been suggested, but nearly all of them are already utilised by other countries, and the U.S.A. is hardly likely to play second fiddle in such a patriotic matter. In the *New York Sun* recently, Mr. V. H. McRae discussed the claims of Magnolia grandiflora in a very categorical manner. As the subject is one of very great general interest, I cannot do better than quote his arguments without abbreviation:—

"1. Its name, Magnolia grandiflora, inspires a sort of respect and constitutes a plea in its behalf.

"2. Its aspect, whether found in a jungle, where it towers above its fellows, or transplanted to open sunny situations, is always lordly and grandiose.

"3. It is not only majestic, but beautiful, its polished dark green leaves presenting a pleasing contrast to its pure blossoms.

"4. It is a perennial or evergreen plant, significant of the unfailing, well-ordered form of law in this country which, under most circumstances, has proved adequate to the purposes for which it was created.

"5. Its perfume, so penetrating that a tree of its kind diffuses its sweets over an area with a radius of half a mile, yet so wholesome and tonic that it freshens and restores instead of enervating or overpowering the system, typifies the blessings proceeding from a popular form of government which confers the greatest good on the greatest number.

"6. It is indigenous. Not an exotic that requires to be persuaded to live by artificial processes, but firmly penetrating its native soil and raising its giant arms to shelter and defend creatures that seek its aid. It assumes different characteristics under the varying phases of Nature. For instance, in this latitude its blooms assume a purplish hue, but its organism is always vigorous. I have seen a specimen of this tree whose branches shaded a thousand sheep."

All these claims are confirmed and much strengthened by the following advantages of a negative character:—

"1. It is not the symbol of any other Government.

"2. It is not a grovelling, creeping thing, with no power to stand like a man, or hurl defiance like an Oak, to the storm, nor does it wither at the touch, as most flowers; but it holds its own, the blossom retaining its odour, the leaves their verdure, even after these have been long severed from the tree.

"3. It does not exhale noxious or mephitic vapours, as do the Ailanthus, the Marigold, the Dahlia, the Ampelopsis (or Virginia Creeper), the Poppy, and other plants. A plant of malodorous nature would be too suggestive of a national fault or crime, such as Mormonism, idolatry, cannibalism, or inordinate love of war.

"4. It is not armed with spikes, thorns, or prickles, which often symbolise turbulence, cruelty, and revenge."

Truly, after this, there ought to be no difficulty among Americans in selecting a flower to symbolise their hopes and aspirations! *W. Roberts*, 63, *Chancery Lane, W.C.*

GRAPES AT RAVELSTON.—In answer to the query raised last week, it is possible that the supposed variety of Foster's Seedling may prove to be White Tokay, which is sometimes exhibited under the former name. A specimen of fruit and foliage should be sent to Chiswick for the opinion of experts at the coming Conference. So good an opportunity for obtaining information about Grapes will probably not occur again for years. *W. R.*

DAHLIA GUIDING STAR.—This is the best of all the white small-flowered kinds, as it is of first-rate form, and the blooms are beautifully fimbriated, and borne on stiff long stalks, standing well up. For wreaths, crosses, and such like work this Dahlia is quite unrivalled, and should be largely grown for those and similar purposes, the blooms remaining without flagging longer than most others, and are neat and telling among such as are generally used. The unfortunate part about this Dahlia is, that it is very difficult to winter, as it makes hardly any tubers,

and the best way is to grow some in pots, and so store the roots by keeping them in the soil without any disturbance. *J. S.*

PRUNUS PISSARDI BEARING FRUIT.—A correspondent, "Hortulanus"—who informs us that fruit has been recently produced on a young plant of the above, which flourishes as a hardy shrub in Mr. Gaisford's famous garden at Offington—asks whether this is a unique circumstance? [No.] The fruit is described as of a rich reddish-purple colour, not quite so large as a Green Gage, very juicy, and with a pleasant subacid taste. *J. B.* [Cherry Plum, Prunus myrobalana, purple-leaved variety. ED.]

ARACHNANTHE.—The article upon Arachnanthes published in Orchid Notes, September 6, is most suggestive, and conveys to the amateur valuable information of a character too infrequently met with. I have a scrubby imported piece of A. Roxburghii that I have for some time suspected to have existed under somewhat similar conditions—and I would be pleased to have the writer's opinion thereon. Most of your readers will appreciate the very great and special value of articles from a man possessing the knowledge of "R. P.," upon the natural habitats and home characters of the various Cypripedia of the Himalaya district, insigne, venustum, Spicerianum, hirsutissimum, Druryi [?], &c. If we knew more regarding the peculiarities of their habitats, and exercised our reflective faculties, we might very likely be as successful in blooming the latter varieties as the first-named ones—without straw we cannot make bricks. *W.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 9.—The meeting of the above Society, held in the Drill Hall, Westminster, was, owing to advanced season of the year, a small one as regards flowers and fruits; still the Hall was bright with Gladioli, Dahlias, and Pentstemons, and a variety of Orchids gave additional interest to the meeting, and an unusually large gathering met to hear M. Lemoine's paper, and that of Mr. Kelway.

Floral Committee.

Present: William Marshall, Esq., in the chair; and Messrs. F. W. Moore, Botanical Gardens, Glasnevin, Dublin; R. Dean, H. B. May, H. Cannell, G. F. Druery, Shirley Hibberd, G. Paul, J. Fraser, C. Noble, W. Holmes, J. Walker, Rev. H. H. D'Ombrain, J. O'Brien, Dr. Masters, and L. Castle.

A very extensive collection of Gladioli, from Messrs. Kelway & Son, nurserymen, Langport, formed the leading feature. There were 192 spikes in all, and it included some fine new varieties, such as Leonard Kelway, one of the Lemoine type, several fine and richly-coloured spikes of finely-shaped blooms being shown, in colour rich ruby-crimson, shaded with orange, the stout segments being of a velvet-like texture; Gambetta, of the same type, deep ruby, shaded with maroon and crimson, extra fine form; Zulu, crimson, flaked with maroon; Sempronia, blush, flaked with pink and purple; Emperor of Germany, bright carmine; Rider Haggard, buff-yellow, flaked with purple; Cherosina, pale pink, flaked with purplish-crimson; Jerome K. Jerome, pale sulphur-yellow, with purple lip; Lady Wimborne, blush—a fine spike; and Czarina, rich pale bright scarlet.

M. Victor Lemoine, Nancy, France, exhibited a very interesting collection of hybrids of G. Lemoinei, Nanceianus, Saundersianus, and others. The most striking among a lot of novel types were G. Lemonei, Nuée bleue, pale purplish-blue, small-flowered, but very distinct in colour; G. Lemoinei, rich bright orange-scarlet; G. Lemoinei, Louis Thibaut, violet and maroon-purple; G. Lemoinei, E. V. Hallock, cream ground, with rich crimson and yellow lip, having much of the character of purpureo-auratus; and G. Nanceianus, Le Grand Carnot, bright pale carmine, with pale yellow throat. It may be mentioned that the species, G. purpureo-auratus, was introduced to the public from Natal by Mr. William Bull in 1873. Mr. Kelway, Senr., stated that he had attempted to cross it with G. gandavensis, but failed to do so, but of late he has made good use of the blood of some of the G. Lemoinei type.

A Medal, offered by Messrs. Kelway & Sons, for a dozen spikes of Gladioli of their own sending out, was awarded to Mr. T. H. Crasp, gr. to Lord Wimborne, Cranford Manor, Wimborne, he being the only exhibitor.

A very fine display of Cactus and decorative Dahlias, mainly new varieties, was made by Messrs. H. Cannell & Son, nurserymen, Swanley. Among the new forms were Maid of Kent, crimson, tipped with white—very distinct; Laciniata aurea, a fully double flower, of a pale yellow colour, having a number of narrow petals, deeply cut at the points—quite distinct; Dr. Peters, a novel Cactus type, the centre bright orange-crimson, deeply tipped with gold; Cannell's Favourite, golden buff, shaded with deep orange in the centre; Milly Scripham, pale apricot, shaded with deep reddish-orange in the centre; Glory of Swanley, bright pale scarlet, slightly darker in the centre; Lewis Castle, the younger flowers pale purple, changing to bright maroon and purple as they age; Pride of Swanley, pale ground, suffused and heavily tipped with pinkish-purple, very pretty; Mrs. L. Shuter, pale yellow; Henry Cannell, crimson-purple shaded with maroon; Sidney Hollings, fine dark maroon, very showy and striking; Mrs. Douglas, bright pinkish-salmon, but having the defect of showing the green eye; Mrs. Hunt, pale yellow ground and very delicate mauve-pink; and Mrs. Forster, pale yellow, the basal petals slightly suffused with brownish-pink.

Mr. J. Green, nurseryman, Dereham, had Cactus Dahlia Black Prince, a large and bold flower of a bright deep maroon colour.

Mr. T. S. Ware, nurseryman, Tottenham, had Cactus Dahlia E. T. Taylor, bright crimson and scarlet shade; Pompon Dahlia Crimson Beauty, bright crimson, a beautiful reflexed and very symmetrical flower; Harry Forrester (Cactus), white; and Royal Academician, salmon, shaded with scarlet.

Mr. Charles Turner, Royal Nursery, Slough, had Dahlia (show), Lorina, deep bright yellow buff, very fine form, petal and outline; Eldorado (show), claret shaded with purple; Oliver (show), wine crimson, margined with scarlet; Adèle (fancy), buff, striped with crimson, rather small; and the following pompon varieties: Marion, pale ruby, small, of beautiful shape, quite novel in colour; Rubens, crimson, deeply edged with white; The Mikado, pale ruby crimson; Othello, bright deep crimson, very fine in shape; and Midget, puce and white.

Messrs. Daniels Bros., seedsmen, Norwich, send Godetias of the Whitneyi type, viz., Duke of Fife, reddish crimson, and Duchess of Fife, blush with large carmine blotches, the flowers of which had been grown at the Chiswick Gardens.

Messrs. Stuart & Mein, Nurserymen, Kelso, had Pentstemons, James Douglas, pale pink, and Alex. Bugthorne, pale purple.

Mr. James O'Brien, Harrow, had a flower-spike of Montbretia crocosmiflora maculata, deep apricot-yellow, with large reddish-brown spots, said to be a very fine open-air plant.

Messrs. Paul & Son, showed an interesting collection of cut specimens of deciduous trees and shrubs, including Japanese Maples, Golden Elms, Rhus laciniata (in flower), Lemoine's double Lilac, the leaves of which are very thick, and become at this season of a deep purple colour; Drimys Winteri, the once-famous aromatic Winter's bark, the bright green foliage which, frosted over with light bloom, resembles that of Daphniphyllum.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. O'Brien, Courtauld, Castle, Sander, Douglas, Hill, Dominy, Pilcher, and Dr. Masters.

The exhibits consisted of Vanda Sanderiana, with nine flowers; Dendrobium formosum, with twenty flowers, shown by T. A. Gledstanes, Esq. (gr., Mr. Denison), gained a Cultural Commendation; Lælia elegans Turneri; Cattleya aurea Statteriana, from T. Statter, Esq., Manchester (gr., Mr. Johnson), with yellow segments, the broad lip with a central stripe of purple lines, bordered by a broad band of yellow, with a crumpled lilac edge. It received a First-class Certificate. Among other exhibits were Dendrobium album, Standard variety; Lælia elegans Statteri, Cattleya Gaskelliana, Cattleya gigas, Maxillaria venusta, with large white star-shaped flowers; Cypripedium glanduligerum, and Habenaria militaris, a very striking terrestrial Orchid, of which seven plants were shown, with scarlet flowers, and so well cultivated as to secure the award of a Silver Banksian Medal to Sir Trevor Lawrence. Miltonia candida superba, with eight spikes from Messrs. Sander & Co., received a Cultural Commendation.

Fruit Committee.

SEPTEMBER 10.—Present: John Lee, Esq., in the chair; with Messrs. Blackmore, Weir, Crowley, Pearson, Bunyard, Smith, Norman, Hudson, Lane, Watkins, Cheal, and M. Jamin, of Bourg la Reine, Paris.

Mr. J. Walker, Ham Common, exhibited a collection of twenty-four varieties of Apples, for which a Silver Medal was recommended. The specimens of each variety were remarkably fine, especially Lord Grosvenor, Ecklinville Seedling, Cox's Pomona, Cox's Orange Pippin, and Colonel Vaughan. Mr. Crasp, gr. to Lady Wimborne, Canford Manor, sent a collection of fruit, comprising good specimens of Apples Duchess of Oldenburgh, Ecklinville Seedling, &c., several dishes of Pears, Figs, &c., a Cultural Commendation being awarded. Messrs. Paul & Son, Cheshunt, sent a collection of Nuts, and Mr. Selby, of Radclyffe-on-Trent, six dishes of very handsome Potatos, for which a Cultural Commendation was given.

A large and handsome new Pear, named Marguerite Mazillat, was exhibited by the Rev. W. Wilks, which had been grown in an orchard-house. As the fruits were not quite ripe, it was requested to be submitted again. Messrs. Carter & Co. exhibited a very large and handsome Melon, named Holborn Favourite, which was not quite ripe. It was requested to be sent again. Mr. S. Elby, Joyce Grove, Henley-on-Thames, sent a green-fleshed Melon, named Ely's Seedling, which proved of good quality, and received an Award of Merit. From Messrs. Cannell & Sons, Swanley, came a fine fruit of Little Heath Melon. Mr. Maher, gr., Yattenden Court, Newbury, sent examples of two seedling Grapes—one similar to Black Hamburgh, sweet and pleasant; the other, a small white sort of no value. Mr. R. Crowley, of Croydon, submitted a ripe fruit of the Kei Apple (Aberia Caffra), from Mount Aber in Abyssinia. The fruit samewhat resembled a small flat yellow Apricot, having a nice pleasant flavour. A special vote of thanks was accorded.

THE FRUIT SHOW AT THE CRYSTAL PALACE.

FRIDAY AND SATURDAY, *September 5 and* 6.—On the two days above mentioned, a large show of fruits grown under glass was held in conjunction with the National Dahlia Society's show of Dahlias and other flowers in the nave of the Crystal Palace. It had been well if there had been no departure from the object of the show, namely, fruit which had been entirely grown by the aid of glass structures, for the visitor would then have been spared the poor display of immature Apples from various parts of the country. For indoor fruits nothing but favourable comments may be made—Grapes, Peaches, Nectarines, Pines, Melons, &c., being, as a rule, excellent as regards size, and noteworthy generally for good finish, and this notwithstanding our comparatively sunless season.

The highest awards have again fallen to the veteran exhibitors, no new competitors having appeared who are competent to wrest these from their grasp.

Grapes.—At a large show of home-grown fruits such as this, Grapes naturally present the chief feature, and claim most attention. Some nine classes are devoted to these fruits, the largest of which, one for twenty bunches, in ten varieties, offers opportunities to the chief growers worthily to compete. There were six lots in competition, the finest coming from that able grower, Mr. Goodacre, of Elvaston, who had superb samples of Gros Maroc, Madresfield Court, Black Hamburgh, Muscat Hamburgh, Lady Downes, Alnwick Seedling, Black Alicante, Black Prince, Muscat of Alexandria, and Foster's Seedling; while Mr. McIndoe, Hutton Hall, Guisborough, was 2nd, his collection including some fine Trebbiano and Barbarosa, and very good Gros Maroc, Black Hamburgh, &c. Mr. C. Marden, Clarendon Park, Salisbury, was 3rd. Then in the class for ten kinds, Mr. Taylor, gr. to Mr. J. Chaffin, Bath, was a good 1st, with capital samples, though hardly up to the Bath form of previous years. His varieties were Alnwick Seedling, Black Hamburgh, Alicante, Madresfield Court, and very fine Muscat of Alexandria. Mr. Osman, Ottershaw Park, Chertsey, was 2nd, having Mrs. Pearson, good, and the usual blacks; whilst Mr. Reynolds, Gunnersbury Park, was 3rd, his samples including the white Napoleon, Muscat of Alexandria, and popular blacks.

Single varieties.—There were seven classes devoted to these, beginning with Black Hamburghs, a very

fair competition, resulting in Mr. Gibson, Draycot House, Chippenham, coming 1st with capital samples; others being fairly good.

Gros Maroc made a superb class, grandly-berried bunches coming from Mr. Hockings, West Moulsey, and Mr. Reynolds. Madresfield Court was in limited quantity, capital bunches coming from Mr. Gibson; the second best being shown by Mr. Howe, of Streatham Common. Black Alicante was as usual a telling class, the bunches fine and deeply coloured. Mr. Osman was 1st here with some grand samples; Mr. Griffin and Mr. Howe running very close. With any other black Grape, Alnwick Seedling took all the prizes, Mr. Goodacre having the finest bunches. Of white kinds, Muscat of Alexandria was finely shown by Mr. Taylor, whose Bath samples were worthy of the grower. The second best bunches coming from Coombe Bank, Kingston. In the class for any other white Grape, Foster's Seedling from Longford Castle, came 1st; the same variety and Buckland Sweetwater being 2nd and 3rd.

In the class for baskets of black Grapes, nothing could touch Gros Maroc; Mr. Hockings and Mr. McIndoe having the finest. The best basket of Whites was found in four good bunches of Bowood Muscat from Mr. Minter, Barrow-in-Humber, laid out on a wicker tray. Mr. McIndoe stuck to the regulation basket, and had fine Duke of Buccleugh for 2nd prize.

Collections of Fruit naturally brought good competition. The class for twenty dishes had four late competing, a grand display of superb fruit mostly. Here Mr. McIndoe was 1st with very fine Gros Maroc and Alnwick Seedling black Grapes, Buckland Sweetwater and Trebbiano white Grapes, Exquisite and Princess of Wales Peaches, good Nectarines, Apricots, Pines, Melons, Oranges, Lemons, Plums, &c.; Mr. H. W. Ward, Longford Castle, Salisbury, was 2nd with capital Muscat of Alexandria, and Foster's Seedling white Grapes, Gros Maroc and Black Alicante black Grapes, Sea Eagle and Princess of Wales Peaches, Brunswick Figs, Smooth Cayenne Pine, &c.; Mr. Goodacre was 3rd with excellent samples.

In the class for twelve dishes, there were five competitors. Mr. Blair, of Trentham, was 1st with very good Muscat and Alicante Grapes, Queen Pine, Melon, Peaches, Figs, &c.; Mr. Miller, Rood Ashton, was 2nd, having similar Grapes, Dymond Peaches, Pine-apple Nectarines, &c.; and Mr. Ward was 3rd. In the class for eight dishes, Mr. Ocock, Havering Park, took the 1st place.

Peaches made a fine show, and though none were very large, all were good. Mr. Divers, Ketton Hall, was very strong in the classes, his 1st prize for four dishes being Dymond, Prince of Wales, Crawford's Early, and Crimson Galande. Mr. McIndoe, who was 2nd, had Golden Eagle, Violette Hâtive, Exquisite, and Princess of Wales. Messrs. F. T. Rivers & Co., Sawbridgeworth, were 3rd. Mr. Divers was 1st in the class for six dishes of Peaches and six of Nectarines, and also in the class for four dishes of the latter fruits with Pine-apple Dryden, Victoria, and Maver's Orange. The best six Peaches came from Mr. Alderman, of Dorking, who had superb Sea Eagle. Pine-apple from Ketton Hall was the best single dish of Nectarines. The competition in these fruits was large. Plums were very few, and rather small. The best four dishes of reds came from Mr. Ward, Pond's Seedling, Abec, Magnum Bonum, La Delicieuse, and Sultan. The best whites from Mr. McIndoe were Jefferson, Magnum Bonum, Green Sage, and Bryanston Gage; and the best four dishes of purple Plums came from Mr. Blick, who had Kirke's Prince Englebert, Monarch, and Grand Duke Constantine.

Mr. Ward had the best Figs in white Ischia and large Brunswick. Melons were plentiful, but flavour was not prominent. The best white or green flesh was Sutton's Monarch, and the best-coloured variety was the small Scarlet Gem.

Apples.—These were largely shown by the trade, but the competition in classes was very limited. Messrs. G. Bunyard & Co., Maidstone, and Mr. McIndoe, were the only exhibitors of twelve dishes, orchard-house grown, with splendid samples. Messrs. Bunyard's samples comprised Ecklinville, Stone's Pippin, Warner's King, Bismarck, finely coloured; Pomona, and Emperor Alexander, kitchen sorts; and Lady Sudeley, Opera Belle, Pontoise, Worcester Pearmain, Washington, and Lady Henniker, dessert. Mr. McIndoe's finest fruits were Peasgood's Nonsuch, Grand Duke Constantine, Gascoigne's Seedling, &c. In the class for three dishes of dessert kinds, Mr. Stone was 1st with Washington, Worcester Pearmain, and Cellini Pippin. Very fine collections came from Messrs. G. Bunyard & Co., Messrs. J. Peed & Sons, Norwood; Messrs. J. Cheal & Sons, Crawley; and Messrs. J. Laing & Sons, Forest Hill. A representative collection of Irish Apples were also staged, some samples being fairly good, others indifferent. It was evidently several weeks too early to see Irish Apples at their best. Mr. Blick had the best twelve dishes of Pears, orchard-house grown, in Durondeau, Souvenir du Congrès, Louise Bonne, Doyenne Boussoch, &c.; Mr. McIndoe being 2nd. Clapp's Favourite was well shown also. In the competition for Messrs. James Carter & Co.'s class for six vegetables, Messrs. Waite, Esher; and Beckett, Penn, took the prizes; the firm also showed several dishes of excellent Tomatos.

Cut Flowers: Gladioli.—As might naturally be expected, the fruit overshadowed in importance the few classes devoted to cut flowers. One of the most important of these classes was that for a collection of Gladioli, not more than one hundred spikes, and not less than thirty-six varieties. The only exhibitor was the firm of Messrs. J. Burrell & Son, Howe House Nurseries, Cambridge, who are as famous as raisers and exhibitors of the Gladiolus in the East, as Messrs. Kelway & Son, of Langport, are in the West. On this occasion they exhibited a superb collection of ninety-six varieties, many of them of their own raising, the large spikes of bloom grand in development. The leading varieties—and they formed an admirable selection—were Africaine, Amitie, Atlas, Baroness Burdett Coutts, Celemine, Conquerant, Corinne, Crepuscule, Dalila, Grande Rouge (very fine), Minos, Mascarille, Meyerbeck, Orphee, Pyramide, Rayon d'Or, Iolanthe, Impériale, Mr. Lindsell, Cygnet, and The Mikado; among them were several unnamed seedlings.

In the class for eighteen varieties (amateur), E. B. Lindsell, Esq., Hitchin, was placed 1st, with a good average lot of fine spikes and good varieties, the leading ones, Celemine, Snowdon, Carnation, Mons. A. Brongniart, Atlas, Conquerant, Rossini, and Bicolor. The Rev. H. H. D'Ombrain, Westwell Vicarage, Ashford, was 2nd, with Mont Blanc (a very fine white variety), Delila, Beauty of Westwell, Grande Rouge, Baroness Burdett Coutts, Horace Vernet, and Flamboyant, as the leading sorts. There was no entry in the class for twelve spikes.

Asters were very good, considering the season. Mr. S. Cooper, Chippenham, had the best twenty-four quilled varieties; Mr. John Walker, Thame, coming 2nd.

Messrs. Saltmarsh & Son, nurserymen, Chelmsford, had the best twenty-four French Asters, having fine bright and clean flowers of the Pæony-flowered type; Mr. John Walker being 2nd, with the same.

Mr. Thomas Hobbs, Lower Easton, Bristol, was the only exhibitor of Hollyhocks, and took the 1st prize for twelve flowers.

Collections of Stove and Greenhouse Flowers were a great feature, and Mr. J. Prewett, floral decorator, Hammersmith, was 1st, with a very large collection, including Orchids, Ladies' Slippers being in fine variety, Allamandas, Lapagerias, &c.; Mr. Blair, gr. to His Grace the Duke of Sutherland, Trentham, was 2nd, with some very fine Orchids and other choice things; Mr. A. Gibson, gr. to T. F. B. Atkins, Esq., Halstead Place, Sevenoaks, was 3rd, with a very fine lot also.

Plants.—Of these there were groups of early flowering Chrysanthemums in pots, and Messrs. J. Laing & Sons, Stanstead Park Nurseries, Forest Hill, was placed 1st, with an excellent lot; Messrs. Reid and Borneman, nurserymen, Sydenham, were 2nd; and Mr. N. Davis, nurseryman, Camberwell, 3rd.

In the class for six Cockscombs, Mr. G. Saunders, gr. to W. H. White, Esq., Charlwood Park, Crawley, was 1st; and Mr. R. Spinks, Victoria Road, Horley, 2nd.

Miscellaneous collections comprised a large pyramid of Begonias in pots, intermingled with Ferns, from Messrs. J. Laing & Sons; a large collection of Dahlias of all types, Begonias, double and single—quite a small show in itself—from Messrs. H. Cannell & Sons, nurserymen, Swanley; a large collection of cut flowers from Mr. E. T. Such, nurseryman, Maidenhead; a remarkable collection of show and fancy Pansies, African and French Marigolds—double and single of the latter, from Mr. Alexander Lister, florist, of Rothesay; Mr. W. Innes, florist, also of Rothesay, French Marigolds, Antirrhinums, Pansies, &c.

First-class Certificates of Merit were awarded to the Rev. H. H. D'Ombrain for Gladiolus Mont Blanc; and to Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, for Papaver orientale semi-plena, very rich and bright in colour, which is of an intense scarlet.

National Dahlia Society.

The annual exhibition of this Society proved to be a very good one, notwithstanding the frosts of a week previous, and the continuance of cold and inclement weather. Whatever may be said in dispraise of the "lumpy and inelegant Dahlia," they appear to have a great charm for the general public, and it may be taken for granted they will be grown for exhibition for years to come.

We are glad to note that in most of the classes for Dahlias of the show type, and, indeed, in all of those in which nurserymen can exhibit, the committee still continue the practice of having show and fancy types exhibited together. We are certain the stands gain in brightness, effectiveness, and variety, and, indeed, the distinction between the two is so artificial that the time has come when it should be abolished.

Show and Fancy Dahlias.—In the class for seventy-two blooms, not less than forty-eight varieties, or more than two blooms of any one variety, Messrs. Keynes, Williams & Co., nurserymen, Salisbury, were 1st, with a very good lot indeed, the leading varieties being Mr. Spofforth, Miss Cannell, Maud Fellowes, J. T. West, James O'Brien (fancy), Rev. J. B. Camm (fancy), Imperial, Mrs. Langtry, William Rawlings, Duchess of Albany (fancy), Majestic, Hope, William Keith, Harry Turner, Mrs. Foreman, Prince of Denmark, Royal Queen, Nellie Cramond, Prince Henry (fancy), Mrs. Kendal, Flora Wyatt (fancy), Gaiety (fancy), Madame Soubeyre (fancy), Henry Bond, Lady Gladyss Herbert, Prince Bismarck, James Vick, Henry Walton, Seraph, Richard Dean, Countess of Ravensworth, Mrs. Gladstone, and King of Purples; 2nd, Mr. M. V. Seale, Vine Nursery, Sevenoaks.

The class for forty-eight blooms undoubtedly contained some of the best blooms exhibited. Here Mr. C. Turner appeared to have centred his strength, and he had a very fine lot, including William Rawlings, Agnes, Harry Keith, Maud Fellowes, John Standish, Perfection, Royal Queen, Clara, Mrs. Hodgson, Robina, Glowworm, Mrs. Langtry, Harry Turner, Flag of Truce, Sunbeam, Richard Dean, J. B. Service, Diana, John Bennett, Ether Britton, Constancy, Lustrous, James Vick, Mrs. Saunders (fancy), James Cocker, Prince Bismarck, R. T. Rawlings, Diadem, James Service, Goldfinder, Nellie Tranter, &c.; 2nd, Messrs. Keynes & Co.

There were six competitors in the class for twenty-four varieties, and Mr. George Humphries, Florist, Kingston Langley, Chippenham, was 1st, with Maud Fellowes, Nellie Cramond, R. T. Rawlings, Harry Keith, Crimson King, Mr. Gladstone, T. S. Ware, Mrs. D. Saunder, Countess of Ravensworth, Earl of Ravensworth, General Gordon (fancy), George Barnes (fancy), Mrs. Gladstone, Willie Garrett, Agnes, Colonist, Ovid, Henry Walton, Harry Turner, Miss Cannell, Maud Fellowes, Rosetta, Mrs. Saunders (fancy), Lustrous, Vice President, William Rawlings, Goldfinder, Mr. Glasscock, John Henshaw, James Stephen, Mr. Harris, and Matthew Campbell (fancy). Messrs. Heath & Son, Nurserymen, Cheltenham, were a good 2nd.

In the class for twenty-four blooms, Mr. J. Walker, nurseryman, Thame, was 1st, with some flowers of high quality, consisting of Mr. Gladstone, Prince of Denmark, Maud Fellowes, James Vick, Mrs. F. Foreman, Jesse McIntosh (fancy), Colonist, Willie Garratt, Miss Cannell, John Standish, J. C. Reid, Crimson King, T. J. Rawlings, Senator, George Rawlings, James Cocker, Mandarin (fancy), Hope, Flora Wyatt (fancy), Seraph, Imperial, Mrs. W. Dodds, and John Bennett.

The class for twelve blooms brought a large competition, and Messrs. J. Gilbert & Son, St. Margaret's Nursery, Ipswich, were 1st, with Mr. Saunders (fancy), Rev. J. Godday, Rev. J. B. M. Camm (fancy), Imperial, Crimson King, R. T. Rawlings, Harry Keith, Henry Walton, Ethel Britton, William Rawlings, T. J. Saltmarsh, and Mrs. Harris; 2nd, Mr. S. Mortimer, Swiss Nursery, Farnham.

In the amateur's division, the leading class was for twenty-four blooms, show and fancy varieties intermixed, there were six competitors, and Mr. Thomas Hobbs, Lower Easton, Bristol, an old exhibitor and raiser, was placed 1st with excellent blooms of Richard Dean, John Hickling, William Keith, R. T. Rawlings, Hartie King, William Rawlings, Joseph Green, Prince of Denmark, Nellie Tranter, John Standish, Mr. Gladstone, T. W. Girdlestone, shown in the self form; Mrs. McKenzie, Excellent, Vice President, Mrs. Slack, Willie Garratt, Alice Emily, Thomas Hobbs, Arthur Blick, Henry Walton, Mr. G. Harris, and Mrs. D. Sander.

2nd, Mr. J. T. West, gr. to W. Keith, Esq., Cornwalls, Brentwood.

Mr. S. Cooper, Hamlet, Chippenham, had the best twelve show Dahlias, consisting of T. J. Saltmarsh, Willie Garratt, George Barnes (fancy), R. T. Rawlings, Maud Fellowes, Crimson King, Goldfinder, Harry Keith, Thomas Hobbs, Vice President, Mrs. Gladstone, and Harry Turner; 2nd, Mr. George Arnold, Leighton Buzzard.

The best six varieties of show Dahlias came from Mr. H. Heremann, jr., Chippenham, who had R. T. Rawlings, Harry Keith, Eclipse, T. J. Saltmarsh, Major Clark, and Mr. Gladstone; 2nd, Mr. J. Hurst, Rectory Road, Enfield Highway.

In the class for twelve fancy varieties, Mr. J. T. West was 1st with a very good lot, consisting of Mrs. Saunders, Dorothy, T. W. Girdlestone, Duchess of Albany, Frank Pearce, Gaiety, Salamander, Mrs. N. Halls, Henry Eckford, George Bains, John Forbes, and Hugh Austin; Mr. S. Cooper was 2nd.

Dahlias in colours. — There were several open classes for Dahlias in colours, all of a very interesting character. The best six blooms of one variety of dark Dahlias were Willie Garratt, very fine indeed, from Mr. Thomas Hobbs; Mr. T. Anstiss, Brill, Bucks, was 2nd, with James Cocker; and Messrs. Keynes & Co., 3rd.

The best six blooms of any light, not yellow, were Mrs. Gladstone, showing the popularity of this beautiful Dahlia. Mr. John Walker was 1st, with six perfect flowers; and Mr. Seale was 2nd.

The best six blooms of any two yellow Dahlias, three blooms of each, came from Mr. J. T. West, who had J. B. Service and R. T. Rawlings; and Messrs. J. Gilbert & Son were 2nd, with R. T. Rawlings, and J. C. Quennell.

The best six blooms of any two-tipped Dahlias, three of each, were Peacock and Mr. Saunders, both fancies, from Messrs. Keynes & Co.; Mr. John Walker coming 2nd, with Mrs. Langtry (show), and Mrs. N. Halls (fancy).

The best six blooms of any two-striped Dahlias were Pelican and the Rev. J. B. M. Camm, from Messrs. Keynes & Co.; and Mr. Henry Glasscock was 2nd, with Duchess of Albany and Gaiety.

Decorative Dahlias.—Cactus and decorative Dahlias were a very fine feature indeed, shown in the open classes in bunches of six blooms. Mr. Charles Turner was 1st, with a superb lot of eighteen varieties, consisting of Zulu, Professor Baldwin, Empress of India, Amphion, King of the Cactus, Mrs. Hawkins, Picta formosissima, Henry Patrick, Panthea, William Darvill, William Rayner, Honoria, Juarezi, Constance, Sir T. Lawrence, Beauty of Brentwood, Cochineal, and Asia. Messrs. J. Cheal & Son were 2nd.

In the class for twelve varieties, Mr. Seale was 1st, with Henry Patrick, Juarezi, Mrs. Hawkins, Empress of India, William Darvill, Charming Bride, Cochineal, Panthea, Zulu, Lady Marsham, Constance, and King of the Cactus. Messrs. Paul & Son, Old Nurseries, Cheshunt, were 2nd.

In the amateurs' division, Mr. J. T. West had the best six bunches, six blooms in each, staging Honoria, Empress of India, Marchioness of Bute, Panthea, Mrs. Hawkins, and Mrs. H. M. Stanley—all very distinct. 2nd, J. G. Fowler, Esq., Woodford, with Mrs. Hawkins, Annie Harvey, King of the Cactus, St. Patrick, Zulu, and William Darvill.

The best six varieties, three blooms of each, came from Mr. Henry Glasscock, who had Mrs. Hawkins, Amphion, Black Prince, Beauty of Brentwood, Panthea, and Robert Mayher.

Pompon Dahlias.—Equally fine and striking were the Pompon Dahlias, shown in bunches of ten blooms of each. Messrs. Keynes & Co. had the best twenty-four bunches, consisting of Lady Blanche, Whisper, Favourite, Darkness, Red Indian, Dove, Golden Gem, E. F. Jungker, Isabel, Hector, White Aster, Phœbe, Rosalie, Fairy Tales, Grace, Little Duchess, Gem, Eden, Leila, Little Ethel, Little Darkie, Achilles, Janet, and Admiration; 2nd Messrs. J. Cheal & Sons.

The best twelve bunches came from Messrs. J. Burrell & Co., Cambridge.

In the amateur's division, the best six bunches, ten blooms of each, came from Mr. Henry Glasscock.

Mr. W. Harris, Broomfield, Chelmsford, had the best six bunches, six blooms of each.

Single Dahlias. — Attractive were the single Dahlias shown in bunches of twelve blooms, and if the present method of displaying them appears formal, it yet shows off the flowers to the best advantage. Out of three competitors, Mrs. J. Cheal & Sons, Longfield Nurseries, Crawley, were placed 1st, and in this particular class they appear to be invincible, with Mr. C. Harvey, Miss Linnaker, Wm. Kennett, Albert Victor, Mr. J. Conninck, Mrs. Bowman, James Scobie, Marian Hood, Miss Henshaw, Maria Linden, Miss Roberts, Amos Perry, Duchess of Fife, Eclipse, Alba perfecta, Cetewayo, Victoria, Hugo, Guilebrua, Formosa, Duchess of Westminster, Miss Ramsbottom, Duchess of Albany, and Northern Star; 2nd, Mr. Seale.

The best twelve varieties were shown by Messrs. J. Burrell & Co., the only exhibitor.

In the amateurs' division, Mr. H. Glasscock was the only exhibitor of six bunches, ten blooms of each. E. Mawley, Berkhamsted, was the only exhibitor of six bunches of three blooms each.

Certificates of merit were awarded to the following seedling Dahlias:—Comedian (fancy), from Messrs. Keynes & Co., deep apricot ground, striped with dark crimson, and edged with delicate mauve—fine in form and distinct in character; Duke of Clarence (Cactus) from Messrs. J. Cheal & Sons, a bold and striking variety—crimson and maroon; Duchess of Fife (single), Mr. T. S. Ware, bright deep yellow, with side edgings of brownish-red, medium size, and fine shape; and Maude (single), T. S. Ware, white, with side edgings of crimson-purple—distinct and very pretty. Several other seedlings were shown, but they were not sufficiently meritorious to ensure awards.

A very large collection of Dahlias was staged by Mr. T. S. Ware, and similar collections, though not nearly so extensive, came from Messrs. J. Cheal & Sons, who also had bunches of foliage, of flowering, and ornamental shrubs and trees. Messrs. W. Paul & Sons, Waltham Cross, exhibited a well arranged lot of Roses, flowering shrubs, picture tree foliage—a most interesting exhibit.

Obituary.

Mr. James Backhouse.—It is with much regret we have to announce the death of this well-known York nurseryman, which took place on Sunday, August 31. As head of the firm of James Backhouse & Son, he was widely known amongst horticulturists for his love of plants, and his success in their cultivation.

Inheriting a love of botany and of natural science in general from his father, who, along with his uncle, the late Mr. Thomas Backhouse, became the proprietors of a nursery and seed business, at York, in 1816, which had been carried on for 150 years previous to that date, he very early developed great interest in the prosecution of his business, giving special attention, at successive periods, to the cultivation of Coniferæ, Ferns, Orchids, Alpine, and herbaceous plants, as well as other departments of a large establishment. In this work he spared himself no cost or pains, both in the introduction of new plants and in persevering efforts to make amenable to cultivation subjects which many looked upon as intractable and unprofitable. In both directions his efforts were crowned with no little success. Forty years ago he devoted a house to the cultivation of Conifers in pots, large numbers of which had then been recently introduced from North and South America, as well as the Himalayas, China, and Japan. In course of years, "corkscrewing" of the roots of trees so cultivated was found unsuitable for the making of permanent trees, and Mr. Backhouse abandoned the system. A large variety of Conifers of all sizes, planted in the open ground of the York Nurseries, testifies to the excellent foundation and steady perseverance in their cultivation which Mr. Backhouse displayed. Equal, if not greater zeal, was exhibited by him in the cultivation of Ferns. He collected numerous species or varieties, and, not satisfied with the usual way of growing them in pots, he erected a large fernery, containing not less than 70 tons of rockwork, in which he planted out in a natural manner, the noblest and best of these lovely plants.

This rock-fernery was the commencement of many others throughout the kingdom. Afterwards, with wonderful skill, he constructed an "underground fernery" for the cultivation of Filmy Ferns, which probably now contains a finer specimen of the Killarney Fern than can be found at Killarney itself, not to speak of many other kinds from New Zealand, Chili, Java, the West Indies, and other countries which Mr. Backhouse collected through his agents and correspondents. Very early he began the importation and cultivation of Orchids, and this branch of the business greatly increased. His collectors visited Mexico, Ecuador, Peru, Chili, and other countries. Lælia purpurata (exhibited before the Royal Horticultural Society about the year 1850), Cattleya Mendelii (sold to Mr. Mendel as Cattleya sp. Ecuador), and many other fine species were the results of his efforts in this direction; whilst to-day the York collection of Orchids, especially of Cattleyas and Odontoglossums, is well known as one of the finest in the kingdom.

Mr. Backhouse's constitution was never robust; indeed, it was so weakly for some years that he was compelled to seek his recreation, not in the gatherings of horticultural friends, but among the mountains of Cumberland and Westmoreland, of Forfarshire and Perthshire. His love of scenes like these induced him to commence the building of a rockwork at York for the cultivation of alpine plants, when such plants were scarcely to be found outside of botanic gardens. York is the centre of a long and wide vale, which is known by its name, and as such is but little suited for such kind of gardening; but Mr. Backhouse was not to be discouraged, for by bringing stones or "rocks" from a distance of 20 or 30 miles, and excavating a lake with precipitous sides, he erected a rockwork of considerable extent, and presenting, in its many nooks and crannies and caves, sites for the cultivation of the choicest plants of the Alps, the Pyrenees, and the Tyrol—treasures which, through many years, he continued to import. To enumerate these is beyond the limits of this notice, and we will not, therefore, attempt it. Many years ago, Mr. Backhouse published a *Monograph of Hieracia*, which the late Dr. Lindley described as "a work upon Hawkweeds by a hawk-eyed botanist." It was the result of several years' close observation, as well by the cultivation of living plants as the examination of dried specimens of this family, and it took a high place with students; it is now out of print. Three years or more ago, Mr. Backhouse had a serious fall, from the effects of which he never fully recovered; and after a somewhat long and tedious illness, which he bore with great patience, he peacefully expired.

The Weather.

THE PAST WEEK.

The following summary record of the weather for the week ending September 6, is furnished from the Meteorological Office:—

"The *weather* continued unsettled and rainy in the extreme north-western parts of the kingdom; elsewhere it was generally fair, and much drier than of late; until the close of the week, however, a good deal of cloud was prevalent.

"The *temperature* continued low during the earlier days of the period, when minima ranging from 31° in 'Scotland, W.,' to 36° in 'England, N.E.,' and 'Ireland, S.,' and to 43° in the 'Channel Islands, were recorded. It subsequently rose very considerably, and became high for the time of year, the maxima registered on Saturday varying from 67° to 74° in Scotland, from 72° to 75° in Ireland, and 71° to 78° over the greater part of England, while 83° was recorded in 'England, S.W.,' (at Llandovery). The average value for the week slightly exceeded the normal in Scotland, Ireland, and the north-east of England; in the other English districts it was either rather below, or about equal to, the mean.

"The *rainfall* has been more than the mean in 'Scotland, W.,' and 'Ireland, N.,' but less in all other districts. In most of the English districts the fall has been very slight.

"*Bright sunshine* has been less prevalent generally than it was last week, the percentage of the possible amount of duration having ranged from 17 in 'Ireland, N.,' and 22 in 'Ireland, S.,' to 38 in 'England, S.,' 41 in 'Scotland, E.,' and to 45° in the 'Channel Islands,'

MARKETS.

COVENT GARDEN, September 11.

MARKET shows scarcely any alteration from the previous quotations. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	... 3 6-	8 6	Peaches, dozen,	... 1 0-	8 0
Cobs, Kent, 100 lb.	50 0-	...	Pine-app'es, St. Michael, each	... 2 0-	6 0
Grapes, lb.	... 0 9-	2 6	Plums, ½-sieve	... 7 0-	11 0
Lemons, per case	...12 0-	20 0			
Melons, each	... 0 6-	2 0			

VEGETABLES.—AVERAGE RETAIL P ICES.

	s. d.	s. d.		s. d.	s. d.
Articho., Globe, each	0 4-	0 6	Mustard and Cress, punnet	...	0 4- ...
Beans, French, lb.	... 0 4-	...	Onions, per bunch	... 0 5-	...
Beet, red, per dozen	1 0-	2 0	Peas, per quart	... 1 0-	...
Carrots, per bunch	... 0 6-	...	Parsley, per bunch	... 0 4-	...
Cauliflowers, each	... 0 3-	...	Shallots, per lb.	... 0 6-	...
Celery, per bundle	... 1 6-	2 0	Spinach, per bushel	... 2 0-	...
Cucumbers, each	... 0 4-	0 6	Tomatos, per lb.	... 0 9-	...
Endive, per dozen	... 2 0-	...	Turnips, per bunch, new	... ... 0 4-	...
Herbs, per bunch	... 0 4-	...			
Lettuces, per dozen	... 1 6-	...			
Mushrooms, punnet	1 6-	...			

POTATOS.—The arrivals this week have been much heavier, consequently prices are rather easier. Expect a little improvemedt during the coming week. Magnums, 60*s.* to 75*s.*; Snowdrops, 80*s.* to 85*s.*; Hebrons, 60*s.* to 70*s.*; Imperators, 80*s.* to 85*s.* *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	18 0	Ferns, in var., doz	4 0-	18 0
Aspidistra, doz.	...18 0	42 0	Ficus elastica, each	1 6-	7 0
— speci. plants, each	7 6-	10 6	Foliage plants, various, each	... 2 0-	10 0
Asters, per doz.	... 3 0-	6 0	Fuchsia, per doz.	... 3 0-	6 0
Balsams, per dozen	... 3 0-	4 0	Heliotrope, per doz.	4 0-	6 0
Begonias, per doz.	... 4 0-	6 0	Hydrangeas, doz.	... 6 0-	18 0
Calceolaria, p. doz.	... 4 0-	6 0	Liliums, various, per dozen	... ... 9 0-	18 0
Campanula, per doz.	9 0-	18 0	Marguerites, doz.	... 6 0-	12 0
Chrsanthem., p. doz.	4 0-	18 0	Mignonette, per doz.	3 0-	6 0
Coleus, per dozen	... 2 0-	6 0	Nasturtiums, p. doz.	4 0-	6 0
Cyperus, per dozen	... 4 0-	12 0	Palms in variety, each	... ... 2 6-	21 0
Dracena terminalis, per dozen	...30 0-	60 0	Pelargoniums, scarlet, per dozen	... 3 0-	6 0
— viridis, per doz.	12 0	24 0	— per doz.	... ... 6 0-	12 0
Euonymus, in var., per dozen	... ... 6 0	18 0	Petunias, per doz.	... 4 0-	6 0
Evergreens, in var., per dozen	... ... 6 0-	24 0			
Ericas, various, doz.	8 0-	18 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	... 2 0-	4 0	Myosotis or Forget-me-nots, 12 bun.	... 2 0-	4 0
Asters, 12 bunches	... 1 6-	5 0	Pinks, various, 12 bn.	3 0-	6 0
— French, bunch	... 1 0-	1 6	Pelargoniums, scarlet, 12 spr.	... ... 0 3-	0 6
Bouvardias, per bun.	0 6-	1 0	— dozen sprays	... 0 4-	0 9
Callaæthiopica, 12 bl.	2 0-	5 0	Primulas, double, 12 sprays	... ... 0 6-	1 0
Carnations, 12 blms.	1 0-	2 0	Pansy, or Heartsease, 12 bunches	... 1 0-	2 0
— 12 bunches	... 4 0-	6 0	Poppies, various, doz. bunches	... ... 1 0-	2 0
Chrysanth., 12 bun.	3 0-	6 0	Pyrethrum, 12 bun.	2 0-	4 0
— 12 blooms	... 1 0-	3 0	Roses, Tea, per doz.	0 6-	1 6
Cornflower, 12 bun.	. 1 6-	3 0	— coloured, dozen	1 0-	1 6
Dahlias, 12 bun.	... 2 0-	4 0	— red, per 12 bun.	2 0-	6 0
Eucharis, per dozen	2 0-	4 0	— Safrano, dozen	... 1 0-	2 0
Gardenias, 12 blooms	2 0-	4 0	— outdoor, 12 bun.	1 0-	3 0
Gladiolus, 12 bun.	... 6 0-	12 0	Stephanotis, 12 spr.	1 6-	3 0
Heliotropes, 12 spr.	0 6-	1 0	Sultan, 12 bunches	... 3 0-	4 0
Lavender, 12 bun.	... 3 0-	5 0	Tuberoses, 12 blms.	... 0 3-	0 6
Lilium, var., 12 bl.	... 0 6-	4 0			
Maiden Hair Fern, do	4 0-	9 0			
Marguerites, 12 bun.	3 0-	6 0			
Mignonette, 12 bun.	1 0-	3 0			

ORCHID-BLOOM in variety. Not over plentiful.

NOTICES TO CORRESPONDENTS.

***** Numerous Communications and Reports of Societies are "crowded out," but some of them will appear in subsequent issues.**

APPLE TRUNK BORED: *E. W. D.* The grub you speak of is that of the Leopard Moth—Zeuzera æsculi.

GLOXINIAS: *S. C.* The plants having bloomed, the appearances you note are signs of maturity. Withhold water gradually for a fortnight, and afterwards entirely, and then place the tubers, after cutting off the dried-up leaves, in a warm, dry place.

GROS COLMAR TAKING THE PLACE OF BLACK ALICANTE VINE: *J. C. S.* It would be better to inarch the strong canes of Gros Colmar on to shoots of similar age and size of the Alicante Vine, rather than layer them in the old soil of the border. Vine inarching is best done when growth is active.

HORTICULTURAL SOCIETIES AND COLLEGES: *W. M.* For the information required, you should apply to some persons in the countries named. We cannot help you.

MUSK GROWING ROUND ABOUT LILIES: *Sherlock.* Provided the ground is in good heart, and the Lilies are 6 to 8 inches deep in it, the Musk would do no harm for two or three seasons. Longer than that it should not remain, but the top soil should be removed, the Lilies dug up, sorted, and replanted, and all be made good again with fresh soil—loam by preference. You can plant the Musk roots after that.

NAMES OF FRUITS: *J. B.* 2, Cox's Pomona; 5, Mère de Ménage; 6, not recognised; others—numbers detached—Emperor Alexander, Cellini, Claygate Pearmain.

NAMES OF PLANTS: *Ajax.* 1, Aster not known; 2, Funkia ovata; 3, Helianthus rigidus; 4, H. decapetalus; 5, H. multiflorus; 6, H. multiflorus; 7, Chelone obliqua. — *W. F. & Co.* Carthamus tinctorius.—*C. W. Dod.* Salvia hians, Royle, Himalaya, a fine species.—*J. B.* 1, Salvia Horminum; 2, Rudbeckia pinnata; 3, Lysimachia ciliata; 4, Polystichum polydactylon cristatum; 5, P. parvissimum; 6, Polypodium phegopteris.—*No Name.* 1, Aster salicifolius; 2, Funkia lancifolia; 3, Helianthus rigidus; 4, H. maximus; 5, H. m. fl.-pl.; 6, H. m. fl.-pl. Reve d'Or.—*W. W. A.* Probably Quercus rubra.—*H. M.* Cornus sibirica probably.—*J. A.* Francoa sonchifolia.—*G. C.* 1, Calycanthus occidentalis; 2, Viburnum Lantana; 4, Lomaria procera; 5, apparently a Plane; 7, Cornus mas; 8, Helenium autumnale, Specimens all withered and imperfect.—*J. K.* 1, Polypodium Willdenovii; 2, Blechnum occidentale; 3, 3, Pteris longifolia.—*G. H., Aigburth.* Actea spicata.

NERIUM FLOWERS DROPPING: *G. S.* The heat of our summer is seldom high enough for this plant to succeed out-of-doors. Keep the plants under glass all the year round, and moderately dry at the root in winter.

ORCHID: *Vesta.* Vanda sps. of the concolor group, could you send a raceme?

SHRUBS IN LOBBY: *F. L. S.* Laurustinus would do for a season or two. Euonymus would be well-clothed with leaves in the summer, but they would mostly fall off during the winter. You really require two sets of plants; one for summer, say of Pittosporum Tobira, common Laurel, or Laurustinus; and one for winter, consisting of Chamærops humilis (Palm), Sweet Bay, and some common variety of Camellia, the latter standing a long time in shady places without losing foliage.

VANDA SANDERIANA: *H. L.* A good, but not unusual form.

VINES FIFTY YEARS OLD: *Hensell.* Improve them out of existence, make a new border and plant fresh ones.

VINES: *J. R.* Your berries are badly spotted. We do not know under what conditions they were grown, but we imagine it may arise from syringing, without sufficient ventilation and shading.

WILLIAMS' MEMORIAL FUND: From the list of names previously published, that of Mr. H. Cannell, who has taken a prominent part in the matter, was inadvertently omitted. Mr. Cannell by precept and by practice is a strong advocate of the proposals.

COMMUNICATIONS RECEIVED.—E.C.—T. W. S.—A. S. W.—H. B. P.—H., Correvon, Geneva.—J. D.—G. D.—R. P.—H.—W.—J. R.—F. R.—A.—J. M'D.—R.—C. W. D,—G. C.—T. T.—G. C. (next week.—R. D.—W. S.—A. C.—R. A. R.—E. T,—P. P. A. (nothing to hand) —N. E. B.—W. R.—J. Haysman.—G. W. (next week).—J. A. C. (no Potatos, diseased, or otherwise).—F. G.

DRAWINGS, PHOTOGRAPHS, &C., RECEIVED WITH THANKS.—G. K.—W. S,—Messrs. Jarman.—Mr. Horsman.—E. K.

SPECIMENS RECEIVED WITH THANKS.—A. Waterer.—Royal Botanic Garden, Edinburgh.—C. W. D.

TRADE NOTICE.

MR. H. A. TRACY.—The many Orchid growers who have for years experienced the courteous manner in which Mr. H. A. Tracy attended to their wants when acting as manager to the well-known and Orchid establishment of Mr. William Gordon, at Twickenham, will be glad to learn that Mr. Tracy has purchased the stock and business, and intends carrying the concern on as usual, but on his own account.

CARNATION, PRINCESS of WALES, a self of beautiful form and charming shade of silvery pink, 2*s.* each, 18*s.* per dozen; ready in November. RABY, pale salmon-pink, very vigorous, extra for cutting, 6*s.* per dozen, 40*s.* per 100.

GERANIUMS—Niphetos, 8*s.*; Queen of the Whites, 12*s.*; Henry Jacoby, 10*s.* per 100 rooted cuttings; Vesuvius, shaken out of pots, 12*s.* per 100. All carriage and package free for cash with order.—GEO. HOLMES, Clifton, York.

FERNS! FERNS!! FERNS!!!—Trade offer. Great Annual Sale of Surplus Stock; 100,000, in 25 sorts, Greenhouse and Stove, Pteris, Adiantums, Polypodiums, Cyrtomiums, Polystichums, &c.; 30,000 Pteris cretica cristata, fine bushy stuff, soon make 48 if potted at once; 10,000 Adiantum cuneatum, bushy stuff, all at 12*s.* per 100; store Ferns, variety, 6*s.* per 100, 50*s.* per 1000. Packed free, cash with order. J. SMITH, The London Fern Nursery, Loughboro' Road, S.W.

SPECIAL OFFER of FERNS for CASH.—Extra strong, in thumbs, for immediate Potting, in the following varieties:—Pteris cretica, tremula, cretica cristata, alba lineata, hastata, serrulata, cristata compacta, and Doryopteris palmata. Also a fine lot in 48's, Pteris cretica, cretica cristata, serrulata cristata compacta, Polypodium, Dicksonia antarctica, and Aralia Sieboldi. Price for thumbs per 100 or 1000, and 48's per 100 on application. Inspection invited by R. PENGELLY, Dyson's Lane, Upper Edmonton.

LARGE PALMS and FERNS. 3 SEAFORTHIA ELEGANS, about 12 ft. high, in 18-inch pots, £3 each.

1 LATANIA BORBONICA, about 6 ft., six perfect leaves, 20-inch pot, 42*s.*

1 DICKSONIA, fine specimen, 3 ft. stem, 10 ft. across fronds, £10.

1 DAVALLIA MOREANA, 4 ft. high, 5 ft. diameter, 15-inch pot, 30*s.*

1 DAVALLIA MOREANA, 4 ft. high, 5 ft. diameter, 18 inch pan, 35*s.*

1 ARAUCARIA EXCELSA, 10 ft. in 18-inch pot, 10*s.*

Apply to Mr. NESBITT, The Gardens, Bulwell Hall, Notts.

FERNS.—Pteris tremula, P. cretica cristata, P. cretica major, P. argyrea in large thumbs, grand stuff, ready for potting on, 12*s.* per 100; a few thousands from stores, at 5*s.* per 100. Cash with order. Packing free. GOWERS AND EMBERSON, Comely Bank Nursery, Walthamstow, E.

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50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high, 15*s.* to £10 per 100, free on rail. J. J. CLARK, Goldstone Farm, Brighton.

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CUPRESSUS LAWSONIANA, 3 to 10 feet.
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HOLLIES, Green, 2 to 5 feet.
LAURELS, round-leaf, 2 to 5 feet.
,, CAUCASICAN, 2 to 5 feet.
,, COLCHIC, 2 to 6 feet.
,, PORTUGAL, 2 to 5 feet.
PICEA CONCOLOR VIOLACEA, 2 to 6 feet.
,, LASIOCARPA, 2 to 8 feet.
,, NORDMANIANA, 2 to 10 feet.
YEWS, English, 2 to 8 feet.
,, Irish, 2 to 8 feet.
THUIA LOBBII, 2 to 10 feet.
,, STRICTA, 6 to 8 feet.
THUIOPSIS BOREALIS, 2 to 10 feet.
WELLINGTONIA GIGANTEA, 2 to 8 feet.
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Terms strictly Cash with order. Price LIST on application from

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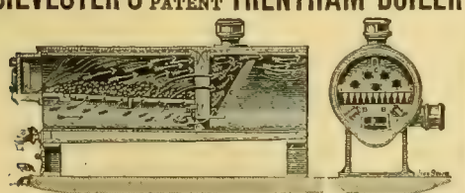
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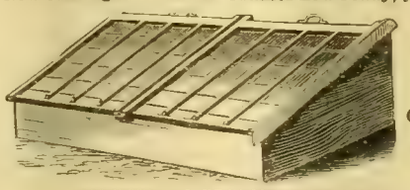
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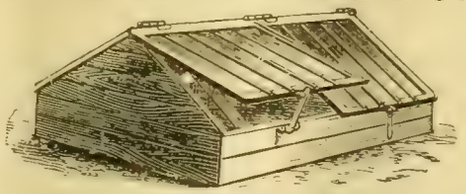
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2 ,,	,, 6 feet by 4 feet	...	...	2	0	0
2 ,,	,, 8 feet by 5 feet	...	...	2	15	0
2 ,,	,, 8 feet by 6 feet	...	...	3	0	0
3 ,,	,, 12 feet by 6 feet	...	...	4	4	0
4 ,,	,, 16 feet by 6 feet	...	...	5	8	0
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TERMINAL END SADDLE BOILERS.	2 ft. 6 in. long	7	0	0
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CARRIAGE PAID to Railway Stations in England & Wales, Edinburgh and Glasgow, Dublin, and other Ports.

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The above are without exception the most useful kind of frame for plant growing, and every one with a garden should possess one. The sashes turn right over one on to the other, and the boxes are put together with wedges, and can be taken apart in a few minutes. Sizes and prices, carriage paid to any station in England, ready glazed and painted:—

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12 feet ,, 5 feet ,,		5	17	6

Larger sizes at proportionate prices.

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STOCK SIZES		SHEET SIZES	
Inches.		Inches.	
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16×12		20×16	
18×12		22×16	
20×12		24×16	
16×14		20×18	
18×14		22×18	
20×14		24×18	

21-oz. and **15-oz. Foreign,** of above sizes, in boxes of 100 feet and 200 feet super.

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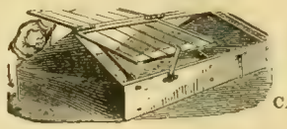
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GARDEN FRAMES in great VARIETY.



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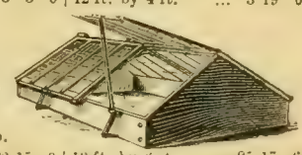
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6 ft. by 3 ft.	...	£2	0	0	6 ft. by 4 ft.	...	£2	7	6
12½ ft. by 3 ft.	...	3	3	0	12 ft. by 4 ft.	...	3	19	0

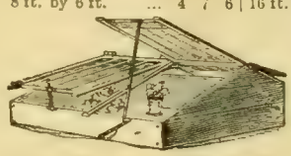
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NEW SPAN-ROOF GARDEN FRAME.



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4 ft. by 6 ft.	...	£2	15	0	12 ft. by 6 ft.	...	£5	17	6
8 ft. by 6 ft.	...	4	7	6	16 ft. by 6 ft.	...	7	7	6



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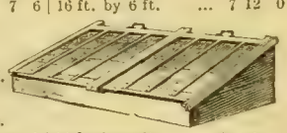
THREE-QUARTER SPAN GARDEN FRAME.

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8 ft. by 6 ft.	...	4	7	6	16 ft. by 6 ft.	...	7	12	0

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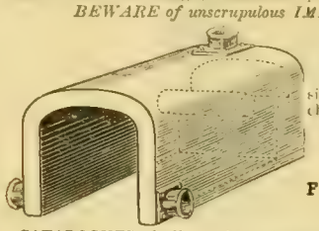
CASH PRICES. CARRIAGE PAID.

4 ft. by 6 ft.	...	£2	0	0	12 ft. by 6 ft.	...	£4	5	0
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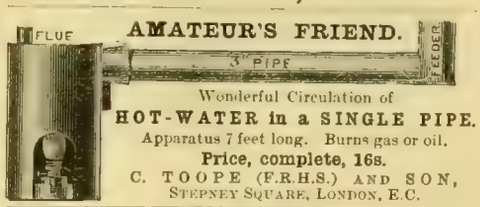
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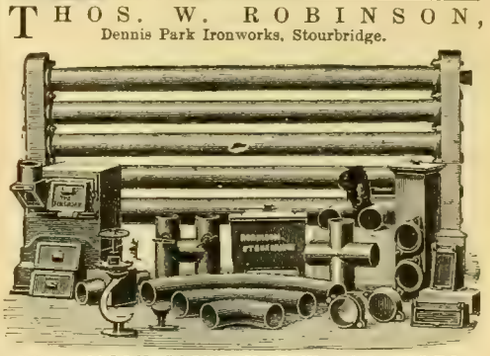
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9	„ ..	0	5	6	20	„ ..	0	11	0
10	„ ..	0	6	0	21	„ ..	0	11	6
11	„ ..	0	6	6	22	„ ..	0	12	0
12	„ ..	0	7	0	23	„ ..	0	12	6
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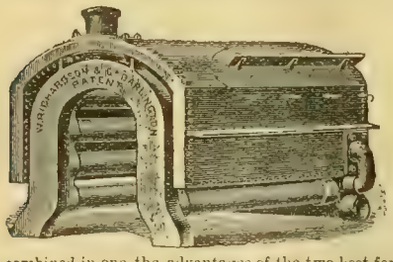
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HOODED TUBULAR BOILERS



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They Heat more than Twice the Quantity of Piping

that can be heated by an ordinary Saddle with an equal amount of fuel. They are durable, quick-heating, easily set, and easy to manage. Send for PRICE LIST to the patentees and sole makers—

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W. COLLETT wishes to THANK the very numerous APPLICANTS for Foreman's Vacancy, which IS NOW FILLED.

WANTED, Correspondents and Subscribers in all Countries of the World, for best HORTICULTURAL PAPER (16 pages), published in Western, U. S. Price 2*s.*, or 50 cents, per year, post paid. Sample Copies free. Address, Western Garden, Des Moines, Iowa, U.S.A.

PARTNER WANTED, with Small Capital, for a good-going Seed and Florist Business. Must be capable of taking charge of Nursery Department.—STEPHANOTIS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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WANTED, a FOREMAN, for Houses. Must thoroughly understand his duties. Wages £1 per week, with bothy. Scotchman preferred.—Apply, by letter, the HEAD GARDENER, Leighton Hall, Ironbridge, Shropshire.

WANTED, a WORKING FOREMAN, for a Small Market Garden. Must thoroughly understand Roses, Strawberries, Fruit Trees, and the Growing of Tomatos, Cucumbers, and Mushrooms, under Glass. State age, references, and wages required.—F. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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WANTED, AT ONCE, an active young MAN, well up in Growing Soft-wooded Stuff, Tomatos, &c., for Covent Garden. Good character indispensable. A permanent place to a suitable man.—State wages required and references to R. E. ADDEY, Ealing Road Gardens, Brentford, Middlesex.

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Mr. E. BRYANT, late General Foreman at The Hoo Gardens, Welwyn, as Head Gardener to T. GILL, Esq., Bickham, Roborough, South Devon.

Mr. T. GALE, formerly Head Gardener to Sir FRANCIS BURDETT, Bart., Ramsbury Manor, near Hungerford, Wilts, as Head Gardener to the Hon. RICHARD DAWSON, Holne Park, Ashburton, Devon.

Mr. JOHN PEARCE, formerly of Shalimar, Ewell, Surrey, as Head Gardener to JOHN WAINEWRIGHT, Esq., Belmont, Lee, Kent.

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RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

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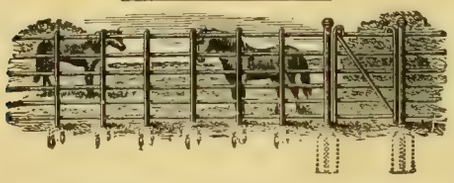
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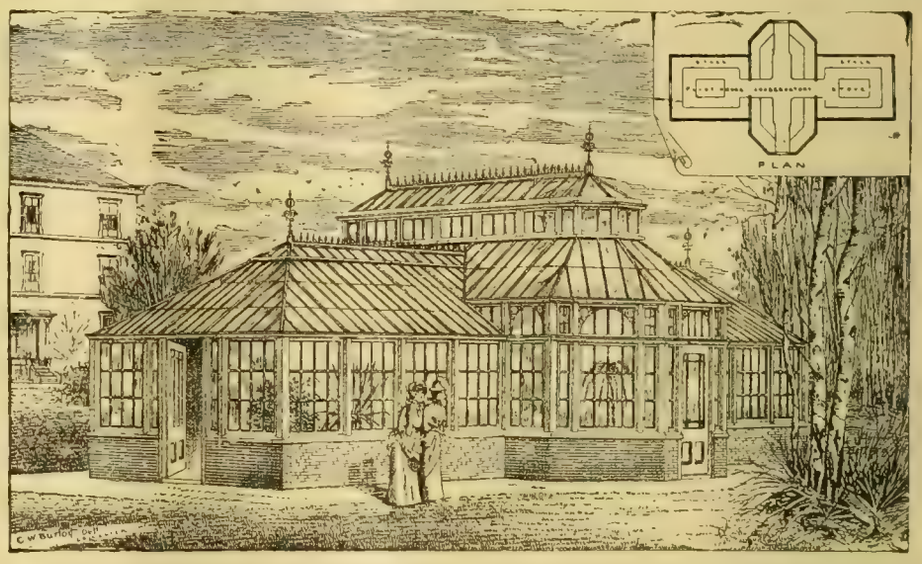
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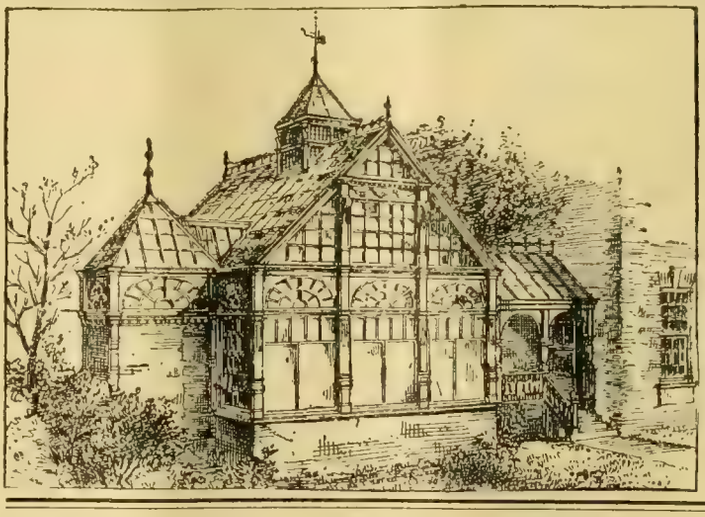


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W. ICETON, Granard Nursery, Putney Park Lane, S.W.

BULBS—BULBS—BULBS.—Our stock of Dutch Bulbs is quite ready for inspection. Customers at liberty to come and select for themselves at the—
NEW HAARLEM BULB WAREHOUSES,
34, Mansell Street, Aldgate, City, London.
Proprietors—MICHAEL RAINS AND CO.
Reg. Tel. Address—"BIOTICUS, London." Established 1856.
CATALOGUE on application.
Named HYACINTHS, 2s. 6d. per doz. 1st size Bulbs of any sort.

CUT MAIDENHAIR FERN all the year round. Present price, 100 fronds for 1s. 3d., Post-free, for cash. Special quotations for large quantities.
TAYLOR AND CO., Timperley, Cheshire.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. McARTHUR, The London Nursery, 4, Maida Vale, London, W.

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to—
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, E.C.
N.B.—Many new, rare, and interesting plants and bulbs will be found in this Catalogue.

Lilium Harrisii, or Bermuda Lily.
CHARLES TURNER can offer extra size Bulbs of this fine LILY, which he has received direct from Bermuda.—The Royal Nurseries Slough.

HELLEBORUS NIGER (Christmas Rose). Price on application. All grown from Divisions. No seedlings or imported roots. October is the best time to move them. Early orders solicited. CINERARIA and Ruby Queen PRIMULA, in 6-size pots, 2s. 6d. per dozen.
G. KERSWILL, Old Bowhill Nursery, Dunsford Road, St. Thomas, Exeter.

50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high, 15s. to £10 per 100, free on rail.
J. J. CLARK, Goldstone Farm, Brighton.

GLADIOLI "THE BRIDE," a few thousands for sale, at £1 per thousand.
Apply, Mrs. POND, Vineries, Jersey.

FERNS! FERNS!! FERNS!!!—Trade offer. Great Annual Sale of Surplus Stock; 100,000, in 25 sorts, Greenhouse and Stove, Pteris, Adiantums, Polypodiums, Cyrtomiums, Polystichums, &c.; 30,000 Pteris cretica cristata, fine bushy stuff, soon make 48 it potted at once; 10,000 Adiantum cuneatum, bushy stuff, all at 12s. per 100; store Ferns, variety, 6s. per 100, 50s. per 1000. Packed free, cash with order.
J. SMITH, The London Fern Nursery, Loughboro' Road, S.W.

LOVEL'S Yorkshire STRAWBERRIES.—Strong, healthy, and well-rooted Runners, to fruit next season. Thury, Paxton, President, Noble, and other good varieties. Full Descriptive Price LIST with Testimonials free. Sample Parcel, 3d.—W. LOVEL AND SON, Driffield.

STRAWBERRIES.—A fine Collection of the best varieties can be supplied. Orders should be booked now. Descriptive CATALOGUE post-free.
THOMAS RIVERS AND SONS, Sawbridgeworth.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Dutch Bulbs.—Dutch Bulbs.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots to suit all buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving weekly from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Thursday Next.

A FINE LOT of ESTABLISHED ORCHIDS, many in Flower and Bud, including some fine varieties and rare species. An importation of about 400 good pieces of CŒLOGYNE PANDURATA, just received in fine order, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 25, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Thursday Next.

TEN THOUSAND fine TUBEROSE and AMARYLLIS BULBS, just received direct from Natal per s.s. *Matabele*.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 25.

On view morning of Sale, and Catalogues had.

Southgate, N.

MR. J. C. STEVENS has received instructions from Mr. W. Howard, to SELL by AUCTION, on the premises, at the Nurseries, Southgate, N., on THURSDAY NEXT, September 25, at half-past 12 o'Clock precisely, a fine lot of well-grown elegant CONSERVATORY and DRAWING-ROOM PLANTS, consisting of Palms in variety, Dracænas, Aspidistras, grand pieces of Devalia canariensis and Maidenhair Ferns, &c. The Aspidistras will be offered to the Trade in Lots of 500 each.

On view the day prior and morning of Sale, and Catalogues had on the Premises, and of the Auctioneer, at his offices, 38, King Street, Covent Garden, W.C.

Dutch Bulbs.

GREAT UNRESERVED SALES.

Four times Weekly.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, all received direct for Unreserved Sale, and lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Wednesday Next.

Just arrived from Lord Howe's Island, in splendid germinating condition,

75,000 SEEDS of KENTIA BELMOREANA and KENTIA FORSTERIANA.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, September 24, at half-past 11 o'Clock, 75,000 SEEDS of KENTIA BELMOREANA and KENTIA FORSTERIANA, just arrived, in splendid germinating condition, from Lord Howe's Island. These Kentias are two of the most elegant and useful GREENHOUSE PALMS that can be grown.

On view morning of Sale, and Catalogues had.

East Grinstead.

Important to the Trade and Private Buyers.

WELL-GROWN GREENHOUSE and STOVE PLANTS, fit for immediate Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Moat Nursery, East Grinstead, close to the East Grinstead Station, on WEDNESDAY NEXT, September 24, at 12 o'Clock precisely, by order of Messrs. Roberts Bros. (in consequence of want of room to house so many plants), 2600 MAIDENHAIR FERNS in 48 and other pots, 600 Tea ROSES of sorts in pots, 200 EUCHARIS, beautiful plants; 2500 BOUVARDIAS of sorts in 20-pots, for Winter Flowering; 2000 CHRYSANTHEMUMS, 1000 TUBEROSES, 500 PTERIS, and other PLANTS, particularly suitable to the Trade and Private Buyers.

May be viewed two days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Husbands Bosworth, near Rugby.

The ENTIRE COLLECTION of STOVE and GREENHOUSE PLANTS, ORCHIDS, &c., by order of Messrs. Gebhardt, the Estate having been sold.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Highcroft, Husbands Bosworth (about a mile from Welford Station, L. and N.W. Ry.), on THURSDAY NEXT, September 25, at 12 o'Clock precisely, without reserve, the choice COLLECTION of well-grown STOVE and GREENHOUSE PLANTS, consisting of Dracænas, Gardenias, Crotons, and others; 100 Camellias and Azaleas, Ferns, Palms, Roses, Heaths, 50 Orchids in variety, Lapagerias, Chrysanthemums, and a good assortment of useful WINTER-FLOWERING PLANTS. Also capital WATER-CART, three MOWING MACHINES, WATER-BARROW, &c.

May be viewed two days prior to the Sale. Catalogues may be had of Mr. SHARP, the Head Gardener, on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Friday Next.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, and 213, Park Road, Clapham, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, September 26, at half-past 12 o'Clock, a fine Consignment of CATTLEYA BICOLOR, ZYGOPETALUM GRAMNIFOLIUM, MILTONIA REGNELLI, CATTLEYA HARRISONIANA, all in the best health and condition. Also a small Collection of about 50 lots of choice and well-grown ESTABLISHED ORCHIDS.

On view morning of Sale, and Catalogues had.

Richmond, Surrey.—Expiration of Lease.

THE FIRST PORTION of the NURSERY STOCK, growing on the Gas Field Nursery, by order of Messrs. G. & W. Steell.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Gas Field Nursery, Richmond, Surrey, five minutes' walk from Richmond Station, on MONDAY, September 29, at 12 o'Clock, the first portion of the well-grown NURSERY STOCK, comprising an extensive assortment of Conifers and Evergreen Shrubs for effective planting, 800 Aucubas, 3 to 4 ft.; 500 ditto, 1 to 2 ft.; Hollies, 700 English Yews, 3 to 4 ft.; 250 Green Hollies, 2 to 4 ft.; Rhododendrons, and other useful stock.

May be viewed one week prior to Sale. Catalogues may be had of Messrs. G. & W. STEELL, The Nurseries, Richmond, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Acton, W.—By Order of the Executors.

IMPORTANT CLEARANCE SALE of GREENHOUSES, HOT-WATER PIPING, GREENHOUSE PLANTS, &c., by order of the Executors of the late H. J. Emanuel, Esq.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Friars Place Nursery, Acton, W., opposite the Acton Station, Great Western Railway, on TUESDAY, September 30, at 12 o'Clock precisely, without the least reserve, about 15,000 GREENHOUSE PLANTS, including 1000 Marguerites, 1000 Fuchsias, 1000 Poinsettias, 500 Hydrangeas, 100 Aspidistra variegata, 2000 Ferns, 5000 Geraniums of sorts, including Ivy-leaf; 1000 Chrysanthemums, best sorts; 1500 Carnations, 1000 Solanums, in 48-pots; 4 specimen Lapageria alba, 50 Azalea indica alba and Fielder's White, fine plants; 2000 Intermediate Stocks, 50 0 Green and Variegated Euonymus, 2000 Aucuba japonica, 3 to 18 inches; 1000 Privet. The erections of twelve capital GREENHOUSES, STAGING, 3000 feet of HOT-WATER PIPING, mostly 4-inch; BRICKWORK, BOILERS, galvanised TANKS, ranges of PITS, 300 casts of FLOWER-POTS, spring VAN, spring CART, and other effects.

May be viewed the Saturday and Monday prior to the Sale. Catalogues may be had on the Premises; of H. C. WILKINS, Esq., Solicitor, Chipping Norton; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The valuable FREEHOLD BUILDING ESTATE of 21 acres TO BE SOLD. Apply to the Auctioneers.

Parson's Green, Fulham, S.W.

39,000 EUONYMUS and OTHER STOCK.

Absolute Clearance Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Ash House Nursery, Parson's Green, Fulham, S.W., near Parson's Green Station, on WEDNESDAY, October 1, at 12 o'Clock, the whole of the general NURSERY STOCK, comprising:—

20,000 Green Euonymus	3,000 Chrysanthemums, various, in pots, and planted out
7,000 Golden and Green ditto, in pots	
12,000 Euonymus, planted out in frames, 3 to 6 inches	4,000 Pteris cretica, in 48 and 32-pots
4,000 Aucuba japonica, 3 in. to 1 foot	500 Ampelopsis Veitchii

May be viewed one week prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Windlesham Nursery, Bagshot, Surrey.

About twenty minutes' walk from Bagshot, and 2½ miles from Sunningdale Railway Stations.

CLEARANCE SALE of exceptionally well-grown NURSERY STOCK growing upon a portion of the Land which has to be given up at Christmas next, by order of Mr. Richard Mason.

Important to the Trade and Large Buyers.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Windlesham Nursery, Bagshot, Surrey, on WEDNESDAY, October 1, and two following days, at 12 o'Clock precisely each day, an extensive quantity of unusually well-grown and thriving NURSERY STOCK, in excellent condition for removal, including 15,000 Portugal Laurels, 1 to 3 feet; 1000 Cupressus Lawsonii, 3 to 3½ feet; 1000 Thuia Lobbii, 2 to 3 feet; 500 do., 4 to 6 feet; 150 Abies Nordmanniana, 3 to 5 feet; 800 Retinospora obtusa, 3 to 3½ feet; 16,000 Retinospora plumosa aurea, 9 to 15 inches, beautifully coloured, suitable for potting, the best in the country; 400 do., 15 to 18 inches; several thousands of other varieties; Tree Box; 500 Golden Yews, 2 feet; 5800 Laurels, of sorts; 50,000 strong Quick; Green Hollies, 2 to 4 feet; 50,000 bedded Green Hollies; 2000 Berberis Darwinii, 1½ to 2 feet; large Forest Trees, 16 to 20 feet; 500 Purple Beech, 8 to 10 feet; 600 Standard Thorns, of sorts; 15,000 Spruce Firs, 2 to 2½ feet; 200 Spruce Firs, 4 to 6 feet; 1000 White Broom, 3 feet; thousands of hybrid and ponticum Rhododendrons, Azaleas, and other American plants; 600 Standard Farleigh Damsons, 1000 Standard Victoria Plums, Apples, and Cherries; Standard Walnuts; 10,000 Berberis aquifolia, 1 to 1½ feet; and other Stock.

May be viewed one day prior to the Sale. Catalogues had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

NOTE.—The Auctioneers invite the attention of intending purchasers to this important Sale, the stock being exceptionally well grown. Purchasers can arrange with Mr. MASON for their Lots to be lifted and conveyed to the Railway Station to be forwarded, at the mere cost of the labour incurred and material used.

Sunningdale.—Without Reserve.

SIX DAYS' ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. C. Noble, who has received from St. John's College, Cambridge, peremptory notice to quit all lands held under them at Christmas next.

Important to Noblemen, Gentlemen, Builders, Fruit Growers, Nurserymen, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, close to the Sunningdale Railway Station, on MONDAY, October 6, and five following days, at 12 o'Clock precisely each day, without reserve, several acres of beautifully grown NURSERY STOCK, carefully prepared for removal, and including 25,000 Rhododendrons, 1 to 4 feet, consisting of named kinds, hybrid seedlings, ponticum, and others all in first-class condition for removal, many thousands of Andromedas, Kalmias, Azaleas and Ericas; 30,000 Laurels, of sorts, 1 to 5 feet; 3000 Portugal Laurels; 4000 Thuia Lobbii, 3 to 5 feet, splendid trees, all lately transplanted and suitable for hedges; 12,000 Thuia americana, 1 to 4 feet; 10,000 Cupressus Lawsonii, 1 to 5 feet; 10,000 Oval-leaved Privet, 1 to 4 feet; 2500 Berberis Darwinii, 1 to 2½ feet; 1000 Green Hollies, 1 to 2 feet, just transplanted. Several thousands of Abies Douglasii, Thuiopsis borealis, Retinosporas, in variety; Austrian Firs, and many others, 4 to 9 feet; very large quantities of Ornamental Trees, adapted for Street, Park, and Avenue Planting, such as Limes, Scarlet Chestnuts, Poplars, Elms, Laburnums, Thorns, and others; 10,000 Spruce, Scotch, Austrian, and other Firs, 1 to 2½ feet; 12,000 Standard and Pyramid Fruit Trees; including 2000 Pyramid Pears, 3 to 7 feet; Fruiting Trees of the best leading kinds; Standard and Pyramid Apples, Cherries, Plums and Damsons. Several thousands of Gooseberries; 2000 Webb's Cob Nuts, 1½ to 5 feet; 2500 Fruiting Berberis, 1 to 4 feet; 1000 Purple Berberis, 1 to 4 feet; 2500 Mahonia aquifolia, 9 to 18 inches. Ornamental and Border Shrubs, in great variety; Ivies, Hypericums, and other plants suitable for growing under trees; also a good collection of Flowering Shrubs, comprising Lilacs, Guelder Roses, Syringas, Deutzias, &c.

Luncheon will be provided for intending Purchasers, and arrangements can be made with Mr. NOBLE to lift and forward any Lots to all parts of the Kingdom at the cost of labour incurred and material used.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Isleworth.

GREAT ANNUAL TRADE SALE of GOLDEN EUONYMUS. By order of Messrs. C. Lee & Son.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the premises, The Wood Lane Nursery, Isleworth, five minutes' walk from Isleworth, and ten minutes' walk from Asterley Park Stations, on TUESDAY, October 7, at 12 o'Clock, 10,000 to 15,000 best Gold and Silver EUONYMUS, 8 inches to 1 foot; many thousands of small SHRUBS grown for boxing, potting, and planting out, consisting of Aucubas, Green and Variegated Cupressus erecta viridis, Cupressus Lawsoniana, Box, Thuias, Retinosporas, Laurels, &c., in great variety.

May be viewed one week prior to Sale. Catalogues may be obtained on the Premises, at the Royal Vineyard Nursery, Hammersmith, W., and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

East Dulwich.—Wednesday, October 22, 1890.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Seeger & Tropp, to SELL by AUCTION, on their Premises, at East Dulwich, on WEDNESDAY, October 22, 1890, commencing at half-past 12 precisely, a large quantity of RARE and CHOICE WELL-GROWN HEALTHY ORCHIDS, many of which will be in bud or flower. Included in the long general List Catalogued, will be found the following:—

Brassia verrucosa and other varieties, grand specimens.
Cattleya Fausta.
Cattleya labiata, the best variety of the old autumn-flowering species; grand plant, 16 bulbs, 10 with leaves, 3 leads, 1 flower-sheath.
Cattleya intricata maculata, most distinct and beautiful hybrid.
Cœlogyne cristata Lemoniana, unique specimens.
Cypripedium Druryi, grand specimen, with 26 growths.
Cypripedium, all the leading best kinds.
Dendrobium splendidissimum.
Lælia elegans alba.
" " Schilleriana.
Lælia grandis superba, the true old form, in bud or flower. The varietal name "superba" is appended to distinguish this fine Lælia from the ordinary type more frequently met with.
Lælia elegans Turneri.
Lælia Perrini alba, the pure white Perrini, and must not be confounded with L. Perrini nivea, which has a tinge of colour in the lip. Splendid plant, 6 bulbs, 5 with leaves, 1 lead, 1 flower-sheath.
Masdevallia sceptrum. This belongs to the window-bearing group (Cryptophoranthus).
Odontoglossum nebulosum candidissimum, the pure white form.
Oncidium, over 60 species.
Pleurothallis Roezli, perhaps the finest specimen in existence, with several flower-scapes now pushing.
Sobralia violacea, grand specimen.
" Warscewiczi.
" leucoxantha, fine specimen.
" virginalis.
" xantholeuca, three very fine plants.
Vanda tricolor variety, fine specimen.

The Sale will also include large importations of BRAZILIAN and MEXICAN ORCHIDS in best possible condition, and a great number of established plants in bud or flower.

Messrs. Seeger & Tropp's Orchid Nurseries are within 5 minutes' walk of East Dulwich Railway Station (L. B. and S. C. Ry.), and frequent trains run from London Bridge and Victoria. Plants will be on view the day previous and morning of Sale, and Catalogues obtained on the Premises; also of the Auctioneers at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.

London, West End.

TO BE SOLD, an old established FLORISTS' and FURNISHING BUSINESS—in important thoroughfare.—Particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside London, E.C.

Every Thursday.—Dutch Bulbs.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY NEXT, and every THURSDAY throughout the season, at half-past 11 o'Clock A.M., large consignments of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland; also Roman HYACINTHS and Paper White NARCISSUS. Lotted to suit all buyers.

On view morning of Sale, and Catalogues had.

On WEDNESDAY and FRIDAY EVENINGS, at half-past 5 o'Clock, SALES of Choice CUT FLOWERS. Entries invited.

Nursery Stock Sales conducted and Valuations made.

Auction Rooms and Offices, 6, Phillips Street, Birmingham.

Great Clearance Sale of Nursery Stock.

MESSRS. MORRISON BROTHERS will offer for SALE by AUCTION, on THURSDAY and FRIDAY, September 25 and 26, the whole of their finely-grown NURSERY STOCK, consisting of upwards of 20,000 Roses, many thousands of named Rhododendrons, Conifers, Ornamental Trees, Evergreens, and Deciduous Shrubs, all in fine healthy condition for removal. This is an opportunity for Proprietors filling their home nurseries with young Conifers from California and Japan at a cheap rate.

Catalogues free by post on application.

Forbesfield Nursery, Aberdeen.

WANTED, a sound, established, SEED, or SEED and NURSERY BUSINESS, in a good Market Town.—M. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, within 10 miles of London, 3 or 4 acres of LAND, suitable for Nursery purposes, with Dwelling-house thereon. Good lease. Particulars to FLORIST, 13, Jerdan Place, Walham Green, S.W.

WANTED TO RENT, between 15 and 50 miles from London, 300 to 500 ft. run of GLASS, in good condition, suitable for Forcing Tomatos, Melons, &c., with some ground preferred.

R. CAMP, Bridge Nursery, Chelmsford.

WANTED TO RENT, a Nobleman's or Gentleman's GARDEN, with or without Land attached. Would also act as BAILIFF, if required.

Address, W. M., 41, Wellington Street, Strand, W.C.

TO BE SOLD, a NURSERY, SEED, and FLORIST BUSINESS, in provincial town; 7 Greenhouses, 3½ acres of Ground, Shop, 6 roomed House, Stable, 7 Sheds and Store-rooms. Established 11 years. Stock, Goodwill, &c., at valuation, to suit purchaser.

BOUQUET, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR DISPOSAL, a FLORIST and JOBBING BUSINESS.

Apply, B., C. Fuller, High Street, North Finchley, N.

Bath (near).

FOR DISPOSAL, a NURSERY, CUT FLOWER and FRUIT BUSINESS, with Dwelling-house and Glass Houses. Stock, &c., by valuation.

Apply, POWELL AND POWELL, Bath.

FOR SALE, a FLORISTS' BUSINESS, at Woodford. Rent £52 per annum, or without Dwelling House, £26; 3 Sheds, 6 Greenhouses, Frames, &c. Seventeen years of Lease to run. Price for Lease, Goodwill, Fixtures, and Stock, £120.

R. M., Ann's Villa, Stanley Road, Woodford, Essex.

FOR IMMEDIATE DISPOSAL, a FLORIST and SEED BUSINESS. Sole reason, ill health. Six-roomed House, six Greenhouses in good condition, well heated Pits and Frames. Stock in Trade and all Fixtures. Shop well fitted. Lease sixteen years. To be Sold at a great sacrifice. Genuine, and a good opening for a Fruit Business. Apply to R. HOLLOWAY, Florist, 87, Dulwich Road, Herne Hill, S.E.

FOR SALE, a FRUIT, FLORIST, SEED, and NURSERY BUSINESS. Owner retiring from business. Long Lease, Greenhouses, Horses, and Vans, Goodwill, &c. Apply, by letter only, to

J. W. GARRAD, 16, St. Ervan's Road, North Kensington.

FOR SALE, SEED, FLORIST, and NURSERY BUSINESS in a good Market Town in the North of England. Incoming light. Good opportunity.

Address, M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Island of Jersey.

NOTICE TO SPECULATORS.

FOR SALE in PERPETUITY,

owing to the Proprietor's death,

THE FINE PROPERTY, known as "THE VINERIES,"

situated in St. Lawrence Valley, about 2 miles distance from St. Helier's, formerly the property of Edward Pond, Esq.

The said property, consisting of DWELLING-HOUSE, COTTAGES, STABLES, COACH-HOUSE, about 3000 feet long of GREENHOUSES, HOT-HOUSES, PACKING-HOUSE, FRUIT TREES in full bearing, the whole measuring 11 vergées, 4 perches, 21 feet (5 acres), facing south.

This property is admirably situated in one of the finest localities of the Island, and by its position worth the special notice of speculators.

For particulars and Price, apply to JOHN SYVRET, Solicitor, No. 16, Royal Square, St. Helier's, Jersey.

TO LET, a well-established NURSERY, about 12 acres in extent, well stocked and in fine condition, situated near a large city.—Full particulars on application to A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Fruit Farm.

TO BE LET, a FRUIT FARM, in Oxfordshire. Apply to Mr. COOPER, Western Elms, Reading, Berks.

A Splendid Opportunity for an Industrious and CAPABLE MAN.

TO LET, with Immediate Possession, a well-established NURSERY and SEED BUSINESS.—Good six-roomed House, five Greenhouses, several Pits, standing on two acres of ground, close to the railway station, in the important market town of Chippenham, where a lucrative trade has for some years past been carried on. Owner now retiring.

Apply to Mr. GARTSIDE, The Nurseries, Chippenham.

TO LET, a compact NURSERY, consisting of six Span Roofs, 40 feet long, in capital condition, Furnaces and Pipes in good working order. No Stock. A seven-room Cottage on the Ground—about ¼ acre; two-stall Stable and Sheds. Within 100 yards of High Street, Peckham, S.E. Rent very moderate.

Apply, Mr. SLATER, Builder, Clayton Road, Peckham, S.E.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Landscape Gardening.

MR. ARTHUR M. KETTLEWELL, LANDSCAPE GARDENER, having great experience in all matters pertaining to the artistic arrangement or re-arrangement of Grounds, IS READY TO UNDERTAKE the Designing and Laying-out of Private or Public Gardens, Parks, Cemeteries, &c. Send for his Manual on the "Art of Landscape Gardening," excellently reviewed by nearly all the leading Gardening Papers, post-free 7*d*.

Address, Titley House, Titley (R.S.O.), Herefordshire.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

NEW DESCRIPTIVE PRICED CATALOGUE

Post-free on application to

THE VINEYARD AND NURSERIES,

GARSTON, near LIVERPOOL.

The Best Present for a Gardener.

VINES and VINE CULTURE.

The most complete and exhaustive Treatise on Grapes and their Culture ever published.

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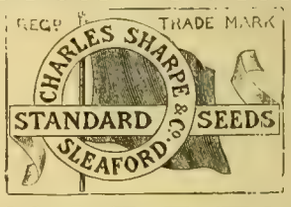
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 20, 1890.

CASTLE HOWARD.

IT is a short ride from York, on the Scarborough line to Castle Howard Station. Thence a drive of 3 miles through the village of Welburn, and through a park of 900 acres, enlivened by deer and black cattle, and the presence of many grateful tourists and neighbours, will bring you to one of the finest houses in England.

Says Mrs. Beecher Stowe, in *Sunny Memories of Foreign Lands*:—"In riding through the park from the station we admired an avenue composed of groups of magnificent Beeches, sixteen or eighteen in a group, disposed at intervals on either hand." The Beeches were planted by the third Earl of Carlisle early in the last century, and they were now in their glory, though they may not, perhaps, prove so long-lived as single trees. In the centre of the park, near the house, four roads and four avenues meet, the length of the avenues being not less than 6 miles, and they are all of Limes in double rows, except the Beeches I have mentioned. An obelisk marks the meeting of the ways, and an inscription as to the date when the house was built, and when the trees and groves of the park were planted. The inscription commences in verse, but Pegasus shows little spirit, and soon breaks down. It is there stated in plain prose that "Charles, third Earl of Carlisle, of the family of the Howards, erected a castle where the old Castle of Henderskelf stood, and called it Castle Howard. He formed the plantations in the park, and all the outworks, monuments, and other plantations, belonging to the said seat, began 1702, and set up this inscription, 1731."

Sir John Vanbrugh, the builder of Blenheim, was the architect of Castle Howard, and good judges have said that the Yorkshire palace is a better house than that of Oxfordshire. One can imagine that the owner must be thankful it is not quite so big; but it is so big, that only a princely fortune could sustain the cost of living in it. A guest was once retiring to his chamber when his light went out, and he lost his way. He

found himself on the marble pavement of the great hall in the centre of the house, with a cupola above 100 feet high, painted with the Fall of Phaeton, by Antonio Pellegini. Phaeton having fallen, it was nearly dark, but he could just discern glimpses of tropical vegetation, decorations from the conservatory, Palms, and Tree Ferns, and tall stems covered with white blossom, and looking ghost-like in the dark. Statues loomed sternly, and seemed to move in the dusk—Augustus Cæsar, Marcus Aurelius, Bacchus, and Sabina—he wished himself elsewhere. Several corridors lead from this centre to various parts of the great house. He followed one of these, and passed through a maze of grand rooms, vestibules, and passages, groping in the dark, and laying hold of picture-frames, curious cabinets, basso-relievos, and here and there a statue in marble. Sometimes he stumbled on a couch or sofa, very exquisitely upholstered, but cool in such exceedingly inclement weather as we have had this summer. At last, after long wanderings and fruitless longings for a good, thick wrapper, his evening dress being scanty, he sat down quite forlorn at the feet of the Goddess of Plenty near a staircase, which he ought to have ascended, and here the watchman on his rounds discovered him at daybreak.

The north front of Castle Howard consists of an elaborate centre of the Corinthian order, with a cupola on the top, and extensive wings on either side. The south, or garden front, is magnificent. The centre is composed of a pediment and entablature, supported by fluted Corinthian pilasters, and approached, as is the door of the north entrance, by a flight of stone steps, so that the house and floor of the hall are well lifted above the level of the ground, gaining much thereby in stateliness and height. A turf terrace, decorated with statues, extends from the south front, past Ray Wood, to an Ionic temple, half a mile distant. The garden ends here, but a grass-walk leads further on to the mausoleum. The house is open to the public six days a week, when a cicerone of excellent voice and memory points out the chief objects in a fine collection of works of art, pictures, tapestry and statues, arranged in galleries, corridors, and stately rooms, that seem innumerable. Perhaps nothing here expressed in stone, or marble, porphyry, or alabaster, nor even the paintings of the two Caracci, make a stronger appeal to the imagination than a little cylindrical block placed among groups of sculptures and antiques at the entrance to the chapel. It is, as an inscription above it states, an ancient altar from the temple of Apollo at Delphi.

A modern relic of peculiar interest is a costly vase, made of Bog Oak, which was presented to the seventh earl by his supporters in the West Riding, when, as Lord Morpeth, he lost his seat on the Corn Law question. I can only say further of this distinguished advocate of a cheap loaf, that he afterwards became Lord Lieutenant of Ireland, being the second Earl of Carlisle who had filled that post, and that he died unmarried. This event caused a break in the long descent from father to son, a brother succeeding—a clergyman—who died at an advanced age early last year. The future succession of this ancient earldom is well secured by the numerous family of the present holder of the title.

The park surrounds the house in all directions, and among many charming views which it commands, those which include the lake are amongst the most delightful. The lake, too, deserves its name, since it is not a mere pond, but a noble sheet of water, seventy acres in extent, long drawn out in a natural valley, and with plenty of timber reaching to the margin of the water. There is nothing pinched or cramped about this noble seat. The house is commanding in its site, as well as vast in its proportion. The timber is fine, especially the group of big trees in the vale below Ray Wood. There is a Silver Fir within the wood estimated to reach 120 feet high, and measuring 12 feet in circumference at 5 feet from the ground. The distances in so large a park are necessarily great, and a long day was not sufficient to enable me to complete my appointed task. I found time, however, to visit several charming scenes, to surprise the deer in their retired glades, where they herd among the great trees, and still to reach a tall monument before sunset. This attractive column had been conspicuous from various points during the day. It stands on high ground outside the park, and overlooks the city of York and its minster, and as many miles of Yorkshire as the eye can cover—cornfields, woods, and wolds. An avenue leads to the column, and I must not omit to say, that it was erected by public subscription, in honour of the seventh earl, who will ever be remembered as a statesman who served his country well, and, as a Yorkshire worthy, esteemed by his neighbours.

It is said on good authority that Ray Wood, near the house, is a bit of natural forest. If so, it has been planted freely with specimens of introduced timber. It contains two other foreign ornaments, such as a Temple of Venus and some statues, with an urn representing the Sacrifice of Iphigenia. These things are harmless, though I would always rather meet a squirrel in a wood than a statue.

The Gardens.

There is a wide expanse of flower-garden on the south side of the house, with beds neatly edged by Box. The Boar Garden, too, on the west front of the house—named from a fine cast of the Florentine Boar in the centre—is in much the same style. Box is a handsome permanent edging, but there is such a thing as "too much of a good thing," and I believe the flower gardens are to be modified, as they are hardly in keeping with the character of the house. It will be found difficult, however, to improve upon the general plan of the Boar Garden, if it is retained as a flower garden, and not converted into a lawn and shrubbery.

The kitchen gardens, which in Mr. Riddell's absence were shown to me, on August 8, by an able substitute, consists of 12 acres, surrounded and divided by walls, so as to afford a large space for protected borders, and for wall fruit, and besides the walls of brick, some thick and well-clipped walls of Yew provide additional shelter for the ranges of glass-houses, and especially for the great conservatory. Within the walls is Mr. Riddell's house, a building in the Italian style, with creepers on the wall, and nestled in a most appropriate place for the home of a horticulturist, among shrubs and lawns, fruits and flowers, with beds of capital vegetables not far off. Rows of gorgeous Poppies enliven one of the aspects of this snug abode. An apiary stands close by. Then comes a clipped hedge of Privet, and behind it the palatial conservatory enclosed by a lawn, and protected, as before said, by a fence of Yew. The borders and edges of walks are kept gay all through the season with flowers, including a fine collection of good old-fashioned sorts. Those who love flowers will not be displeased with a few names taken from a group of common sorts, but good and beautiful for all that, displaying their robust excellence here in the open air, without glass to shelter them, or stove-heat, such as the aristocratic Tree Ferns and Palms might require. Here are some of the herbaceous plants which are appreciated at Castle Howard:—Pentstemons, Delphiniums, Phlox, Sweet Williams, Campanulas, Anemones, Œnothera, Dahlias, Foxgloves, Sweet Peas, Lobelias, Michaelmas Daisy, Gaillardias, Helianthemums, Iris, Fuchsias, Helenium, Golden Rod, Sunflower, Lupin, Wallflower, Lychni, Chalcedonica, scarlet and white, and each very fine; perennial Peas (Lathyrus), white and scarlet; Veratrum album, a fine hardy foliage plant; Spiræas, Senecio, several sorts, yellow, gold, and purple-crimson; Statice, several sorts; and a long list besides. I had almost omitted the Chrysanthemums, which abound. Gooseberry bushes are without number. The vegetables are a sight to see—beds of Onions and Turnips, plots of Carrots and Parsnips, and rows of Peas and Scarlet Runners. It is known that abstainers consume far more of the products of the garden than those who partake, however moderately, of strong drink, and as the Earl and Countess of Carlisle and their great household do not, even in their dreams, "Tipple imaginary pots of ale," or indulge in any kind of alcoholic beverage, it is possible that this wealth of vegetables and fruits may be due to the teetotal practice of the family.

I had not time to examine the greenhouses closely, but I examined some of them, including the great conservatory, five vineries, and houses for Melons and Cucumbers, Pines, and Tomatos. My visit was paid in one of those rare days in August when the sun shone hot. *H. E.*

PEACHES AND NECTARINES ON OPEN WALLS AT MEREWORTH.

We are being repeatedly told of the fine crops of these fruits which used to be grown years ago on walls, and that, owing to adverse seasons, it is next to useless nowadays to attempt to grow them in this way. Whether the seasons common in our country in lang syne were better for out-of-door Peach growing, is beyond my experience; but there is one adjunct to that end that is often met with in old gardens—that is, walls furnished with flues, which are seldom, if ever, made use of now. This would lead one to the belief that at the time these walls were built it was thought that some artificial heat was good for the trees when in bloom, and also in wet autumns. But it was found that good crops of stone fruit could be grown [sometimes] without the aid of the flues. This does not alter my opinion that a little artificial warmth in the walls would prevent the loss of a crop by frost in spring, and would assist the well ripening of the wood in a dull, sunless season. But the question is really, How much better was the fruit in the majority of seasons years ago to that of the present time growing on thoroughly-managed fruitful trees, say, from six to twelve years old, and planted in a well-prepared border. It strikes me that years ago, before glass was so cheap, gardeners had much more time to devote to their wall trees than they have now; and that it was in a great measure due to this timely attention that a good crop of fruit was obtained. At the present time, where we see the Peach, Nectarine, and Apricot well cared for throughout the season, good crops of fine fruit are generally the rule. So far as varieties go, we have numbers which ripen in July, August, September, and the early part of October, after which date Peaches outside are not worth eating, and the earliest varieties are by no means very good-flavoured. The Waterloo, Alexander, and Amsden varieties of Peaches ripen at Mereworth, Kent, at about the same time; and in planting, it would be needless to plant more than one or two of any of them. I give the preference to Waterloo, and to form a close succession to any of these three, Early Louise would be found suitable, which, although it is seldom first-rate here, reaches a nice size. Hale's Early, a well-known variety, should closely follow. Early Louise, and Rivers' Early York, which seldom fail to give us a crop of fine fruit, ripen about the middle of August, according to situation and season, come next into use. Early Grosse Mignonne is a capital Peach, of good flavour in most seasons, but not so large as the Early York. Of Condor I cannot say much about, my tree having borne only three fruits. The fruit has a good appearance, is of nice size, and passable flavour.

A'bec is a Peach of which I have formed a good opinion. It is a very free bearer, the flesh is melting and sweet, and the fruit of middling size. Grown on a south-east aspect, the first ripe fruit was gathered on August 24. A well-known hardy and free-bearing variety is Stirling Castle, whose fruit is fine in size and colour, and it should not fail in any collection. The flowers are probably the poorest of any that I am acquainted with, but about its setting qualities there can be no question.

Dymond is one of our finest mid-season Peaches, which sets better than any other we grow. The fruit is large, of a fine colour, not unlike a Royal George, and the tree has a strong constitution, and is not apt to be mildewed. Alexandra Noblesse and the Old Noblesse are both richly flavoured fruits, though their pale colour is disliked by some persons. They are, notwithstanding the colour of the skin, the best of Peaches. Bellegarde is also a fine Peach, ripening late, about September 20, but this year I think it will be a week earlier; in fact, all the Peaches have ripened earlier than usual here this season. Belle Beauce and Dagmar are good Peaches, the former is of a fine, rich colour, and good size, whilst for a late Peach Gladstone ripens well here, and usually bears good crops.

Goshawk and Barrington in the generality of years produce good and very fine fruit. But very late sorts, we find, as a rule, do not ripen well, though in favourable seasons we have had them of passable quality. The variety called Falcon, I intend to plant this autumn, having seen how well it succeeds at Barham Court, where I recently saw a tree with 300 on it. It is considered a fine fruit. Napier, Elruge, Humboldt, Downton, Pine-apple, and Pitmaston Orange Nectarines are all good, and generally crop well. In planting new borders, too much attention can hardly be paid to their drainage, which should always be good. In some districts, and in wet soils, it would pay to have the south wall built higher by 1½ to 2 feet, so as to secure a high and sloping border for the trees. The soil should consist of loam, mortar rubble, some wood ashes, and a good fair sprinkling of crushed bones, and the whole being firmly rammed when moderately dry, and again after planting. I have no hesitation in saying that with careful attention as regards pinching, thinning, and pruning the shoots, lifting the trees bodily when gross growth shows the need for doing so, and keeping the foliage clean at all times, and with no lack of moisture at the roots, good fruit can be grown now equal to that of years ago. *H. Markham, Mereworth, August* 30.

LANDSCAPE GARDENING.*

(*Continued from p.* 294.)

Particular emphasis is laid on the use of water in the landscape, either as running streams or still water, in all places where it can be introduced with naturalness and appropriateness. Excellent advice and admirable directions as to construction, are contained in the chapter on The Approach. Some good examples of road junctions and carriage-sweeps are found in this part of the work, and useful if drawn to scale. In the matter of choice of a site for a dwelling, the author favours the south-east for the front for Mid and Southern England, with good reason, the heat being then less felt in summer and the cold in winter, without there being any appreciable diminution of light. In northern shires, he thinks a position facing more southward is best. We are glad to find, that he is not enamoured of gravel in all places as a substratum on which to build, and prefers a clay if it be dry, or drainable.

The evils of planting trees close to dwellings is well dealt with; and in some districts the author would not have many shrubs in their vicinity, unless it be on the north-east, where either or both may be planted. The terrace and its construction receive a good amount of attention; some useful working details, not too numerous any where, being appended. The chapter on the formation of a garden, beginning with the first step, is one that will be found of the greatest use to all who are charged with the laying out of a place, for the instructions, though succinctly put, are, as such matters should always be, thoroughly practical, and sufficiently copious. In the chapter on planting, the warning to copy Nature, but not servilely, receives its example, for whilst Nature plants everywhere—hill, valley, and plain—the artist should only seize on her in her best moments—her most effective pictures. For the subjects advised to be planted we refer our readers to the work itself, as also to the directions for removing big trees with most of their roots intact. Water and its treatment has, as we have before said, received much attention from the author, and pleasing illustrations of lakes, boat-houses, fountains, and water-basins accompany this portion of the work. Several examples of gardens laid out come in at the end.

The work may be recommended to all those who are desirous of becoming efficient in the art of laying out ground, as containing much useful information conveyed in a pleasant manner; and what is of the greatest value, the reason why a thing is done or a particular course recommended is clearly set forth.

* *The Art and Practice of Landscape Gardening*, by Henry Ernest Milner. (Simpkin, Marshall & Co.) 4to, pp. 116, with numerous illustrations.

TREES AND SHRUBS.

PTELEA TRIFOLIATA.

A fine young specimen tree of this—the shrubby Trefoil of North America—is now to be seen in the Botanical Garden at Oxford. It is now covered with clusters or corymbs of its curious winged fruits, which are decidedly more conspicuous than the less prominent greenish flowers which precede them The leaves can be seen taking on the yellow tinge they generally assume in autumn. The seed-pods or fruits have very much the appearance of those of Hops, and they are pungently bitter and aromatic, and they form one of the substitutes for Hops. *R. D.*

Pinus monticola.

Two years ago the King of the Belgians was on a visit here, and as our custom is to ask distinguished visitors to plant a tree in the Pinetum, His Majesty was asked to do so, and I chose the above tree for the purpose. The result of this early transplanting was, that it threw the tree into bearing, for last year and this it has borne a crop of cones—not a very desirable thing for a young tree, but it will soon grow out of that; but I want to call attention to the incredible quantity of turpentine or resin which it contains. Weall know that nearly every plant of the Conifer family contains more or less; but this Pine far excels them all, for so abundant was the resin on the cones, that on hot days it formed in beads and dropped down on the ground, so much so that one might have collected it in quantity, and the branch which I cut for you this morning was equally full. I never remember this tree being mentioned as abounding in resin, but this is the tree to plant to give quantity. It is hardy, grows freely at a good altitude, for Douglas, who discovered it, called it monticola, "dwelling on the mountain," and the timber is fine-grained, strong, and durable. *J. Rust, Eridge Castle, near Tunbridge Wells.*

Round-leaved Beech.

Some years since Messrs. Jackman, of Woking, observed a sporting branch on a common Beech on which the leaves were closely crowded and nearly orbicular in shape. This was propagated, and we had lately the pleasure of seeing it and of admiring its singular appearance. For Beech hedges it will be desirable, and, if worked low, so as to keep it dwarf, it would form a novel plant for large rock gardens, corners of shrubberies, and similar positions. It is both interesting and attractive.

Acer eriocarpum var. Jühlkei.

Judging from the name, this is of German origin, but whatever its source, it is a remarkably beautiful tree. Sir C. Wager's Maple is always a beautiful tree, and one which we know from experience does well in smoky localities. Its habit is elegant, and the leaves, glaucous beneath, with pink stalks, are very pleasing. Calling at Messrs. Jackman's nursery at Woking, recently, the manager obligingly called our attention to the variety above named. There were several young trees of it, mostly with more or less variegated foliage, but one tree in particular was specially beautiful—a veritable harlequin in colour, the leaves being variously mottled with yellow, white, deep purple, claret colour, and rose. No two leaves were alike, but all were more or less mottled in the way we have described. It was more like a richly-coloured Croton than a hardy tree. Planters are sure of obtaining a beautiful tree in any case; they may get one of a very high degree of beauty. Besides, it is not improbable that the less showy trees may in some seasons array themselves in special magnificence.

Dacrydium Franklinii.

This elegant Tasmanian tree is not only hardy at Kew, but also in the Royal Botanic Garden, Edinburgh, from whence Mr. Lindsay obligingly sends us a specimen. At Longleat, Wilts, there is also a fine example. The Huon Pine, as it is called in Tasmania, is one of the loftiest trees in the island, and its timber is of great value for shipbuilding and other purposes. In this country it forms a slender pyramidal tree, with branches at first spreading horizontally, but pendulous at the ends. The leaves are dark green, minute, scale-like, and appressed as in the Cypresses. The male flowers are yellow, placed at the ends of the branches, each measuring about a quarter of an inch. The filaments are prolonged into a deltoid or lancet-shaped connective, the two anther lobes opening cross-wise. The fruit is succulent like that of the Yew, and is freely produced under glass.

Berberis Thunbergii.

Mr. Anthony Waterer sends us branches of this erect-growing Berberis, to show how handsome it is in its autumn garb. The branches are slender and wiry; the leaves tufted, each small, spoon-shaped, tapering to a stalk nearly as long as the blade, rich crimson (at this season), on the upper surface, cream-coloured flushed with pink beneath. The shrub is a native of Japan, quite hardy, we believe, and of moderate dimensions, so that it may be recommended as a fit inmate of any garden. It is figured in the *Bot. Mag.*, t. 6646.

Pinus parviflora.

From the Edinburgh Botanic Garden we have received cones of this Japanese Pine. It is of the Cembra type, with leaves in fives of a very bright blue-green colour, with silvery stripes along the bands of stomata. This tree produces cones very freely in many places in almost all years. The young cones are of a deep purple colour. Owing to its moderate size and highly ornamental character, this tree may be recommended to be planted on a lawn as a specimen.

Pinus Koraiensis.

To Mr. Lindsay, Curator of the Royal Botanic Garden, Edinburgh, we are indebted for cones of this species, which has much likeness to P. parviflora, but the leaves are longer, its cones more elongated, the scales not so tightly packed, more convex, and with their free edge ultimately reverted. The young shoots are covered with felted down. The perulæ, or bud-scales, thin, deciduous, lanceolate; the male flowers in clusters, each ovoid, a half to three quarters of an inch long, violet; young female cones purple. It makes a handsome specimen tree, of medium size and moderate rate of growth.

Pinus pungens.

To Mr. Noble, of Bagshot, we are indebted for cones of this two-leaved Pine, which has some resemblance to Pinus silvestris, but the cones are very different. In P. pungens they are pinkish-brown, glaucous when young, when ripe, of the size of a small Apple oblong rounded, the individual scales gradually tapering to a stout conical point which is either straight or incurved. The tree, which attains a height of 40 to 50 feet, is a native of the Alleghany mountains, at a distance of 300 or more miles from the Atlantic Coast.

Abies concolor violacea.

From Mr. Anthony Waterer we have received

cones of this variety, which differ from the ordinary form, particularly in the plum-coloured cones, those of the species, also sent by Mr. Waterer, being olive coloured. The depth of the exposed portions of the scales is also greater than in the ordinary concolor. The cones are excessively sticky, from exudation of resin. A. concolor violacea is a handsomer plant than the ordinary concolor, the foliage being glaucous with a light violet tinge.

REMARKABLE TREES ON THE HOLWOOD PROPERTY, KENT.

THE CLUSTER PINE (Pinus pinaster). — Six of these trees growing within a space of 100 square yards, and containing 548 feet of wood, are not to be found on many estates in this country. Such, however, is the case at Holwood, where a wood of average dimensions, and composed principally of Scotch Fir, Oak, Chestnut, and the Cluster Pine, was planted at stated distances apart; with the latter, the six whose aggregate contents are here given, being about the largest.

Perfectly straight, branchless for fully 40 feet, and with a very gradual taper throughout, describes well the stems of these trees, which at a short way off, and when viewed along the woodland glades, have more the appearance of rugged columns than the denizens of the forest.

The average height of the Pines may be put down at 90 feet, the stem girth at a yard up fully 8 feet, and the cubic contents between 80 and 90 feet. Individual size is not, however, the chief characteristics of these pinasters, but the large number of specimens of unusual dimensions that may be found in a small extent of ground. It would almost seem, judging from the method adopted in planting, that the wood had ultimately been intended to be one of this particular Pine, for the trees are at fairly regular distances apart throughout the greater portion of this plantation.

Generally speaking, the bark of these pinasters is rough and uneven of surface, but the stems are remarkably round and symmetrical, while the taper throughout, though gradual, is very slight.

The soil which has produced such fine specimens of this particular Pine, as also of the Scotch Fir growing alongside, is of a light peaty nature at top, but only for a short way down, and resting on a deep bed of gravel, and resembles closely that of which the natural Pine woods of Scotland is composed.

Beech.—As might be expected from the chalk formation of this part of Kent, the Beech grows with unusual freedom, and where a depth of soil overlies the chalk, the trees attain to great perfection, and are of unusual proportions. Six of, perhaps, the largest trees were, when measured, found to contain 667 feet of timber, the average girth of stems at a yard up being fully 9 feet, and the total height 71 feet.

The timber is in all instances of good quality, clean, and well fitted for constructive purposes. One of the most remarkable is that growing in the Lake wood, and which is, perhaps, as fine a furnished specimen of the Beech as could well be desired. The trunk is also of unusual dimensions, measuring 20½ feet in girth at a yard from the ground, while the far-spreading head covers a surface of fully 78 feet, in the widest part. I have computed that this tree contains nearly 250 feet of wood. Growing as it does, along the margin of one of the drives, but at a considerable distance therefrom, and on the well-kept greensward, this Beech, with its giant trunk and far-spreading, well-rounded head, is an object of great beauty and general admiration.

The Purple-leaved Beech, too, is well represented at Holwood, for directly in front of the house, but a good distance away, and on the gently sloping ground, grows one of the finest trees of this kind that I have yet seen. At 3 and 5 feet from the ground, the stem girths 11 feet, and 10 feet 11 inches, while the tree rises to fully 52 feet, and has a spread of branches 75 feet in diameter. Seedlings from this tree produce about 85 per cent. of purple-leaved forms similar to the parent, but the opposite of this is usually believed, and so grafting of the tree has been largely resorted to. *A. D. Webster.*

NEW DISEASE OF HOLLYHOCKS.

GARDENERS are only too familiar with the older disease of Hollyhocks, where the stems and leaves are blackened with the innumerable dark brown pustules of the fungus named Puccinia malvacearum.

During the last few days a grower of Hollyhocks has forwarded to the *Gardeners' Chronicle* office examples of Hollyhocks ghastly white in colour, the whiteness being caused by the growth of a white fungus mycelium or spawn over the entire surface of the plant; the stems at first sight look as if they had received a coat of thin whitewash. On cutting open the hollow stems, the tubular portion is found to be stuffed full of fungus mycelium; this mycelium within and without the Hollyhock has completely absorbed the juices of the host plants, and made them quite brittle, leaving the stems a mere dead shell.



FIG. 64.—HOLLYHOCK FUNGUS.

Embedded in the white mycelium, numerous jet black bodies occur in abundance, especially in the interior of the stem. These black bodies resemble the dung of mice in size and shape, and are known to be the sclerotium, or resting condition of a fungus named Peziza. The black sclerotia are easily overlooked, as they are environed by the white floccose mycelium. The accompanying illustration (fig. 64) shows the interior and exterior of a fragment of Hollyhock stem, with the black resting bodies *in situ*.

Potato plants are sometimes extensively destroyed by an identical or almost identical fungus, and instances are on record where the fungus growth has increased in intensity for ten or a dozen successive years. This may or may not now be the fate of the Hollyhock. To prevent a recurrence of the attack, all the black bodies now present in and on Hollyhock stems should be burnt. To bury them would be simply to favour their growth.

About May next, such of these sclerotia as reach the ground and do not perish, will germinate: they will then produce a fungus named Peziza sclerotiorum, or one of its allies. This fungus somewhat resembles a threepenny-piece supported on a long slender stem some 3, 4, or more inches in height. Each sclerotium will produce two or three of these fungi, and each perfect fungus will produce from two to three millions of spores. When fungus spores are produced by millions, as they usually are, there is, of course, a good chance of some surviving for the reproduction of the parent form. *W. G. S., Dunstable.*

ORCHIDS IN PANAMA.

THE average amount paid for newly-introduced Orchids varies from 10 to 25 cents each, if bought by the thousand. At this and even lower figures most of the species of Orchids are procurable. A higher price for a single plant is paid only if it is a new, or at any rate, very rare or peculiar variety, that may exist only in one specimen. It is, therefore, very seldom the floral value of an Orchid that is honoured with such fancy amounts as from £100 to £250 sterling, but in most cases the rarity only. For to make out the best profits of these (very often would-be), new varieties, they are beautifully illustrated in costly, but from a scientific point of view of little merit works, and named in honour of well paying wealthy men, such as Baron Rothschild, Baron Schroder, Sir Trevor Lawrence, while the names of Sander, Stevens and other nurserymen and auctioneers are found scattered about in literature of this kind in great profusion—and accompanied by flattering descriptions, in which, as leading features great care is taken that the full names and addresses of the lucky owners or speculators are conscientiously given. Notes on points such as the native country of the plant, the physical conditions under which it grows there, the names of the real discoverers, &c., are often omitted. From a scientific, as well as from an ideal point of view, this procedure is to be greatly reprehended; in the first instance, because it confuses and fills the literature of botanical science with straw without grain, and in the second because it degrades to the profanest materialism one of the noblest sentiments in human nature—the love of flowers.

Among the Orchids growing on the Isthmus of Panama, there is none that might fetch anything like such a fancy price as indicated above. No one, therefore, need build palaces of illusion on the supposed "riquezas" hidden in the mountains or woods difficult of access. But the real business-man never does this; he bases his operations on mathematical deductions, and if he can see that upon his investment of capital and labour a profit will result, it is then a business worth while entering upon. And from this point of view (and from this alone), a comparatively large number of species of Orchids growing on the Isthmus, may be utilised. In explanation we will enumerate those species which, from such a commercial point of view, are noteworthy.

1. The genus Selenipedium. Of this genus grow three species on the Isthmus, viz., S. caudatum, S. longifolium, and S. chica. Of these S. caudatum is the most valuable. It grows in the mountainous regions of Chiriqui and Veraguas at an elevation of from 1000 to 1600 mètres. It is a rarely-occurring kind, and not a very good traveller. The other two species have a greater botanical than horticultural value. Notwithstanding this, S. longifolium is often cultivated as a curiosity or ornamental plant.

2. The genus Cattleya. Of this only two species are found on the Isthmus, viz., C. Dowiana and C. Skinneri, of which the former is the rarest, most valuable, and at the same time one of the finest Cattleyas known. It was named in honour of Capt. J. M. Dow, the venerable gentleman so well known to all residents of the Isthmus, in grateful recognition of his many services rendered to scientific travellers who visited Central America in former years, and his own well-known and highly appreciated scientific researches. C. Dowiana inhabits the northern and north-eastern districts of the Isthmus, extending from Costa Rica—slopes of the volcano of Torralba—to the Departments of Cauca and Antioquia, and a region from the sea level to 500 mètres above it. The variety growing in the Departments of Antioquia and Cauca is called C. Dowiana aurea on account of its lighter coloured flowers. A peculiar variety of somewhat smaller development was found in the vicinity of the Rio Tuira in the Darien

in 1879. The other species, C. Skinneri, is only met with in Chiriqui and Veraguas, at an elevation of 600 to 1500 mètres, extending from there into Central America, as far as Guatemala. It is a very floriferous and fine Orchid, though a cheap one, owing to its great abundance and wide distribution. A variety with pure white flowers was first discovered in the vicinity of Torralba, and is now carefully cultivated and multiplied in Costa Rica. It is a very valuable Orchid.

3. The genus Epidendrum.—The species of this genus are distributed in a large number over the Isthmus, of which a few are of commercial value. These are E. prismatocarpum growing in Chiriqui and Veraguas at 1000 to 1500 metres; and E. macrochilum found all over the Isthmus near the sea coast. E. Stamfordianum, also is an exportable kind, though less highly priced than the former.

4. The genus Odontoglossum.—Several of the members of this genus are, next to Selenipedium caudatum and Cattleya Dowiana, the most highly priced Orchids of the Isthmus, and one species, viz., O. Warscewiczi, is exclusively found in this State. It grows at the higher regions on the mountains of Veraguas, from 1400 to 1800 mètres. From a floral point of view, it is one of the loveliest Orchids known. It is a rare and very difficult kind to export. The other species of this genus growing on the Isthmus are:—O. Roezli, O. Krameri, O. Schlieperianum, O. cariniferum, and O. pulchellum. All of them are valuable plants, and will pay for exporting. With the exception of O Roezli, which is found near the coast in the Darien, they all grow in Chiriqui and Veraguas, from 1000 to 2000 mètres elevation.

5. The genus Oncidium is of most common occurrence on the Isthmus, and represented in about ten species. Of these, however, only three or four are of commercial value, but of secondary importance. The two best are O. cheirophorum and O. fuscatum, or Warscewiczi, both from Chiriqui and Veraguas. The other species of interest are O. ampliatum, found everywhere in the warmer region; O. ornithorrhynchum, on the volcano of Chiriqui; and O. altissimum, on the savannahs round David.

6. The genus Trichopilia, though not a very showy Orchid, is represented in three very fine species on the Isthmus. These are T. suavis, T. coccinea, and T. crispa, all growing in Chiriqui and Veraguas at an elevation of 1000 to 1500 mètres.

7. The genus Zygopetalum with its two species, Z. cerinum and Z. discolor, both from the volcano of Chiriqui, 800 to 1400 mètres, conclude the number of valuable Orchids, of those at any rate which always can be sold to some extent.

There grow, however, still several other species of Orchids on the Isthmus, which from time to time may be sold on a small scale also, but these are mere curiosities, or of scientific interest. The principal species belonging to this group are: Catasetum chrysanthum, C. naso, Peristeria elata (known to Isthmians by the name of "Espirito Santo"); Brassavola albida, Aspasia spec, Rodriquezia secunda, Notylia replicata, Notylia albida, Jonopsis paniculata, Masdevallia atennuata, Masdevallia Livingstonei, and a few others. *Panama Star and Herald, August* 8.

New or Noteworthy Plants.

MASDEVALLIA FULVESCENS, *Rolfe, n. sp.**

Notwithstanding the large numbers of Masdevallias which have been discovered during the last quarter of a century, the genus does not appear to be exhausted of novelties at present, as I know of several species for which no names are at present forthcoming. The present novelty is one which came from Messrs. Fred. Horsman & Co. during the early part of the present year, and which had been imported by them from New Granada. It is a very pretty little species, apparently allied to M. infracta, Lindl., but with more brightly coloured flowers. The perianth is of a light buff shade, passing into light purple-brown on the constricted sides of the throat, the upper sepal deeper orange-yellow, shading into purple-brown on the two lateral nerves.



Fig. 65.—Masdevallia fulvescens: flowers purplish-brown on a yellow or buff ground.

The peduncles are single-flowered, short, probably a little exceeding the leaves, which latter I have not seen. It may bear the name of Masdevallia fulvescens on account of the colour of the flowers. *R. A. Rolfe, Herbarium, Kew.*

Masdevallia × Stella, *n. hyb.**

This is a new and very pretty hybrid, raised by Captain T. C. Hincks, of Breckenbrough, Thirsk, Yorkshire, from M. Estradæ, fertilised with the pollen of M. Harryana, and which flowered for the first time during the present summer. It is quite intermediate between the two parents, the tall scapes, the lateral sepals, and the colour of the flowers bearing a considerable resemblance to M. Harryana, while the leaves, the upper sepal, the tails of the lateral ones, also the petals and lip, approximate more nearly to the characters of the seed-parent, M. Estradæ. It is a distinct and elegant little plant. Several very distinct species of Masdevallia have now been successfully crossed together, but no one appears yet to have succeeded in crossing the Chimæra group on to the Harryana group, which would probably yield something novel. *R. A. Rolfe, Herbarium, Kew.*

THE LIVING EARTH.

(Continued from p. 298.)

I am convinced that in our sanitary arrangements we have not sufficiently distinguished between the living mould of the surface and the dead earth of the subsoil. The living mould is our only efficient scavenger, which thrives and grows fat upon every kind of organic refuse; our only efficient filter, a filter which swells and offers an impassable barrier to infective particles, a filter which affords a sure protection to our surface-wells. When we perforate the living humus with a pipe, and take our dirty water to the subsoil, we, as it were, prick a hole in our filter, and every chemist knows what that means. In order to keep the soil healthy, to keep up its appetite for dirt and its power of digestion, the only thing necessary is tillage. Well-cultivated soil, which is compelled to produce good crops, has never yet been convicted of causing any danger to health.

Sanitation is purely an agricultural question, and in the country, where every cottage has, or should have, its patch of garden, there ought to be no difficulty in the daily removal of refuse from the house, and in applying it to agricultural purposes, without any risk of contaminating the water-supply. Given the patch of garden, the only thing necessary to bring about this, the only complete form of sanitation, is the will to do it—the will, that is, to do a profit to one's self without the possibility of damaging one's neighbour. This, unfortunately, is rarely forthcoming, in spite of the Christian religion and the Education Act, and we go on, even in country places, polluting our streams and wells, with our minds agitated, as well they may be, as to when our water will become too poisonous to drink, and where we shall turn for a pure supply in the future. Sanitation is a purely agricultural and biological question. It is not an engineering question, and it is not a chemical question, and the more of engineering and chemistry we apply to sanitation, the more difficult is the purifying agriculture. This, at least has been the practical result in this country. The only engineering implements which the cottager with a bit of garden requires for the sanitation are a watering-pot and a spade, and if his garden be an allotment away from the cottage, a wheelbarrow may become necessary. The cottager, to whom the produce of his bit of land is a matter of consequence, will endeavour to fertilise as much land as possible with the organic refuse at his disposal, and as long as this endeavour is made there need be no fear of failure either from the agricultural or sanitary point of view.

* *Masdevallia fulvescens*, n. sp. (fig. 65).—Scape short, 1-flowered. Perianth tube 5 to 6 lines long, about 3 lines diameter at the apex, a little constricted below, buff-yellow, passing into light purple-brown on the sides. Upper sepal broadly triangular, 2 to 3 lines long, deep yellow shading into purple-brown above on the two lateral nerves, tail 2 inches long, buff-yellow. Lateral sepals united into a broadly rounded body 4 to 6 lines long, buff-yellow, the small triangular free portions passing into buff tails about 2 inches long. Petals obliquely oblong, subobtuse, 2½ lines long, white, with very minute spots of light purple, and with a median band of the same colour. Lip oblong, slightly constricted in the middle, acute, white, with light yellow apex, and a shade of the same colour on the disc. Column slender, with acute purple margins.—Native of New Granada.

* *Masdevallia* × *Stella*, n. hyb.—Leaves elliptical-obovate, petiolate. Scape 7 to 8 inches high. Perianth tube narrow, compressed, straight, sharply keeled behind, 5 lin. long, yellow on sides and in throat. Dorsal sepal elliptical, concave, 8 lin. long, 5 lin. broad, lilac-purple, with purple mid-nerve, and faint side-nerves, keeled behind, tail brownish-yellow, 2 inches long. Lateral sepals broadly falcate-oblong, diverging at base, nearly an inch long, 7 lin. broad, lilac-purple, with purple mid-nerve; tails a little shorter than that of the dorsal sepal. Petals obliquely oblong, obtuse, front angle produced in an acute auricle, white, 3½ lin. long. Lip oblong, obtuse, white, with numerous lilac purple dots, and a deep dull purple apical tooth. Column 3 lin. long, angles acute, white, with minute purple dots on front face. *R. A. Rolfe.*

Drainage.

The panacea for all sanitary ills has been and still is "drainage," and the only scavenger that is in favour is water, notwithstanding the fact that sanitation by water has for its main characteristic "incompleteness." The work is begun and never finished. Our houses are flushed, but we pay for it by fouling every natural source of pure water, whether river or surface-well. If there come an outbreak of typhoid we, as often as not, find the "drains" are to blame; but, as a matter of fact, we prescribe "more drains" as the remedy. You will find that there is one factor common to all these outbreaks, viz., the mixing of excremental matters with water. This mixture generally leaks to the well or rivulet, or water-pipe which supplies the drinking water, which water has not unfrequently been sold under the name of milk, and the result is an outbreak of typhoid; or the mixture putrefies in a cesspool or sewer, and the gases finding an entrance to our houses, cause an outbreak of typhoid. We had not been at this work many years before we recognised that the water-closet poisoned all sources of water. We have had to go far a-field for drinking water, and the result has been that as we left off consuming the springs which we have wilfully poisoned, the amount of typhoid has somewhat abated. When the more remote sources of water get poisoned in their turn—as with our increasing population and our methods of sanitation they inevitably must—the present comparative abatement must, one would fear, cease.

Manurial Value of Sewage.

I wish to say, emphatically, that the manurial value of human excrement is enormous, and that it produces all kinds of fruits, flowers, and vegetables in the highest perfection. I speak from a practical experience of nine years, and my belief is that soil cannot be made more fertile than by mixing it with solid excremental matter. It is quite true, no doubt, that the manurial value of urine is very great, but being fluid it is not so easily retained at the spot where the agriculturist wants it; and we know that when fresh and undiluted it is very dangerous to herbage. The fact is that plants absorb their nutriment from very dilute solutions; and it has been found that a fluid containing about ·2 per cent. is the optimum for plant culture. Ordinary urine, therefore, which contains 4 per cent. of solids, is twenty times too strong; but if it be applied to the soil in its state of optimum dilution, much of the liquid will necessarily soak out of the reach of the roots. Manurial value is a practical matter rather than a chemical problem, and I have no doubt whatever that those who assert the manurial value of earth-closet manure to be low are making a very serious practical mistake; and I have no doubt that arguments based on the theoretical manurial value of sewage, as a whole, or of its several ingredients, are worthless in helping us to decide whether it is advisable or otherwise to keep solid matters out of the drains.

From every point of view—scientific, sanitary, moral, economic—I feel strongly that dwellers in the country should take warning by the towns. They should revert to the cleanly and decent habits of our forefathers, and keep the sanitary offices away from the main structure of the house, and not, as is the filthy custom of the present day, bring them almost into the bedrooms. They should keep solid matters out of the house-drains, and see that they are decently buried in the living earth every day, and they should replace the drains by gutters, and filter all the household slops by applying them to the top of a different piece of cultivated ground every day. Whether an ordinary watering-pot, or a tank upon wheels drawn by a horse be necessary for accomplishing this latter object, will depend upon the size of the establishment; but only those who have systematically pursued this plan, as I have done, can know the vigour which is imparted to hedgerows, shrubberies, fruit trees, or forest trees, by a tolerably frequent dose of household slops. There is no difficulty in doing this, provided the will be present—the will, that is, to combine your duty towards your neighbour with an act which is profitable to yourself.

Finally, you dwellers in the country, whether squires, who are the owners of broad acres, or occupants of modest villas with a garden, or, still more, if you be cottagers with an allotment, where it ought to be, round your cottage, what I have to say to you is this:—

1. That sewage, being a nuisance, although a necessity, it is to your interest not unnecessarily to increase its quantity or its offensiveness.

2. Keep solid matters out of the drains, for by doing this you will prevent the putrefaction of the solid, and you will find the purification of a liquid by filtration through the earth is effected with ease, which is proportionate to the thinness of the fluid.

3. Remove all solid matter every day from the immediate neighbourhood of the house, and bury it in the top layer of cultivated ground. Pour the household slops on to the surface of the garden, and do not make the mistake of attempting what is known as subsoil irrigation. If these directions be followed, I feel sure that by no possibility can you be troubled by sewer gas, and I also believe that you may drink the water from your surface wells with safety.

I am, as some of you know, no mere theorist, I practice what I preach, and have now some nine years' experience; experience which has served to strengthen my opinions, and enables me unreservedly to exhort others to pursue a similar course with myself. In Hampshire I have a garden, and adjoining it are twenty cottages which I also own, inhabited by about a hundred persons. These cottages are scavenged every day, and the scavengings are buried in the garden. The caretaker's first duty is to the cottages, to remove filth and bury it, to whitewash, paint, and to keep decent. His second duty is to the garden, where he acts as under gardener. In the garden, which has an extent of about 1½ acres, I am obliged in self-defence (what a hardship!) to raise the biggest crops possible. This garden not only supplies my London house with a variety of fruit, flowers, and vegetables (Cabbage, Potatos, Carrots, Turnips, Parsnips, Beet, Salsify, Lettuces, Artichokes of both kinds, Peas, Beans, Asparagus, Seakale, Peaches, Plums, Apples, Pears, Figs, Strawberries, Currants, Raspberries, &c.), which I doubt if I could purchase for £50 a year of the neighbouring greengrocer; but the overplus, which is marketable, just about pays the wages of the caretaker and under gardener. I cannot help thinking that the combination of market gardening with cottage owning in country places opens up the possibility of an industry which is at once profitable and advantageous to all concerned, and affords a good chance of solving a sanitary difficulty.

As things go at present, I have very little doubt that the agricultural labourer with his cottage and garden and 12*s.* a week is infinitely better off than the town artisan on 25*s.*, who pays dearly for pigging it in overcrowded rooms, in which a cleanly and decent existence is impossible.

(To be continued.)

CLEMATIS STANLEYI.

This plant was first discovered about fifty years ago by the collector, Burke, in Macalisberg, near Natal, whilst collecting for Lord Derby, in compliment to whom the species was named as above by Sir William Hooker, who figured and described it from dried specimens in the *Icones Plantarum*, t. 589. It is there stated to be "the handsomest species of an extensive and handsome genus," and that it "forms a shrub apparently several feet high, everywhere clothed with silky tomentum, so as to have a good deal the appearance of the silky variety of the North American Anemone patens. The flowers are as large as those of our Corn-Poppy, and, judging from the dried specimens, purple." Notwithstanding this glowing description, the plant does not appear to have ever been introduced into cultivation, until last year, when Mr. Galpin, of Barberton in the Transvaal, sent to Kew a packet of seeds with the following description:—"These seeds come from Johannesburg, and they belong to a shrubby Clematis not more than 3 feet high, with deeply cut silky leaves and large pinkish or pale purple flowers. The fruit when ripe is a beautiful object, as elegant as a bunch of ostrich feathers, and silvery-white. At first I thought it was an Anemone. It is a very ornamental plant, and may, by crossing it with the garden Clematis, produce a new race."

Plants raised from these seeds have lately been in flower both in a sunny greenhouse and in an open border at Kew (see fig. 66, p. 327). They have fleshy roots, tufted herbaceous stems and opposite, at times alternate leaves. These are from 6 to 9 inches long, about half as much wide, bipinnate, the pinnæ varying in size and in lobing on different plants. The flowers are axillary on the upper part of the stems, and the peduncles are 6 inches long, with a pair of leaf-like bracts two-thirds up, from which sometimes other flowers are developed. The flowers are nodding, fleshy, cupped, about 2½ inches across; the segments nearly round, with prominent veins. The colour varies from blush-white to dull rose-purple, with yellow stamens. The whole plant flowers, and all is covered with a soft silky down. The Kew plants are fruiting freely, but the fruit is not yet ripe. It is possible that, by cultivation and selection, or by crossing, as suggested by Mr. Galpin, we may obtain from this Clematis a useful race of garden plants. As it is, there is plenty to attract in the elegance and silky look of the foliage, and in the flowers of some of the varieties, whilst there is still the fruit. Some plants placed outside at Kew last year, and left to test their hardiness, were killed by the frost. The stems die to the ground every winter. *W. W.*

Orchid Notes and Gleanings.

ORCHIDS AT McARTHUR'S NURSERY, MAIDA VALE.

Some rare plants are to be found in the houses at this establishment, and notably, the pure white Lælia autumnalis alba. Among the most noticeable at present in bloom are some fine varieties of Vanda Kimballiana, one with two spikes; the singular little V. alpina, and other species of Vanda and Aërides. An imported batch of Miltonias display great variation in the flowers of the different plants of M. candida, some of them being very attractive; the same lot also exhibits some pretty M. Clowesii major, and forms of M. spectabilis. Among the Oncidiums, one variety of O. tigrinum has noble flowers, and O. varicosum; Odontoglossum grande, O. bictonense superbum, and other Odontoglossums are in bloom. Out of a finely-grown batch of Dendrobium Dearei some are in flower, as well as D. formosum giganteum. In the warmest house, where some Phalænopsis and various Cypripediums are in flower, Dendrobium MacCarthia thrives admirably in an even warmer temperature suspended from the roof. It is not dried-off like many other Dendrobes, but has water in less quantity when it appears not to be actively growing.

Cypripedium Sedeni × var. candidulum.

C. Sedeni × is a hybrid raised by Mr. Seden between C. longifolium and C. Schlimii; the variety candidulum is the offspring of C. longifolium and C. Schlimii var. albiflorum. Its perianth segments are ivory-white, the petals, moreover, being tinged with rose, and the lip of a darker rose colour. It is one of the most ornamental of Orchids, and is well figured in the *Lindenia*, t. 245.

Dendrobium devonianum.

A Khasyan species discovered by Gibson. The segments are white, tipped with violet, while the rounded lip is white, with a central yellow blotch, and the edge finely toothed. *Lindenia*, t. 247.

Oncidium Krameri anum.

Nearly akin to O. Papilio, but having more angular

pseudobulbs; the sepals and lip finely serrate at the edge, and the wings of the column entire. It was discovered on the flanks of Chimborazo by Warscewicz. An excellent illustration is given in the *Lindenia*, t. 246.

Maxillaria longisepala.

A large-flowered species with long lanceolate acuminate purplish-brown pendulous segments, and a broad oblong acute lip pointed at the end, of a yellowish colour veined with purple. It was described recently in our columns, 1890, ii., p. 94, and is figured in *Lindenia*, t. 248.



Fig. 66.—clematis stanleyi: flowers purplish. (see p. 326.)

Lælia elegans Turneri and Others.

Cultivation has wrought wonders with certain species of Orchids. When we handled Lælia elegans some five-and-twenty years ago or more, we were contented with a flower-spike of from two to three flowers each. More particularly was this the case with Lælia elegans Turneri—a cognomen given to the species by Mr. B. S. Williams, when he saw that particular variety in flower in the collection of the late Mr. Turner, of Pendlebury, Manchester, cultivated and flowered by the late Mr. George Fox. It was some years afterwards, before that particular dark form appeared, but fortunately it is now in comparative quantity over European, and possibly American, collections. It is worth a day's journey to go and see the grandly cultivated plants in the collection of Thos. Statter, Esq., Stand Hall, now or recently in flower. As there are several types of them, let us describe them somewhat in detail. Lælia elegans Turneri var. *a*.—This is the giant of the group, in respect of having pseudobulbs over 2 feet long, with over twenty of them. There were three scapes flowering at the time of my visit, and three that would follow in a few weeks. Of the three fully-developed spikes, we found that they were represented in six, three, and four flowers. The individual flowers, we have been told on authority, never exceed 6 inches across. These exceed that considerably, and have segments of breadth in proportion to their size; these are of deep blackish-purple, without any tendency to shading out of colour. The lip is of intense velvety-purple, so much so, indeed, that no interfusion of colours in the palette could faithfully pourtray it. In addition, it is of great breadth. The lower portion makes a sweep from either side of the upper portion until it assumes a peltate form. Usually the lower lip is about on all fours with the upper portion. This feature adds immensely to the ornate importance of the flower. The upper portion, which forms a convolute piece of rooting for the column, is not so well thrown back at the extremities as some other forms. It is a superb variety, and attracts and holds the orchidist's eye, evoking almost inexpressible admiration.

Lælia elegans Turneri var. *b*.

This is an intermediary form, not so stout in development, but having pseudobulbs 20 inches long, and the plant two scapes each, seven and five-flowered. These individual flowers are larger than the normal form, and while the segments have the deep highly finished plum colour of the representative, the upper portion of the labellum is inclined to be white. Were it pure white and solid, it would be a gem of the first-water, but one rarely sees these extremes of colour solidified and in contrast. As it is, it is a magnificent variety, and if we did not see the *a* variety, it would be considered a gem of the first-water, as it really is, and compares well with its deep-coloured neighbour, Lælia elegans Turneri. It is a much smaller grower than the forms above described. The segments are narrower than either forms *a* or *b*; the lip is beautiful in form, and very dark. The throwing back of the "selvedge" of the upper portion of the lip shows the centre column to much advantage, and is indicative of what those catering after the conventional would aim at; notwithstanding there is a lesser form, it still is a most valuable form of the elegans type.

Lælia elegans blenheimensis.

The Blenheim form of elegans is simply magnificent. The grandly grown plant here has two flower-scapes, each five and four-flowered, and some twelve pseudobulbs, most of them bearing robust leaves. The sepaline and petaline segments are broader and larger in every way than in Turneri; the colour is of the most vivid description. The segments are of the richest shaded rosy-purple; the labellum is grandly illumined with a richer hue, the lower portion, as is the case in all the dark forms of elegans, being the most enriched. The form, too, is even less exceptional from a floricultural canon than Lælia elegans Turneri *a* variety; the recurved extremity of the convolute upper portion is picked out in extra brilliant bordering. In looking at these two in juxta-position, one is much at a loss to say "which is which."

Lælia elegans, Stand Hall Variety.

This is a novelty in the elegans way, differing from either of the above. It has concolored segments of a richer colour than the finest-hued Cattleya Skinneri in commerce. Blend that form with a brilliant Miltonia Morelliana atrorubens, and you have the tint, solid, not shaded, throughout; the labellum is richer, as might be expected, only it is wanting in form, in comparison with the A 1 varieties above described. It is as small a grower as the original Lælia elegans Turneri, and will not be so prolific in flowers in the scape as many of the others, but from a colour point of view, it stands unrivalled among the whole batch of L. elegans.

Lælia elegans Stelzneriana.

This is a form which we grew at Meadow Bank twenty-five years ago, and we have not come across it for about twenty years until the plant now to be noticed. It is a clean grower, not tall, but bearing good scapes from three to four flowered. The segments are white and so is the upper portion of the lip, the form good. The expanding portion of the lip is as nicely rounded as a flower can be, showing the orifice quite up to the base of the column. This

is an important feature from a connoisseur's point of view. The lower portion and the edges of the convoluted lobes are bright purplish-crimson. It is a noble variety, seemingly not very much known, as we do not find it in modern text books. It is of continental origin.

It is but right to say that not only these Lælias but the whole collection is in a capital state of cultivation, and some meed of praise is due to the culturist, Mr. Johnson, who apparently is giving undivided attention to the whole group, and it comprises many of the most valuable Orchids in commerce. *James Anderson.*

Lælia eyermaniana.

This rare and lovely Orchid lately appeared in a basket containing a plant of Lælia majalis at Clare Lawn, East Sheen, doubtless having been imported with the latter, which (if it be a fact) helps to bear out the statement that it is a natural hybrid between L. majalis and L. autumnalis. The pseudobulbs and the leaves are similar to those of L. majalis, but the flowers partake more of the features of those of L. autumnalis. This species was described by the late Professor Reichenbach, and figured in *Gard. Chron.*, p. 91, July 28, 1888; and it has been shown at meetings of the Royal Horticultural Society once or twice. The figure of the plant shows a leafy bract at the base of the pedicel. This peculiarity, however, is not considered by Mr. Rolfe to be a constant characteristic of the species. *W. H. Y.*

STONELEIGH ABBEY, WARWICKSHIRE.

[See Supplementary Sheet.]

This is the well-known seat of Lord Leigh, and is in close proximity to Warwick, Leamington, and historical Kenilworth, and but a few miles from Coventry. The park and grounds are very extensive, and include the deer park, rich in venerable Oaks and Beech, and other fine trees. A broad stretch of the river Avon runs through the park, and in front of the mansion, and close by are a Wellingtonia and an Oak, memorial trees planted by the Queen and the late Prince Consort in 1858.

Camden, the historian, says, "There stood, in olde tyme, a castle upon Avon, called Stoneley Holme, destroyed during the Danish warres under King Canutus." During the Saxon and Norman days, the manor was royal property, but it was alienated in 1154 by Henry II. That monarch founded there an abbey for Cistercian monks, until Henry VIII. routed them, and gave the estates to the Duke of Suffolk, and when his family ceased to exist, in the reign of Queen Elizabeth, they passed to Sir Thomas Leigh, one of the Lord Mayors of London, and an ancestor of the present Lord Leigh.

Stoneleigh Abbey is an extensive and imposing structure, and was erected by Edward, Lord Leigh, in 1720, and is now one of the finest of our old English noble mansions. A large portion of the rooms, including the picture-gallery, is open to the inspection of visitors; indeed, Lord Leigh is most generous in allowing ready inspection of all the objects of interest at Stoneleigh, and they are many indeed, and visitors to Shakespeare's country should not miss a visit to the place.

Our Supplementary Illustration gives a view of the flower-garden from a corner close to the Avon, and in the *Gardeners' Chronicle* of May 10 we gave a brief notice of the Gooseberry wall, and a few other objects of interest at Stoneleigh, including the celebrated "Moss-house," a spacious open-fronted summer-house, 40 feet in diameter, lofty, handsomely designed, and built with rustic wood and other materials.

In the direction leading to the Pheasantries and the mansion, the Ivy-covered arbour, or walk, is 200 feet long, 8 feet high, and 10 feet wide, and was planted in the year 1818. Another arbour, extending in a south-easterly direction from the summer-house to the river, is also 200 feet long, and of similar height and width as the other. In the pleasure-grounds are numerous flower-beds. Old-fashioned plants, and herbaceous plants, are preferred by Lord and Lady Leigh; and there are numerous beds of Roses. Pæonia Moutan (the Tree Pæony) flourishes here, several fine specimens having flowered freely during the past summer. A fine Hawthorn planted in 1818, a memorable year, shows age, and it was necessary, a few years ago, to place iron bands about the tree, to prevent its being split by storms.

In our short notice of Stoneleigh, already alluded to, the extensive and admirably cropped and kept kitchen garden was alluded to, and the extensive walls, and fine Pear and other trees. Close pruning is adopted by Mr. Biddard in the numerous bush-trees of Apples, Pears, and other fruits, some of which are now growing old indeed. Sir Joseph Paxton Strawberry is largely depended upon here for a general crop, and this good old variety is grown most extensively about the Stoneleigh and Kenilworth district, so famous for Strawberry culture.

Glass structures are numerous, and the general crop of forced and other fruits necessary for the supply of a very large establishment, is well seen to here, nothing being specially cultivated for exhibition. An enormous lot of cut flowers is required, and applications for these, and plants for decoration, at charitable and other gatherings in Leamington and district always meet with a ready and cheerful acquiescence from Lord Leigh, which gives Mr. Biddard plenty of extra work.

The other view represents the gardener's house, and the venerable gate-house of the old abbey, which now forms the principal carriage entrance to the mansion. This building was originally used as a chapel, and the small arched confessional which is seen close to the entrance to the gardener's house, is in a good state of preservation. Betwixt this building and the mansion is a good stretch of turf, with some fine specimen trees about it, notably some grand evergreen Oaks, one quite 70 feet through; a fine old Cork tree, fast decaying; a fine old deciduous Cypress, Cratægus, and other trees.

THE APIARY.

The reports from most parts of the country are now in, and a tolerably correct judgment of the honey harvest may be formed. As usual, Nature has not been equal in the distribution of her favours, and some localities have been much more favoured than others. In some parts of Kent, for instance, it was fine till the third week in June, and in those places very fair harvests have been secured. The weather in September, so far, has been simply perfect, and much has been gathered by the bees from Blackberries, &c. But no safety can be guaranteed, or even expected, unless the stocks are examined. Every stock ought to have about 25 lb. of sealed stores, and if they have that, they can be covered up warm and left till April with brighter hopes again for another year.

Extracting is, no doubt, about now coming to an end, and even the last cottager who has killed his bees is doing the final draining of his honey. Where to put it to take care of it exercises the minds of some. I have found nothing better for this purpose than the patent self-opening tins. The lids fit down so nicely, that I have never done any more sealing to exclude the air. Sealing can be done if thought necessary, but I have never done it. I send off honey by rail in them just as they are, with a label tied on them, and I have never yet had any complaints about the result. They are made in many sizes. It is a good thing to keep honey in a fairly warm room. Lately I have heard that the Americans boil their honey, and they thus always keep it in a liquid form. Whether that is good or not, it is open to some objections. Honey ought to fetch a good price this year, and the best advice is not to throw it wholesale upon the market, as that is sure to lessen the price. *Agnes.*

THE ORCHID HOUSES.

The Cattleyas.—The weather of the past week has been everything that could be desired for the ripening of the young growths. Shadings for this house may now be dispensed with, no harm being likely to accrue. Lælias of the Turneri and prasiata forms are the most lovely now flowering in this house, and they are strong growers. The autumn-flowering varieties of Cattleya Gaskelliana are among the most useful things now coming into flower. A white variety named C albens odorata (now in flower) is exceedingly chaste and beautiful, having pure white petals and sepals, while the lip is white, with the faintest tinge of rose, which rather adds to the beauty of the flower.

With such weather as we now have, it is almost impossible to give too much air to this house; during the day our own house has the roof ventilators wide open, as well as the sides of the house and the doors, and the plants, seeming to enjoy it, root vigorously. If an error is made, it will always be safer to make it on the side of too much air. Cattleya bicolor now flowering, if not to be classed as one of the handsomest of Cattleyas, is still a very useful plant for autumn flowering. The variety Measuresiana is perhaps the best, if the true variety is procurable. From the many letters I have received respecting the flowering of the white varieties of Lælia anceps, I shall be prepared to hear they are flowering in almost all collections this season. That they are not the shy flowerers that I, as well as others, thought, I am now convinced. The temperature at night may now be allowed to gradually decline, but it is not advisable as yet to go lower than 65°.

Intermediate-house.—This is now gay with Vanda cœrulea and Odontoglossum grande; these, with Cattleya marginata and Lælia præstans, are among the best of the cooler-house Orchids for flowering at this season. The whole of these plants enjoy a bountiful supply of fresh air, and should be placed somewhere near the ventilators; more especially is this the case with Vanda cœrulea, which, if left for any time in a close house, will be sure to develop spot on the leaves. The earliest flowering of the Pleione lagenaria and P. concolor are now opening their first flowers, and if previous directions have been followed, the flowers will be large and plentiful. The drying of these plants at the root before flowering I consider one of the grossest mistakes possible; this may be done after the plants have flowered and are repotted; they may then be allowed to stand in a cool-house without water for months, and will be benefited thereby if the temperature be now kept at 60° at night, or a degree or two less no harm will be done.

Where any considerable number of Miltonia vexillaria is grown, it is good practice to mix up a quantity of soft-soap and tobacco-water, dipping each plant thoroughly in it; the solution should not be washed off again at once, but left to dry; the syringe will entirely remove the stains in the course of a day or two. It is always best to choose a fine, sunny morning for this work, if possible. If plants are badly infested with thrips, the plants should be taken between the knees over the solution, and a camel's-hair pencil dipped in the liquid should be well worked down to the bottom of the leaves, no part of the old or new growth being left untouched. *A. G. Catt, Parkfield, Hallow.*

THE FLOWER GARDEN.

The glorious spell of fine weather recently experienced has been most beneficial to the flower garden, for its display is now as gay and brilliant as it has been at any time during the season. We are now approaching the time when we are liable at any moment to experience a frost, and preparations should be made for the housing of all tender plants intended to be saved. Bedding-plants, when taken up, should not have the young and sappy wood cut back, as that induces growth, which is not now required; in the case of Pelargoniums, the larger portion of the foliage should be stripped off, and the shoots retained in their entire length. As the different beds are cleared, they should be filled with either spring-bedding plants, small shrubs, or Coniferæ. Fit subjects are hardy Heaths, Euonymus, Aucubas, Cupressus, Retinosporas, &c., which have been grown plunged in pots. No efforts should be spared to complete any arrears of propagation as

early as possible. Steps should be taken to afford shelter in frames to all cuttings of bedding-plants as soon as the least change in the weather is noticed. Calceolaria and Violet cuttings should be put in, either in cold frames, or under hand-lights, in a light sandy soil, where they can be protected from severe weather, and where they can remain till spring.

Now is the time to decide finally the manner of planting the spring-bedding plants, so that all details are completed, and everything in readiness to replant any of the beds immediately on the removal of the summer bedding-plants. Amongst the varieties suitable for spring gardening, and most of which produce their flowers before it is time to fill up the beds with summer bedders, are the following:—Polyanthuses, Primroses, Myosotis, Silene pendula compacta, Daisies, Wallflowers, Arabis, Aubrietias, Violas, Alyssum saxabile, Hepaticas, Phlox verna, Anemones, &c. These may be augmented by a selection of flowering bulbs, which will greatly add to the charm and effect of the display.

Hollies, Aucubas, Rhododendrons, Laurels, and all kinds of Coniferæ, may be moved with safety now, and any alterations in the grounds or shrubberies may be carried out at this season of the year, if time will permit, with much greater facility than later on, or in the winter or spring. *D. C. Powell, Powderham Castle, Exeter.*

Fruits Under Glass.

Pines.—Thus far the present month has been one of the finest of the year, and Pines bid fair to mature satisfactorily. Late fruiters at one time seemed to be in a hopeless state, especially the Cayennes and Rothschilds, but the bright weather has removed our fears. The final re-arrangement of the fruiters and successions should now be done, and the fruiting plants separated from the non-fruiting, many of those that were started from suckers taken off last season's fruiters will have fruit again swelling; whilst plants not showing fruit will have completed their growth, and should have air afforded them rather freely for the next five or six weeks, whilst those swelling their fruit should be kept warmer and closer with more atmospheric humidity in moderation, admitting a little air in the early morning before the sun shines powerfully on the fruit. It must be remembered that an excessive moisture and a steamy close atmosphere tend to produce overgrown crowns, but the moderate use of moisture encourages the pips to swell properly. Ripening fruits should be kept dry at the root, and may be retarded, or if necessary be removed to a dry cool fruit room. Plants that are well rooted should have a bottom heat temperature of 80° to 85°, but recently-potted plants should be kept in a bottom heat of 90°, with an atmospheric warmth by night of 70°; and 80° or more with sun heat by day.

Queen Pines for early starting should be arranged in their winter quarters, but the bottom heat must not be allowed to fall too rapidly, or a check may cause deformed fruits to show; a gradual decline of bottom heat, from 85° in August to 75° in October, will be safe, but lower than this it should not fall, for practically a fine show of fruit next spring will depend entirely upon the healthiness of the roots that survived the winter. Discontinue overhead syringing in the pinery, but damp down with the syringe the walls, bloom-beds, and other dry surfaces, more or less, according to the amount of moisture in the outer air, and the quantity of fire-heat necessary to preserve the required warmth. Root-watering will be less required, but a good supply should be afforded the plants when it is necessary, and this should be before the roots at the outside of the ball begin to shrivel; and shrivelled roots, when watered, are apt to perish, causing inferior fruits to result.

Successions should be kept steadily moving, and plunged as near to the glass as possible. Some of the plants may not start quite so early, by steady warmth all the winter, but this is advantageous in most gardens, the fruits coming into use in good succession. A small quantity of water may be allowed to pass into the axils of the bottom leaves, to prevent the stem-roots suffering from drought, but water should not be constantly present in the axils. Plants thus treated will be readily started during next May and June, and will afford a good supply of fruit during the summer and early autumn. As the houses or pits are emptied of their contents, the glass and woodwork should be cleaned, and the walls whitewashed.

Suckers.—Those taken from the summer fruiters will be ready for repotting, and should be divided into two batches, the stronger to be shifted into their fruiting pots of 10 or 12-inch, according to kind, and the weaker to be wintered in 8 inch or 9-inch pots, to be transferred to larger pots in an early period of the spring; these may, if of Cayennes, be relied upon to produce a supply of fruit during the winter of 1891—92. Maintain a steady growing warmth at root and top, and keep a rather close temperature until the roots have taken hold of the new soil, more air being afterwards afforded. Watering and syringing should be gradually reduced to a minimum. Any stools with stout large suckers, brown at the base, should be divested of these, the base leaves pulled off, to liberate the enclosed roots, and be potted in 8-inch pots very firmly, employing a gritty holding soil, containing a sprinkling of crushed bones. Plunge them in a tan-bed of 80° to 85°, and grow them on as before advised.

Tomatos.—Plants in pots for winter fruiting should now have glass protection. Plants from cuttings are better than seedlings for winter, growing less grossly, and setting fruit more plentifully. As soon as the first flowers are open, set them by means of a camel-hair pencil. *W. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

After a careful survey of the fruit trees generally, I venture to predict that, in the spring of next year, there will be such a show of fruit blossom as there has not been for at least ten years past. I never saw a greater profusion of fruit-buds. Those trees that had constant attention to thinning and stopping, &c, during the wet and sunless period, have now, through the glorious weather of the past few weeks, rounded off their buds grandly. The buds of Apples, Pears, and Apricots, already seem getting matured, and the next three weeks will work wonders with all kinds of fruit, such as Peaches, Nectarines, Plums, &c.

All trees that have a disposition to produce lateral growth should be checked by persistently pinching out the points of the shoots, and keeping them closely tied or nailed on to the walls.

Figs.—Where these on open walls have been heavily mulched and well watered, the fruit now ripening will be very fine, and of excellent flavour. The past few weeks have so completely favoured the trees, that they are carrying heavy crops; in fact, nearly as many fruit as leaves, but the majority of them are too late to ripen this autumn, and much too forward to stand through the winter. They should now be taken off, as every point contains in embryo quite as many fruit as the trees in the coming season can carry to maturity.

All useless sprays should be removed to let in light and air, and to protect them from the wind and storms. The leading shoots should be kept closely to the walls, heat and air being the essential points for the ripening of the wood.

Raspberries.—It is a frequent occurrence to find rows and quarters of these which have been standing near upon half a century, and through the fertility of the soil, and owing to annual mulchings and top-dressings they have made fairly good canes, and produce fruit fairly well. But these, like the Strawberry, give much the best return when fresh ground is deeply trenched, heavily manured, and a few rows or even a small quarter planted annually. A corresponding breadth can then be destroyed, and the ground at once broken up, is available for vegetable cropping. If the ground is ready, perhaps the last week in this month is the best for planting. Having decided the distance (4 or 5 feet from row to row, if stakes are to be used), plant the canes triangular fashion; or if for training to wires, in single file every 2 feet is the best. Water the young canes, mulch with light manure, and tie up to prevent the wind from swaying them. If the ground is not ready, the plants or young canes should be lifted, and laid in by their heels until the spring. Fruit-bearing quarters must be kept clear of weeds.

Orchards.—If not already done, the newly-grafted trees should be examined, as the young scions swell rapidly about this time, and unless the ligatures are loosened and the strongest growths are secured to stakes, they are very liable to get blown out by the wind. As the planting season is now near approaching, everything should be got ready, and good healthy trees from the nursery should be secured, by selecting before the leaves fall. I may note that during the past few years the demand for standard Apples has been greater than the supply, but I question whether in many situations they are the most profitable, and I think persons who intend to plant should pause to inquire, whether better preparations for a greater number of dwarf trees to the acre will not be best in the long run; these remarks are applied to elevated and exposed places. How often do we find that a boisterous September thins the fruit to such an extent that many bushels are spoiled, whereas if extension-trained bush trees had been planted the loss would have been much reduced. The gathering of Apples and Pears will now claim daily attention; unfortunately they are not abundant, and the few we have should be secured as they become ready. *A. Evans, Haslemere.*

The Kitchen Garden.

Lettuce and Endive.—From now and till the end of the month, large breadths of some of the best of the hardy Lettuces should be put out to stand through the winter, a warm and well-raised border is the most suitable spot for this crop; and in case of any mishaps, it is advisable to plant an abundance in nursery beds at about 4 to 6 inches apart, in some cosy corner, where the protection can be readily afforded when the weather is severe. To keep up a constant supply for salad purposes during the winter months, the nearly full-grown heads should be carefully lifted with a good ball of earth, and planted somewhat closely together in frames, giving them abundance of air at all favourable times. See that the plants are thoroughly watered previous to lifting, and again after the planting, taking care that the larger plants do not get any water in the hearts. The lights for the present will be better left off both night and day. On bright days, when the leaves are perfectly dry, tie up both Lettuce and Endive when ready for blanching.

Cardoons.—These will require copious supplies of water and liquid manure at intervals, to assist a free, crisp growth. Tying up for blanching when ready should not be neglected, taking advantage of fine, dry weather, when the leaves are thoroughly dry. The hayband system is probably the best, first bringing all the leaves straight together, in an upright position, then binding them with strong, twisted haybands, after which earth up with fine soil, pressing it firmly about the plants.

Spinach.—The plants of the late sowings will now be ready for thinning, and if one plant be left to every 6 or 8 inches, the crop will be all the better, especially of the large-leaved kinds. In warm districts, a few rows more may be sown at once on a well-raised border, and from this sowing the leaves will be ready for use after the winter beds are exhausted. Well water the drills before sowing the seed. *H. Markham, Mereworth Castle, Maidstone.*

Fruit Register.

PEAR CITRON DES CARMES.

Mr. W. A. Cook, of Compton Bassett, says, at p. 216 of the present volume, that he agrees with all I said in a brief note (see p. 168) about this Pear, excepting that relating to its flavour, of which, as a matter of fact, I said nothing, although I meant to convey the impression, not only that the fruit should be eaten as soon as ripe, but that the flavour of fruits gathered from a tree growing against a south wall was good. Mr. Cook says:—"We have tried several different ways to get flavour, but have failed to do so;" adding, "it is simply like eating a 'pithy' Turnip." I presume he did not plant the trees in good well-drained soil at the foot of a south wall. Mr. Millar, of Rood Aston Park Gardens, Trowbridge (about midway between Compton Bassett and Salisbury), grows the Citron des Carmes Pear, and speaks very highly of its quality and productiveness, as also does Mr. George Bunyard in his descriptive catalogue of fruit trees. *H. W. Ward, Longford Castle, Salisbury.*

EDITORIAL NOTICES.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, SEPT. 23 — Royal Horticultural Society: Dahlia Conference and Exhibition at Chiswick.

WEDNESDAY, SEPT. 24 — Royal Horticultural Society: Grape Conference and Exhibition at Chiswick.

SALES.

MONDAY, SEPT. 22 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

WEDNESDAY, SEPT. 24 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Stove and Greenhouse Plants, at the Moat Nursery, East Grinstead, by Protheroe & Morris.

THURSDAY, SEPT. 25 — Established Orchids in Flower and Bud, and Importation of Cologyne pandurata, &c., at Stevens' Rooms. Conservatory and Decorative Plants, at Mr. Howard's Nursery, Southgate, by Mr. Stevens. Stove and Greenhouse Plants, at Highcroft, Husbands Bosworth, by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, SEPT. 26 — Imported Orchids, at Protheroe & Morris Rooms.

SATURDAY, SEPT. 27 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—56°.1.

Winter and Spring Decorative Gardening.

ALTHOUGH some seven months have passed since Mr. WILKS read his admirable and bright paper on winter gardening at the James Street Drill Hall, yet has it but lately been published in the *Journal of the Royal Horticultural Society;* still, it comes into public notice at by no means an inopportune moment, because the season is drawing near for the lifting and transplanting of shrubs and Coniferæ, as advised in Mr. WILKS' paper, whether the plants be utilised in pots, as is done so largely in the Shirley vicarage garden, or whether planted up in beds or borders, either permanently or temporarily, for the winter only. Those who may desire to embark in any form of winter and spring decorative gardening, will find the recent issue of the Royal Horticultural Society's *Journal* specially valuable for reference, because it also contains a most instructive paper likewise read at the Drill Hall in April last by that master of the art, Mr. W. INGRAM, of Belvoir. There is, however, this marked distinction in the two methods advocated in the respective papers, that, whilst Mr. WILKS utilises shrubs, &c., tentatively in his garden, Mr. INGRAM at Belvoir plants all his material for permanent effect, so that the gardens at Belvoir are ever developing new beauties, and extending the area of spring flower gardening, because permanently planted masses must of necessity extend their areas in time. Ordinarily, spring flower-gardening consists in the putting out in the autumn of myriads of hardy plants which bloom early, into masses or beds, bulbs being also associated with them; then so soon as the blooming period is past, or the requirements of the summer season and its tender decorative material press, out go the hardy plants and bulbs to a reserve garden or to death, and the work of decoration has to be all done over again. In his winter-gardening paper, Mr. WILKS mentions that his hardy pot shrubs simply serve to fill the places occupied in the summer by tender plants; in fact, where a Dahlia or Pelargonium is taken out in the autumn, a pot shrub is dropped in, and thus very effectively occupies its place. The charm of this method is, that the decoration of the flower garden can be so readily varied without entailing on the gardener any considerable amount of labour. To furnish the needful supply of shrubs and Conifers—the best kinds of which for the purpose are fully detailed in the *Journal*—the time will soon be here for lifting and potting; indeed, there can hardly be a better time than the present for the selection of plants. A few pounds will go a long way in purchasing both hardy shrubs and pots, and once a suitable stock is obtained, no great difficulty is found in the keeping of it from year to year, making needful additions as occasion offers, or necessity demands.

Shrubs may not be strikingly effective as flowers are, but they are far preferable to empty or bald spaces, and really, when a good selection is made and efficiently utilised, very pleasing effects are produced, even if not striking. We cannot expect to have very much beauty in our gardens in winter, but still there is a certain charm about shrubs and Coniferæ in winter, as Mr. WILKS bears witness to, as may be seen in any hardy shrub nursery, and as was evidenced in a most effectual manner at Heckfield in the late Mr. WILDSMITH's day.

Those who would strive to make their gardens little Belvoirs, would do well to study Mr. INGRAM's paper closely, and if that could be supplemented by a visit to Belvoir, or, failing that, any place where spring flower gardening is well done—alas! far too few—they will have an excellent start. Hardy spring-blooming plants are not so very costly, and thousands may be purchased for comparatively moderate sums. The time for planting out Daisies, Violas, Pansies, Primroses, Aubrietias, Candytufts, Alyssum, Saxifrages, Hellebores, Forget-me-nots, Doronicums, Polyanthuses, Dielytras, &c., with myriads of early-flowering bulbs, is not far off, and the earlier start gives the better results. The present season has not been eminently favourable to the production of bloom on tender plants in beds or masses, whilst leafage has dominated. Why then weary over the maintenance, till the latest moment, of things so unproductive of beauty. The very weather—cool, showery, and ungenial for summer—which has proved so undesirable for the summer tender plants, has been of great service to the hardy plants of all descriptions, whether perennial or shrubby, and, therefore, strong material of all hardy kinds should be abundant. Early planting will have the merit of checking too luxuriant growth, and rendering it less liable to injury from hard weather, whilst it will enable the plants to become rooted early, and thus give in the ensuing spring finer effects. Of course, it by no means follows that in the use of shrubs or Conifers the winter gardener is restricted to the method which Mr. WILKS so strongly advocates. The hon. secretary to the Royal Horticultural Society favours a system specially adapted to his own requirements, which are limited. In many gardens where winter decorative gardening, with the aid of shrubs, might be adopted freely, there is ample nursery area where the needful material, bought in from the nursery whilst small, can be planted and grown on from year to year, and to which the best of the utilised plants may be returned each spring, when the ground is needed for tender flowers. The labour of potting and preservation in pots during hot dry summers is thus avoided. Still, there is much to be said in favour of Mr. WILKS' plan, especially in the case of small gardens, which can be, either with shrubs alone or with the aid of hardy flowering plants and bulbs, also made to look, if not gay all the time, at least exceedingly attractive from the beginning of November until the end of April, the deadest months of the year. Winter, spring, and summer gardening, if successional, gives much variety in gardens, and helps to render them to the possessor trebly attractive. Those who are not Fellows of the Royal Horticultural Society may well regret that they are not, as Fellows are privileged to peruse the admirable papers to which we have referred.

The Grape Conference.

AMONGST the many Conferences that have of late years been held, on almost every conceivable subject, there is none that ought to prove of more genuine interest to the gardening fraternity than this. The Grape is the prince of exotic fruits, and exacts and receives more homage and attention from the British gardener than all the other fruits put together. In no other country is the Grape grown to such perfection. It is thus a fit subject for a Conference, and we hope that both amateurs and gardeners will come forward in great force, not only as exhibitors, but to assist at the Conference at the Royal Horticultural Society's Garden at Chiswick, on September 24, and, by an interchange of ideas, to benefit each other. The various papers that are to be read open up wide fields for discussion, and they are in the hands of men who are masters of the subjects they introduce. Mr. RIVERS is to treat of Frontignan Grapes—that best of all, but most neglected class. How we wish Mr. RIVERS might be able to stem the fashion for mere size, and bring back to favour true quality. Mr. R. D. BLACKMORE is to tell us all about the enemies of the Grape Vine, and how best to become their master. Mr. THOMSON is to speak on soils suitable for the Vine to grow in—and no one knows better—no one has had more experience. We almost think it would be an easier task to tell of the soils they will not grow in, amidst the almost fabulous increase in the supply of Grapes during the last thirty years. The old Vine border has become a thing of the past.

Next to growing Grapes is the knowledge of how to pack them, and here Mr. COLEMAN will tell us of his successful practice. It is amazing the quantity of good fruit that is totally spoilt by careless and bad packing.

Of the exhibition we cannot yet speak, as we know not what may be forthcoming; but believe it will be fairly representative. Classes are provided for every section, and no better opportunity has ever existed for the comparison of the merits of different varieties, so that we hope the chance will not be lost. A novel feature—one that we do not remember having seen introduced previously—is that of "Examples of packing Grapes for private use, which have to be sent by post or





VIEWS IN THE GARDEN, STONELEIGH ABBEY.

rail," and delivered to the Gardens. This is of great importance, and should be well contested, a Silver Cup being the award.

The Dahlia Conference.—We believe that the exhibition of Dahlias to be held at Chiswick on September 23 promises to be a large and attractive one, most of the leading growers and exhibitors having intimated their intention to take part in it.

The British Fruit Growers' Association: A Visit to Crawley.—The third of the Conferences arranged to be held by the above Association during the present year was announced to take place at Brighton on Thursday, September 11, and after the Crystal Palace meeting it was suggested, that as a party would on that day be travelling down from London, an excellent opportunity would be afforded for a visit to the Crawley district under the guidance of the Local Secretary for Sussex, Mr. Joseph Cheal. The idea met with approval, and, as a result, a party of the earlier rising members of the Association reached Horley at 8.30 A.M. on Thursday morning, where Mr. Cheal had the necessary conveyances in readiness. A hurried inspection of the extensive and well-stocked nurseries was commenced, and much valuable information was conveyed by the conductors respecting the peculiarities or qualities of certain varieties of fruits, stocks, modes of training, &c. Apple budding was just in full progress, and a few of the members left mementos of their varying degrees of skill in this important operation by commencing a row, preparing the buds and stocks, tying and completing the work. In another portion of the nursery, a member who farms much land in Essex, proved that he was master of the details of his work, by guiding a plough with all the skill of an experienced hand. Several other practical demonstrations followed. The plantations and "quarters" of healthy young fruit trees in all stages were inspected with the keenest interest, particularly the cordon trees, of which so many are grown at Crawley. Dahlias of all sections and many other outdoor plants were still gay with flowers, notwithstanding the recent frosts, which, in some districts, have caused much devastation. Another pleasant drive to Three Bridges, and a rapid run to Brighton, prepared the party for the more serious portion of the day's business. As previously announced, the Conference was held in the King's apartments of the Royal Pavilion, in conjunction with the excellent show of plants, flowers, and fruit provided by the Sussex Horticultural Society, under the management of Mr. Edward Carpenter. The Mayor of Brighton, Mr. Alderman George Manwaring, had kindly consented to take the chair, and he was supported by Mr. T. Francis Rivers (Chairman of Committee); amongst others present being Mr. Philip Crowley, Mr. Lewis Castle (Hon. Sec.), Mr. J. Roberts (late of Gunnersbury), Mr. G. Gordon, Mr. J. Cheal, Mr. A. Cheal, Mr. R. Smith, Mr. W. G. Head, Mr. G. Hammond, Mr. Stephen Ade, Mr. R. Turner, and Mr. T. W. Beach. There was also a good attendance of fruit growers and others in the district especially interested in the matter. The Mayor opened the proceedings at 4 P.M. with a brief but pithy speech, in which he referred to the objects of the Association, and dwelt especially upon the importance of facilitating the distribution of fruit to consumers. Mr. T. Francis Rivers and Mr. Cheal spoke of the prospects of fruit growing, and various papers were read, and others were, from want of time, taken as read. On the following day several of the party visited the Grape and Tomato growing establishments at Worthing, and the famous Fig orchard of Tarring.

Ghent Horticultural Meeting.—The following Certificates of Merit were awarded at the recent meeting for plants interesting for their novelty:—1st, (unanimously) to five hybrids of Anthurium Rothschildianum, two of which were especially calculated to attract the attention of amateurs to these fine plants; the spathe is very large, well proportioned and widely opened, the base is white, speckled with tiny dots and many distinct little lines, the whole of a vivid scarlet colour. These magnicent seedlings were from M. Ch. Bleykens, of Meirelbeke, Ghent. 2nd. To Araucaria excelsa Vervaeti, in the way of A. Napoléon Baumann, but with longer leaves, an exceedingly sturdy and characteristic variety shown by M. Baumann and MM. Vervaet et Cie. 3rd. To Cattleya Gaskelliana delicata, of a splendid and very delicate pinkish-white colour, the lip golden and purple, with a little central stripe of purple, which reaches to the margin of the lip. This charming variety was shown by MM. Vervaet & Cie. 4th. To Aërides Sanderianum, from M. Van Imshoot; a most beautiful novelty. 5th. To Aërides Ballantineanum, from the same exhibitor; a novelty, with flowers of a peculiar shade of pink. This is probably the first time that this species has flowered on the Continent. A Certificate for good cultivation was awarded to the Selaginella Emiliana, from M. H. Schmitz, of Ghent; to Sarracenia purpurea, grown in the open air by MM. de Smet Frères; a Certificate for well-flowered, cut blooms, of a Tuberous Begonia, from M. Rosseel, of Ghent. This was a new variety, with two petals white, and two more or less streaked with red, giving rise to a number of variations, all very pretty. Honourable Mentions:—1st. To splendid cut blooms of Gloxinia, shown by M. Ed. Pynaert Van Geert, most of them much spotted, and of the richest colours, and most delicate shades. 2nd. To Nepenthes Dominiana×, in flower, from M. Ad. D'Haene. 3rd. To Myopyrum parviflorum; very well flowered, and sent by Van Driessche-Leys. 4th. To Epidendrum prismatocarpum, from M. Van Imshoot. 5th. To a Begonia with silvery leaves, from M. Van Imshoot. 6th. To Streptocarpus spectabilis, from the same exhibitor.

Sandringham.—Mr. Penny, who has been in charge of these gardens for some years past, is now retiring from that position on a pension, and we believe his place is to be filled by Mr. A. McKellar, at present gardener to the Duke of Roxburgh, Floors Castle, Kelso, N.B.

Pebble Gardening.—A correspondent obligingly sends us a photograph showing what he calls a new style of ornamental gardening. "It is as nearly as possible in the style of carpet-bedding worked by minerals in six distinct colours, and broken up small to the substance of rather small gravel; the materials are dark blue glass, light blue glass, gravel, . . ." but we think we have said enough. Since Mr. Nesfield adopted the method at the gardens at South Kensington, we have seen nothing of these garden-mosaics. They were destroyed some years ago, to the general satisfaction at South Kensington; whether any still remain at Witley Court or Eaton Hall we do not know. It is of course a matter of taste, but as garden decorations they are, in our opinion, wholly out of place—many degrees worse than carpet-beds. In a prison-yard, or even in a barrack-square, they might, perhaps, afford some variety; but as garden decorations . . . . ! The photograph sent us shows that the design has been very well worked out, and the colours harmoniously blended, but it is not gardening.

A Rating Case.—At the Kingston County Petty Sessions, lately, Mr. Edward Tudgey, of Home Farm, Ryden's Road, Walton-on-Thames, was summoned, at the instance of the Walton overseers, for not paying a portion of the poor-rate (with which was the highway-rate), to wit, £2 6s. Mr. Percy Webb appeared for the overseers, and his statements were to the effect that Mr. Tudgey was fighting the case as a test case. The question was, whether the defendant was compelled to pay full rateable value, or only one-fourth value, by virtue of the sub-section 1 (b) of section 2111 of the Public Health Act, 1875, which provides, *inter alia*, that market gardens or nursery grounds should be assessed in respect of one-fourth only. Mr. Webb submitted that the defendant was not entitled to exemption, as the rate had no connection with the Public Health Act. Walton was a rural district, and the rates were made by the Kingston Highway Board. He, however, considered the case rather hard on Mr. Tudgey, for if Walton were a Local Board district, he would be entitled to exemption. Mr. Tudgey gave his views in favour of his claim for exemption, and quoted a judgment of Mr. Justice Day in a case "Purser *v.* Worthing Local Board," heard in 1887. The rate amounted to 1*s.* 8*d.* in the pound per annum, whereas he considered he was only bound to pay 5*d.* The Bench upheld the full rate, but stated that, to show their view of the hardness of the case, they would not give costs. Mr. Tudgey's case is a hard one, and it remains to be seen if the judgment is correct. It seems to be a case for the Trade Association to take up.

Death of Dr. H. van Hall.—We regret to hear of the sudden death of this gentleman at Apeldoorn on the 11th inst. Dr. van Hall was the Editor of the *Neederlandsche Tuinboublad*, the Dutch *Gardeners' Chronicle*, and was well-known and much respected by those who attended the Exhibitions and Conferences in Holland and Belgium.

The Hardy White Passion-flower.—Messrs. Fuller, Courtenay Nursery, Newton Abbot, write to protest against a doubt raised by a correspondent as to the correctness of the statement that the plant in question originated in their nursery as a seedling from P. cœrulea. Although the plant was first described in these columns, we were, of course, dependent upon others for a correct statement as to its history. Messrs. Fuller say they raised the plant, and there is, so far as we know, no reason whatever to doubt their accuracy; but, if it be a seedling, other people may have raised it before, and others may raise it again.

Potato Disease.—It is a recognised fact, that high moulding will save a large percentage of Potatos even when the conditions seem very unpropitious. Sulphate of copper also has great power in checking the disease. Prillieux, in his experiments, obtained 115 sound Potatos by the use of a six-per-cent. solution of sulphate of copper, while from an equal area side by side, but where the copper solution was not used, only fifty-three tubers were produced, 32 per cent. of which were diseased. In 1888, M. A. Girard conducted two sets of experiments on different farms, using a mixture in water of 2 kilogrammes of sulphate of copper and one of quick-lime per hectolitre. A single application, as a curative treatment, largely reduced the disease, while as a preventive treatment it was a complete success. The solution was applied through an ordinary sprinkler. The increase in healthy tubers on each farm, by the use of the copper sulphate, was:—

A.	B.
14·3 per cent.	..... per cent.
22·9 ,,	2·7 ,,
13·5 ,,	20·2 ,,
17·2 ,,	4·1 ,,

From all the figures presented it is concluded—1st. That the application as a curative treatment does not ensure absolute immunity. 2nd. However, in these cases, treatment diminished in a notable degree the number of diseased tubers, and at the same time increased the weights of the healthy tubers in a very different proportion according to the variety used. 3rd. That the varieties treated, in respect to their receptivity of the disease, differ widely. A 2 to 3 per cent. copper sulphate solution is recommended. It is mortifying to see no steps taken to combat the disease, while no means is neglected to ensure the propagation of the disease. The apathy is from no lack in the supply of information.

A New Egyptian Cotton Plant.—Reporting on the trade and commerce of Alexandria during the year 1889, Mr. Vice-Consul Alban refers to the increased cultivation of a new variety of Cotton plant known as Mitafifé, as the chief feature of the

year. This plant, he says, was discovered a few seasons ago at Benha, and this is the first occasion on which it has been planted on a large scale. Although its produce is not quite so good in quality as that of the Ashmouni plant, and is of shorter staple, it produces a much larger proportion of Cotton to seed than any other variety, at the same time it has the advantage of being earlier and less susceptible to atmospheric influences. The result of last year's experiment was so encouraging, that this year a still greater area has been planted with the Mitafifé Cotton. In the provinces of Sharkich, Galionbich, and Menonfich it has been almost exclusively sown, and throughout Lower Egypt, except in the province of Dakhalich, where, probably owing to climatic conditions, it did not succeed last year, it has, to a great extent, taken the place of the Ashmouni and Bamia varieties, and has almost entirely supplanted the Gallini plant. No fears are entertained respecting the coming crop; the area planted with Cotton is about the same as last year, the seed germinated under favourable conditions, and the same precautions as last year have been taken to ensure a regular distribution of water should there be a low Nile.

"KEW BULLETIN."—The September number contains an article on the injury done to barrel-staves by a small beetle, Trypodendron signatum, whose life-history is worked out by Mr. W. T. BLANDFORD. The beetle attacks newly-felled Oak timber, so that it is probable the injury to the staves was done prior to the despatch of the casks to India. A second article is devoted to the Opuntia or Prickly Pear, which spreads so rapidly in certain districts of the Cape, as to have become a nuisance of sufficient magnitude to necessitate the interference of the Colonial authorities. A plant like this with so much fibre, and other ingredients, might surely be turned to good account in some way, but till this is done, there is nothing certain but to destroy the plant, by no means an easy task. Jarrah timber (Eucalyptus marginata), is the next subject treated of, especially in its application to wood-paving for streets. A portion of the Strand and a small space in Wellington Street, adjacent to our office, where the traffic is exceptionally heavy, have been paved with this wood, and apparently with good results. Vine mildew and the Bordeaux mixture form the subjects of a communication on a matter often brought under the notice of our readers. Lastly, the Rev. A. BARON contributes a useful article on the economic plants of Madagascar.

GROWTH OF BAMBOO.—It is recorded that the shoots of a Bamboo in the Peradenya Botanic Garden, Ceylon, grew at the rate of 13 inches in twenty-four hours in April.

THE RED WOOD—THE WOODPECKERS, THE SQUIRRELS, AND THE ACORN.—A man who had sawed out an immense block [of Red Wood] for the purpose of splitting out shingles, was astonished to find, almost in its centre, a round hole which had evidently been years ago hollowed out by the beak of some bird, and afterwards grown over by the wood. In this hole, on examination, were found twenty acorns, in a perfect state of preservation. The rings counted in the block, outside this crevice, showed that these acorns had been thus enclosed in the heart of the tree for 120 years! The block and acorns were purchased by one of the party, and then brought to San Francisco. *Gardeners' Chronicle* and *Agricultural Gazette*, October 13, 1866, p. 971 and p. 1042. The explanation of a quantity of acorns having been found in the stem of a Red Wood tree enveloped by 120 layers of annual growth is, that there is a woodpecker in California (Melanerpes formicivorus of ornithologists), the carpenters of the settlers, which has the habit of piercing the bark of Oaks and Pines with holes, in which he inserts acorns, thus storing them up for future use. The holes are nicely adjusted to the size of the acorn, which, when driven in by the energetic blows of the carpenter, can with difficulty be extracted. Dr. NEWBERRY says, that the bark of the Pinus ponderosa, or Western Yellow Pine, is particularly thick and cork-like, and is divided into plates of from 4 to 8 inches in breadth, with smooth surfaces. Into these plates he tell us that the carpenter sometimes inserts acorns in such numbers, that the trunk appears thickly studded with wooden pegs. . . . The squirrels find these stores of acorns extremely convenient, and they become the occasion of unending battles between the carpenter and themselves. Mr. SIMSON, a Californian settler, gives the following account of one of these amusing scenes. He states that he had seen the birds "bore the holes, put in the acorns, hammer them well in, and take them out again in spring. (*Proc. Roy. Phys. Soc.* 1854, p. 1.) On one occasion, in the time of a great flood, his party were encamped on a kind of island that had escaped the inundation, and having nothing better to do, watched the operations of these birds. "There were six or eight of them at work on a tree in which there was a squirrel, who had made his house in a hollow at the root of a branch. The squirrel would pop out his head and look at them, and the moment the coast was clear he would run out and tear and scratch away at the bark to get at the acorns which had been pegged in, and when the birds saw him they would all attack him, and he would run like lightning down the tree, and up the other side, and into his hole again, and then peep out and watch another chance to do the same, evidently having great fun. This continued for about three days, until at last one of the party knocked the squirrel's head off with a rifle ball, and rid the woodpeckers of their persecutor." Whether the woodpecker finds a sound acorn, or a grub in the shell in spring, probably does not much matter, so far as the question of food is concerned, as the Melanerpes genus of woodpecker feeds both on fruit and insects, but it would certainly be a more complicated case of instinct if it stored the acorns up to produce an insect afterwards, than if it did so merely to procure an acorn. But the Mount Diablo *trouvaille* is chiefly striking from the testimony it bears to the long continuance of the routine of Nature. A hundred and twenty-seven years ago, possibly thousands of years ago, the Californian woodpeckers were hammering acorns into the bark of the Red Wood, as they do now, and but for man and his encroachments might continue to do so for thousands of years to come. Now that man has entered on the scene, it is doubtful whether any Melanerpes formicivorus will remain to hammer in acorns by the end of another 127 years, or any Red Wood trees remain in which to peg them.

WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—The monthly meeting of this Society was held on the 9th inst., the Rev. A. E. LOFTS presiding, and the attendance was very satisfactory. A paper on Strawberries was read by Mr. H. BROWN, who treated his subject in a very lucid manner. A discussion followed, and Mr. BROWN was accorded a hearty vote of thanks for his paper.

AGATHIS (DAMMARA) AUSTRALIS.—The noble New Zealand Kauri Pine is producing its globular cones in the Royal Botanic Gardens, Edinburgh. An account of this tree, together with an illustration from the pencil of Mrs. DYER, was given in our columns recently.

A GREEN-FLOWERED CHRYSANTHEMUM.—The *Moniteur d'Horticulture*, in its last number, gives a coloured illustration of a flower in which the corollas are green. As a curiosity, it ranks with green Dahlias, green Roses, and numerous other plants in which the outer parts of the flower, at least, assume the functions of leaves.

CLIMATE OF ZANZIBAR.—A communication from Sir JOHN KIRK to the *Kew Bulletin*, shows that the highest temperature of Zanzibar occurs in February, when the maximum attains to 88°.3, the lowest temperature is in July, when the thermometer falls to 72°, so that there is only a difference of 16°.3 throughout the year, less than often occurs in a single day in this country.

HOME CORRESPONDENCE.

THE LATE JAMES BACKHOUSE.—In reading in your paper of the death of Mr. James Backhouse, of York, my mind was carried back a long period of time. It may be interesting to some to know that Mr. Thomas Backhouse started a nursery in Darlington (before he went to York), of 7 acres, rented of the late Jonathan Backhouse, banker, and Mr. Backhouse employed two men all the autumn putting in cuttings. From the time Mr. Backhouse gave it up, my late grandfather, John Brown, took it and rented it until the late Mr. Joseph Pease added it to Southend Park. The entrance to the nursery was through an arch made of a pair of extra-large jaw bones of a whale, which I have now in my nursery. *E. B. Spencer.*

HORSE CHESTNUTS IN FLOWER.—When in Paris last week, I found that many of the Horse Chestnut trees on the sunny side of the Boulevards were in flower, and had young leaves on parts of the trees, the remainder of the tree being bare of leaf. I learnt that the first growth was destroyed by the frost, and it is now feared that if this growth is similarly attacked while the sap is in the stem and branches, the trees will be killed. *Thos. Christy.*

THE FRUIT CROPS.—There are some anomalies as regards the fruit crop here this year that appear to be worthy of notice:—1. The crop of Apples (a more or less complete failure in most places, I understand) is here a remarkably good one, whether on standards, pyramids, espaliers, or cordons, and many sorts ought to have been heavily thinned. I may especially mention Ribston and Sturmer Pippins, Cox's Orange, King of the Pippins, Devonshire Quarrenden, Blenheim Orange, Cellini, and Court of Wick, though many other kinds have also borne well. This is surprising, considering how wet the end of July and first three weeks of August, 1889, were, as one would not have expected the wood to have ripened. I can only account for it by the magnificent weather we had from August 26 to Sept. 18 of that year, which was in time to ripen the wood of the Apples, but not of the Pears. These are a poor crop of all kinds, which confirms the theory I have put forward in your columns formerly that it requires a fine July and early August in one year to lay the foundation of a crop of Pears for the following year. If one dare prophecy anything respecting fruit, it would be that there is a very small chance of a decent crop of Pears next year. 2. Still more singular is the fact that, in spite of the mean maximum temperature of July having been the lowest but one (1888), and that of August absolutely the lowest since and including 1880, Apples, Pears, Blackberries, and Mountain Ash berries have ripened very much earlier than usual. Has this been observed elsewhere? And how are we to account for it? *Alfred O. Walker, Colwyn Bay.*

FROGS.—I should be very glad to be informed if it is a recognised fact that frogs in a garden are devourers of Peas, and if their presence in a garden is generally a disadvantage or otherwise. There are many in my place here, but they have been tolerated in the belief that they were enemies to the insects, but my gardener has found several frogs during the last month upon the dwarf Peas, and on examination underneath the rows, a quantity of empty pods was found, showing that a large number of Peas had been consumed, and as my gardener—a somewhat elderly man—says it is a new experience to him, I thought I would inquire what was the experience of others in regard to the matter. We shall certainly not look with the same friendly eye upon these animals in future, and we have already begun a war of extermination. Still, we do not want to incur the

reproach of having acted with more zeal than discretion. *W. H. S.*

THE TOMATO AND ITS CULTIVATION.—The Tomato is a heat loving plant, and a hot and dry climate is necessary to bring it to a high state of perfection, without which its peculiar high sprightly flavour is not developed; also the colour in a well-matured fruit should be a blackish-red. Where I saw it doing best was in a rich sandy soil, under a burning sun; temperature 90° Fahrenheit, in the shade, not for a week or two, but for weeks together, and I have noted no rain for six or seven weeks. [Where?] I have grown the Tomato for thirty years in different parts of England; the kinds I am now growing are Nisbett's Victoria and Sutton's Perfection. This year I have had a good crop in a Pine-stove, and the fruits are of fair quality, but the fruit is puny, and in the open ground it is a perfect failure; but a man who courts failure should say little about it. In countries where the Tomato tumbles about on the ground with no kind of training, in the same way as Melons and Cucumbers, it is a great article of food, and is eaten three times a day. *H. P., Fareham.*

MELONS.—I maintain that the primary cause of Melons cracking is the antagonism of two extremes, that is a superabundance of moisture at the roots, and an abnormally high temperature at the same time. If Melons are watered, say, three hours before closing the house, and allowed a little extra foliage at that period of growth when Melons are susceptible of cracking, I venture to assert that there is little likelihood of any trouble arising from cracking. We all know the difficulty of contending with Red-spider when once it is on plants in a frame. Cow-dung that has been exposed long enough to admit of its being broken into medium-size pieces, and placed among the foliage about once a week when the fruit is set, I find answers very well. The odour, I believe, keeps the spider away. *G. B. C.*

ASTERS.—It is satisfactory to find that, in spite of a bad season, during which Asters generally have borne a wretched look, they are now flowering fairly well, and in some cases exceedingly well. The season, so far, has been found more favourable to the smaller-flowered sections than for the large-flowered Victorias and incurveds. Quilled Asters are doing fairly well, but there seems to have been rather too much rain, as the blooms are not so large as in drier seasons. The quality, however, remains the same as before. Quilled Asters sport so little that 99 per cent. may be relied upon to come true, if not fully 100 per cent.; and this constancy, too, even when grown and bloomed side by side. The inference, therefore, is that insects are unable to cross-fertilise Asters, and the air fails to do so also. Probably in the majority of cases rogues result rather from stray seeds getting into other stocks, than from any other cause. The Mignon Asters merit the highest place amongst varieties suited for furnishing cut flowers. The plants bloom profusely, are in height from 12 to 14 inches, and carry flowers of medium size, reflexed, and of the most perfect form and doubleness. The pure white, a perfect beauty for cutting from, is a trifle the tallest. The carmine is a lovely variety, and the mauve not less so. I have these three colours only this season. I hope to have more next year, for a more beautiful form of Aster does not exist. The pink-striped Comet is pretty, but tall, whilst the dark rosy-red Ruby, 12 inches, and the deeper coloured Fireball, are most effective, and show, after three years' growth, that they come perfect from home-saved seed. The pyramidal Asters are disappointing. A pleasing rosy-pink break from the Striped Comet is much prettier than the mauve form. *A. D.*

THE BORDER AND FLORISTS' CARNATIONS.—I have just seen Mr. James Douglas' letter in a recent impression, commenting on the remarks I ventured to make at the Carnation Conference at Chiswick in July. I am glad to find myself at issue with Mr. Douglas, for with his knowledge and my ignorance as factors in the case, it is a hundred to one that he proves to be right and I wrong, and I sincerely hope that such is the case. I gave, however, the result of my individual experience, which I found strongly confirmed by that of others. I must ask Mr. Douglas to give me credit for having grown my plants under the most favourable conditions that it was in my power to give them from strongly rooted layers—in fresh soil annually prepared for them, and with plenty of light and air. The result has been that for two years past I have had a long border of Carnations, which I think the most critical could not fail to admire; but the plants which have thriven are layers of seedlings of my own, and of plants raised from seed given to me by a well-known grower in Scotland. In the same border, put out at the same date, under identical conditions of soil and climate, are many bought plants, and I assert that I could stand at 50 yards from the border and select the purchased plants by their size and the colour of their grass; and yet others of these purchased plants have done capitally under glass. I am ready to admit that I was probably wrong in using the words "hardy" and "tender," for these expressions I conceive rather apply to the power or otherwise which plants possess of resisting cold. In this sense, I allow that Carnations as a class are "hardy;" I should have confined my strictures to their "constitutions." Am I not right when I say, that universal experience rather confirms the truth of my remarks, by the fact that, out of the thousands of named varieties which have been raised within the memory of most of us, but few remain in modern catalogues, and that it is practically acknowledged that if you want to keep up to modern requirements, you must continually raise fresh varieties from seed? Of course, no plants are everlasting, but I think that modern Carnations have a distinctly consumptive taint in their constitution. I do not venture, however, to set up my opinion against that of Mr. Douglas. I only give my personal experience, which may be the result of causes within my own control. Anyhow, I hope and believe that the fresh encouragement which it is proposed to give to the raising of "border Carnations" cannot fail to be productive of good results. *Martin R. Smith, Hayes Common, Beckenham, Kent.*

VERATRUM NIGRUM.—This somewhat quaint-looking herbaceous plant is just now in perfection here, growing in a nook in the rockery, where there is a good depth of stiff soil, in which the roots delight to run. Without the flower-spikes, it is a handsome plant, with broad leaves, and when it is established it sends up strong spikes of flowers every year, which last fresh for a very long time when cut. Its uncommon colour—very dark purple—draws one's attention to the plant. It is not a plant that is generally known by gardeners, and very few who see it know its name. Our plant has been five years in its present position, and each year the flower-spikes are stronger. They are this year over 3 feet high, and thickly furnished with blossoms. *E. M.*

GERANIUM WALLICHIANUM.—G. Wallichianum (Sweet) was first raised in England about the year 1820 from seeds gathered in Nepal by Dr. Wallich. It was first described and named by Sweet (*Geraniaceæ*, vol. i., t. 90), who tells us that it will strike freely from cuttings, planted in pots—a statement I have tried in vain for several years to verify. It was again described and figured by Sims in 1823 (*Bot. Mag.*, vol. 50, t. 2317). It has probably been in cultivation ever since introduced, but owing to the difficulty of propagation, and the trouble of raising from seed, it has never been a favourite with nurserymen, and I find, on looking through the catalogues of five leading nurseries, that it is mentioned in only one of them. A good coloured portrait of the plant is wanted, as those in Sweet and in Curtis give a very imperfect idea of it. They are both coloured dark red; but in English gardens the flowers are generally blue. The habit is prostrate and spreading, which is not shown in the small pieces figured. I first saw the plant about twelve years ago growing plentifully in the garden at Coed Coch, in Denbighshire. It had been long cultivated there, and the dry, rocky soil seemed to suit it. All the plants of it there had blue flowers, and from these I have since raised many hundred seedlings. About ninety per cent. of these were blue of different shades; the remainder were dark or light pink. The species is very impatient of damp at the root, and as it sends a tap-root to a great depth, and dies at once, even in the middle of flowering, when it meets with any stagnant moisture, it is a short-lived plant in this clay soil, seldom living more than three years. The seedlings do not flower till the second season, when they make stiff horizontal branches nearly 2 feet long, with joints of 5 or 6 inches. The branches are killed back to the crown by the first hard frost, and the third year often grow 4 or 5 feet long. The flowers 2 inches across, are expanding, flat, are sparsely produced in August and September, and when the autumn is dry, seeds are ripened. The best colour is as good as that of G. pratense in its wild state. Two years ago the Geranium bed in the herbaceous garden at Kew was nearly filled with G. Wallichianum in many shades of colour, they are probably still there. In Hooker's *Flora of British India*, vol. i., p. 230, we read, "The very large solitary stipules best distinguish this species." A First-class Certificate was lately given by the Floral Committee of the Royal Horticultural Society to a G. Wallichianum, with bright blue flowers, which they named "Shirley Blue," but it seems a mistake to give a floral certificate and a distinctive name to an individual plant, which can neither be increased by division or cuttings, nor exactly reproduced from seed. The way to improve on the type of such plants is to be careful to select seed only from individuals of the best colour and habit. *C. Wolley Dod, Edge Hall, Malpas.* [The flowers of Shirley Blue differ from those sent by our correspondent in the possession of a white eye. The difference may not be of specific, but it certainly is of horticultural, value. ED.]

PIMIENTOS.

MR. PHILIP P. AYRES, of Gandia, Valencia, has kindly sent us from Spain some specimens of the mild Spanish Capsicum (Piment doux d'Espagne), or large-fruited Capsicums, both green and white, which are so largely used as a vegetable in Spain and Hungary, but which are little known in this country. They may be cooked in various fashions, like Tomatos, but the seeds should be removed before cooking. They form a very agreeable change among vegetables. In most of the varieties the flavour is mild and agreeable, but some are described as "piquant." We found this to be the case, and would hence recommend those who object to the "piquancy" to try a small portion first before embarking on larger enterprise. They would form an excellent admixture in salads; while stuffed in the way of "Tomates farcies" they would prove excellent, and, indeed, are highly to be commended.

In Hungary the fruits in question are dried in the sun or in the oven, and then coarsely powdered, the powder being used in stews, &c., under the name of Paprika (see *Gardeners' Chronicle*, June 10, 1876, p. 762).

We add figures of the square-fruited mild Capsicum grown by Mr. Morgan, of Harrow (figs. 67 and 68). The fruit is of large size, red, and devoid of pungency, whence the French speak of it as "Piment doux." In Vilmorin's *Plantes Potagères*, some dozen or more varieties are mentioned. Vilmorin notes the slowness with which the culture of this excellent vegetable has extended. It was, he says, introduced into Naples by the Spaniards in the 16th—17th centuries, and has since remained in common use there without being utilised elsewhere. "It makes an excellent salad, having all the flavour of the Capsicum, without pungency, and enters into various light and pleasant dishes of the Italian and Spanish cooks."

Grown under glass in this country, the plants are very handsome, as the collection grown at Chiswick a few years ago amply testified. Frame culture in light rich soil with a sufficient supply of water is very satisfactory. Though called "Piment," they have nothing to do with the spice of that name, nor have they any better right to the name of pepper.

SOCIETIES.

ROYAL HORTICULTURAL.

AT the meetings of the Committees held on the 9th inst., and reported at full in our last issue, the awards were as follows:—

BY THE FLORAL COMMITTEE.

First-class Certificate.

To Gladiolus Lemoinei Nuée bleue, from Mons. V. Lemoine.

Awards of Merit.

To Gladiolus Leonard Kelway, from Messrs. Kelway & Son.

To Gladiolus Nanceianus Le Grand Carnot, from Mons. V. Lemoine.

To Gladiolus Lemoinei P.P.B., from Mons. V. Lemoine.

To Gladiolus Lemoinei E. V. Hallock, from Mons. V. Lemoine.

To Gladiolus Lemoinei Louis Thibaut, from Mons. V. Lemoine.

To Cactus Dahlia Laciniata aurea, from Messrs. H. Cannell & Sons.

To Cactus Dahlia Dr. Peters, from Messrs. H. Cannell & Sons.

To Cactus Dahlia Cannell's Favourite, from Messrs. H. Cannell & Sons.

To Cactus Dahlia Maid of Kent, from Messrs. H. Cannell & Sons.

To Godetia Duke of Fife, from Messrs. Daniels, Bros.

To Cactus Dahlia Black Prince, from Mr. J. Green.

To Show Dahlia Lorina, from Mr. Charles Turner.

To Pompon Dahlia Marion, from Mr. Charles Turner.

To Pompon Dahlia Rubens, from Mr. Charles Turner.

To Pompon Dahlia Crimson Beauty, from Mr. T. S. Ware.

BATH FLORAL FÊTE.

SEPTEMBER 3 AND 4.—The usual autumn show was held on the above dates in the Sydney Gardens, very enjoyable weather prevailing. It was in all respects a very fine exhibition—one of the best held in Bath for years, and all the tents were filled to overflowing. One very interesting feature was the collection of wild flowers, and they served to illustrate in a remarkable degree the wealth of the native flora of the district. Fuchsias were a leading feature—would that such plants could put in appearance at one of the Temple Shows of the Royal Horticultural Society! It was, perhaps, one of the finest lots of specimens ever seen here, many of them being from 9 to 10 feet in height. One could desire they were not so formally trained, but that is a necessity, seeing that some of the plants have to be conveyed 20 and 30 miles by road.

Stove and Greenhouse Plants.—Some very fine specimens of these were staged, not a few of the Crotons being brilliantly coloured. One prominent class was for twelve ornamental foliage plants, and six stove and greenhouse specimens in bloom. Mr. James Cypher was 1st with a very powerful lot, having of Austiniana, E. Marnockiana, and E. Jacksoni pallida; Mr. J. F. Mould, who has shown Ericas well this season, had fine specimens of Marnockiana, retorta major, and Jacksoni pallida. The best single specimen was a fine E. Turnbulli, from Mr. Cypher.

Tuberous-rooted Begonias were very good. Mr. C. Rickman, of Trowbridge, is a most successful cultivator, and staged on this occasion six specimens of superior merit; Mr. W. Gingell, gr. to W. Clifford, Esq, of Fairfield, was 2nd, with very fine specimens also.

Foliaged Plants.—The best six specimens came from Mr. J. Carrey, who had fine examples of Latania borbonica, Thrinax elegans, Areca Verschaffeltii, Kentia Belmoreana, and Crotons D'Israeli and Queen Victoria.

Exotic Ferns were represented by a remarkably good collection from Mr G. Tucker, similar to what he exhibited at Trowbridge. Mr. J. Goddard, gr. to R. Cripps, Esq., had the best six, staging fine specimens mainly of Adiantums. Mr. Goddard had the best specimen—a fine Adiantum Farleyense; Mr. Tucker was 2nd with Gleichenia rupestris.

Coleus were shown in the form of handsome pyra-



FIG. 67.—A PIMIENTO PLANT. (SEE P. 333.)

To Montbretia crocosmæflora maculata, from Mr. James O'Brien, Harrow.

To Dianthus Caryophyllus, Marguerite, from Messrs. James Veitch & Sons.

Medals.

Silver-gilt Banksian, to Messrs. Kelway & Son, for a collection of Gladioli.

Silver Banksian, to Messrs. Paul & Son, for a collection of cut specimens of hardy shrubs.

Silver Banksian, to M. V. Lemoine, for a collection of hybrid Gladioli.

Silver Banksian, to Sir Trevor Lawrence, Bart., M.P., for Habenaria militaris.

Silver Banksian, to Mr. J. Walker, for a collection of Apples.

Bronze Medal, to Messrs. H. Cannell & Sons, for collection of Cactus Dahlias.

BY THE ORCHID COMMITTEE.

First class Certificate.

To Cattleya aurea Statteriana, from T. Statter, Esq.

Award of Merit.

To Lælia elegans Turneri (Stand var.), from T. Statter, Esq.

flowering plants Allamanda nobilis, Stephanotis floribunda, Bougainvillea glabra, Ixora Pilgrimii, Erica Eweriana, and Statice profusa. His grand foliage plants consisted of a magnificent Latania borbonica, Kentia Forsteriana, K. australis, and K. Belmoreana, Crotons Thompsoni, Queen Victoria, angustifolium, Countess, and Sunset, the last-named brilliantly coloured; Cycas circinalis, Cordyline indivisa, and Dasylirion acrotrichum.

Mr. Cypher also had the best twelve stove and greenhouse plants in bloom. The best specimen stove plant was Clerodendron fallax, from Mr. Wills; Mr. Cypher was 2nd, with Allamanda Hendersoni. Mr. Tucker had the best specimen greenhouse plant, a good piece of Statice profusa; Mr. Cypher was 2nd, with Rhododendron Duchess of Edinburgh.

Orchids were shown by Mr. Cypher who had the best six examples of Odontoglossom grande, O. Harryanum, Dendrobium formosum, Vanda Sanderiana, with a spike of very fine flowers; Aërides Sanderiana, and Cattleya Gaskelliana. The best new or rare plant was Cattleya Dowiana, from Mr. C. Rickman, gr. to G. L. Palmer, Esq., Trowbridge.

Heaths were represented by some very good specimens, Mr. Cypher took the 1st prize with Erica retorta major, E. obbata purpurea, E. Turnbulli, E. mids, well grown and coloured. Charles Hart should be noticed as a singularly handsome variety.

Cut Flowers.—Gladioli led the way, finely shown. The best collection of thirty-six spikes came from Mr. G. S. Walters, nurseryman, Calne. Dr. Budd, of Bath, had the best twelve spikes.

Dahlias.—These were an excellent feature, all the types being shown in good form. Mr. Geo. Humphries, Chippenham, had the best twenty-four blooms; Messrs. Heath & Son, Cheltenham, was awarded the 2nd prize for a good stand also. But the pretty pompon varieties have not up to the present found a place in the Bath schedule.

Roses were remarkably good. Messrs. J. Jefferies & Son had the best twenty-four blooms, having the following in excellent condition:—Grace Darling, François Michelon, Duchess of Bedford, La France, Madame Marie Verdier, Countess of Oxford, Pride of Waltham, Dupuy Jamain, Comtesse de Serenye, A. K. Williams, The Bride, Mons. E. Y. Teas, Mrs. J. Laing, Charles Lefebvre, Mrs. Jowitt, &c. In the class for twelve varieties, Mr. Gray was 1st, with a fine lot, but closely followed by Messrs. Perkins & Son, Coventry. Mr. Gray had the best twelve Teas and Noisettes.

Fruit.—The contributions of fruit made one of

the finest displays seen at Bath for years. The best collection of twelve dishes came from Mr. Nash, gr. to his grace the Duke of Beaufort, Badminton, who had fine Alicante and Muscat of Alexandria Grapes, Bellegarde and Violette Hâtive Peaches; Lord Napier and Pine-apple Nectarines; Moor Park Apricots, brown Turkey Figs, Bon Chrétien Pears, Jefferson's Plums, Hero of Lockinge and Longleat Perfection Melon. Mr. W. Taylor, gr. to Mr. Alderman Chaffin, Bath, had the best eight bunches of Grapes, in four varieties, staging very fine Alicante, Alnwick Seedling, Muscat of Alexandria, and Madresfield Court. Mr. Nash had the best three bunches of Black Hamburgh, remarkably well finished. Mr. Taylor had the best two bunches of Muscat of Alexandria—very good indeed. The best two bunches of any other white were very good Buck-

Jefferson's and Guthrie's Late Gage; culinary Plums of Goliath and Green Gages were shown of fine quality.

The best three dishes of Pears were Jargonelle, Pitmaston Duchess, and Souvenir du Congrès, from Mr. W. H. Bannister, gr. to H. St. Vincent Ames, Esq., Westbury-on-Trym; Mr. J. Goddard was 2nd with fine fruit unnamed. The best dessert Pear was Bon Chrétien.

The best three dishes of dessert Apples were Early Margaret, Worcester Pearmain, and Irish Peach, from Mr. Robert Palmer, Bristol. The best single dish was Beauty of Bath, in very fine condition, from Mr. W. Grant; Worcester Pearmain taking the 2nd prize. The best culinary Apples were Lord Suffield, Ecklinville, Warner's King, Emperor Alexander, and Pott's Seedling: Mr. T. Arnold was 1st,

ONION SHOW AT CHARD.

It is not often that a show of any size is devoted entirely to exhibitions of Onions, but on Wednesday, September 3, there was held in the large new Corn Exchange at Chard one of the most successful that it could be possible to have. Messrs. Jarman & Co., of Chard, offered £5 5s. cash prizes for six specimen Onions of any variety, grown from seeds supplied by them during the past spring, and the result was that 203 dishes from all parts of the United Kingdom were staged. As judges, the firm secured the services of Mr. N. Lukins, the manager of that department at Messrs. Hurst & Son's, Houndsditch, London, and of Mr. J. Franklin, of Streatham Hall Gardens.

The following were the successful competitors:—

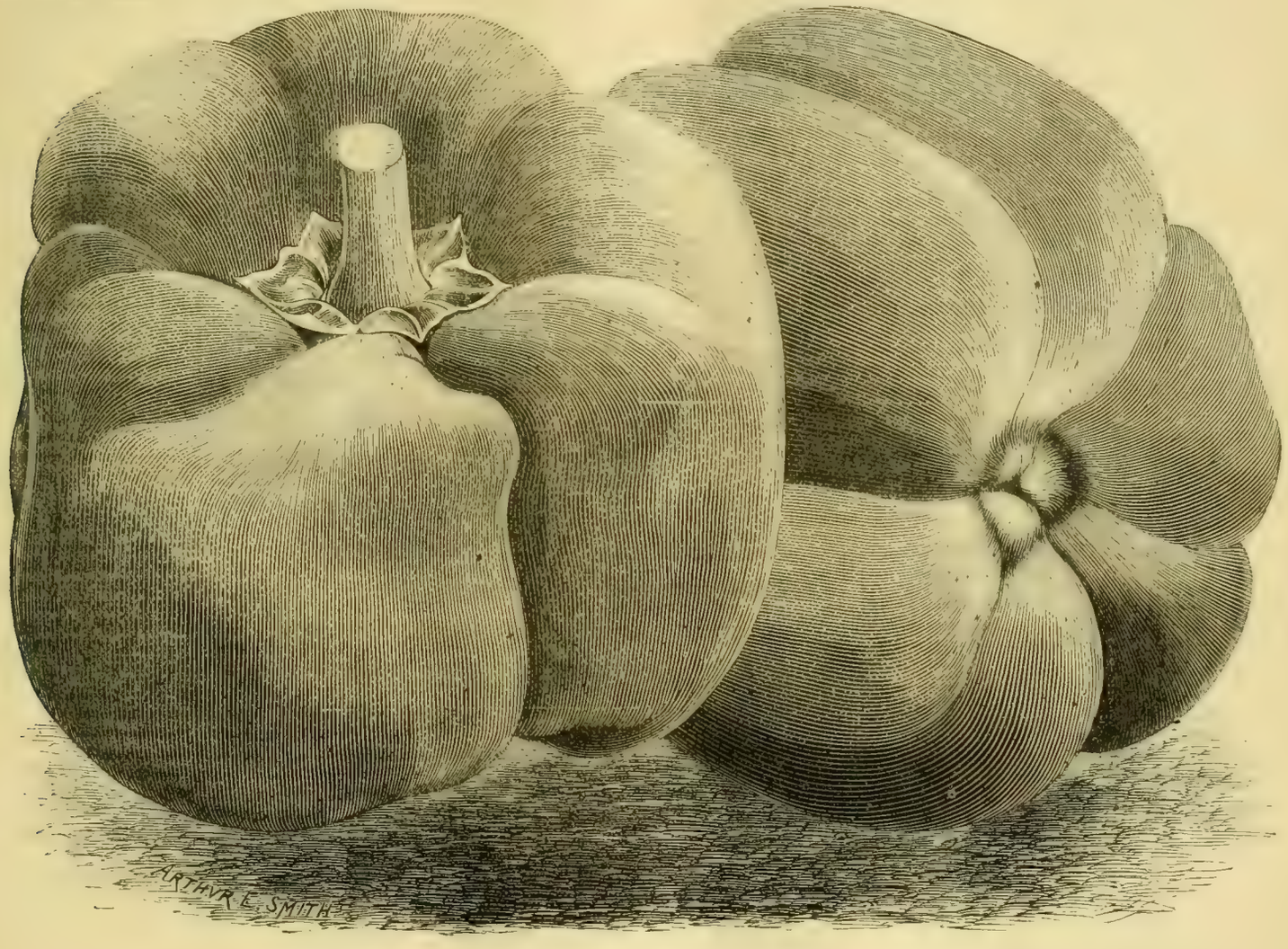


Fig. 68.—Capsicum annuum (pimiento): mild flavoured: colour red or green (see p. 333.)

and Sweetwater, from Mr. J. Atwell, gr. to J. B. Brain Esq., Stoke Bishop. The best two of any other black were Alnwick Seedling from Mr. Taylor.

Melons were very plentiful; the best green-fleshed were Hero of Lockinge and Sutton's Green-fleshed; the best scarlet-fleshed, Scarlet Invincible, and Victory of Bristol.

The best nine Peaches were Walburton Admirable, from Mr. W. Coomber, gr. to J. W. Langdon, Esq., French Hay; Mr. G. Pymn coming 2nd with Dymond. The best six were Royal Charlotte, Barrington, taking the 2nd prize. The best nine Nectarines were Pine-apple from Mr. G. Pymn; Mr. W. H. Tugwell, Bath, was 2nd, with Pitmaston Orange. The best six were Victoria, and the next best Violette Hâtive.

Dessert Plums were represented by fine fruit of

and Mr. A. Miller, gr. to W. H. Long, Esq., M.P., Rood Ashton, 2nd. The best single dish was Emperor Alexander, Warner's King coming 2nd.

Vegetables were a great feature, and occupied considerable space. The best collection of twelve dishes—a very fine lot indeed—came from Mr. Thos. Wilkins, gr. to Lady Theodora Guest, Henstridge, Blandford; Mr. G. H. Copp, gr. to W. S. E. Drax, Esq., Sherborne, was 2nd.

Miscellaneous collections included a large number of Apples, and small fruiting trees in pots from Messrs. Geo. Cooling & Sons; Mr. S. J. Pavitt, Rose Cottage, Bath, had a similar lot of trees; Messrs. R. T. Veitch & Sons had a large collection of cut flowers; Messrs. Geo. Cooling & Sons the same; Messrs. A. H. Gray and J. Mattock Tea Roses; and Mr. Henry Eckford, with a collection of his new Sweet Peas.

1st, Mr. J. Wilkins, gr. to Lady Guest, Inwood House, Henstridge; 2nd, Mr. W. Greedy, gr. to W. S. Gibbs, Esq., Batts Park, Taunton; 3rd, Mr. J. Hoddinott, Arnold Square, Fordington; 4th, Mr. J. Trott, Furnham, Chard; 5th, Mr. C. H. Copp, gr. to W. E. S. Erle-Drax, Esq., Holnest Park, Sherborne; and 6th, Mr. Wm. Reynolds, Ballard's Hill, Freshwater, Isle of Wight.

The monotony of Onions was relieved by groups of plants, also cut flowers from the nurseries of Messrs. Jarman & Co. Of Dahlias, the firm make a specialty, staging a very large collection each of show and fancy, of Pompon and of Cactus varieties. We understand that they intend holding their exhibition of Onions next year in connection with a Chrysanthemum show, of which the public will have due notice.

GREAT YARMOUTH HORTICULTURAL

This Society has been called to life again by the General Amusements Committee, and the show was held on the 4th, in the Recreation Grounds, which are well adapted for horticultural *fêtes*.

The chief feature in the cut flower department was the Roses, which were fresh and fine as June blossoms, which shows how well the cool summer and heavy rains have suited the hybrid perpetuals, which have all made strong growths, and are producing fine blooms. The Teas are not so good, as they like greater heat, but for all that there were some fine flowers in the winning stands. The classes for Roses were open, and the contest throughout was among trade growers, and lay between the well-known nurserymen of Colchester, the champion Cants, and Mr. D. Pryor, who shared the honours between them, Mr. F. Cant outdistancing the old stager by taking most of the 1st prize.

Designs for flower gardens seem to be in great favour at Yarmouth, as there were six exhibits, and they were admired, but there was too much glare and colour in them, and it is to be hoped that such set patterns and geometrical shapes will not long attract such notice, as we are now merging to a better state of things in garden adornment, where shrubs and hardy plants, with breadths of grass, take the place of beds and intricate paths between, which look like a maze, and are confusing to the eye by their many and tortuous windings.

Plants were not well represented, although there were a few fairly good specimens, but the whole were on platforms or stages, and they would have shown off far better standing on the turf, or just elevated on pots to give the necessary regularity to the different groups, as then they would have been more in line with the eye and vision, instead of above, and displaying so much of the under-sides of the plants.

The year has been considered a very bad one for outdoor fruits, but this would not appear to be the case about Yarmouth, as the tent was crowded with fine Peaches, Nectarines, Pears, Apples, and other outdoor fruits; and Grapes were there in great quantities, but though some were very good, the larger portion lacked colour, and the high finish usually seen when Mr. Allan, of Gunton Park, and other noted growers, used to compete at Yarmouth show. In the class for Muscats, Mr. Berness took 1st for three bunches, which were of uniform size, and fairly well coloured; but those contributed by Mr. de Poix, of Bungay, were much larger in bunch and berry, and only took 2nd.

The Peaches, though not large, were well coloured, and the same may be said of the Nectarines, the finest sorts among the first-named being Bellegarde and Noblesse, and the yellow-fleshed Nectarines taking the lead, the sorts being Rivers' Orange and Pitmaston, both very excellent kinds. Pears consisted entirely of Jargonelle and Williams' Bon Chrétien, which undoubtedly are the best at this season.

Morello Cherries and red Currants were well shown by Mr. Bishop, of Bury St. Edmunds, who had remarkably fine berries of the latter fruit that were large plump and bright, which took 1st prizes; and Mr. Berness was 1st for Warrington Gooseberries.

Vegetables were exceedingly good, the season having just suited them, and though there has been a great cry out about the Potato disease, the tubers exhibited at Yarmouth showed no indication of it, as they were very clear in the skin, and a fine lot throughout. *A Correspondent.*

DALKEITH HORTICULTURAL.

This Society held its annual exhibition in the Corn Exchange, Dalkeith, on the 6th inst. The ungenial character of the summer appears to have been less injuriously felt in this locality than in many others in the North. Fruit was less plentiful than we have seen it here, but some of the samples, notably the six Lord Suffield Apples, with which Mr. Brotherston, Lasswade took 1st prize in the class of culinary Apples would be difficult to beat in any part of the country this season—clean, very large, and equal they were as any could be desired.

Cut flowers were fairly well represented, considering the miserable weather that prevailed for weeks prior to the show. One section provided for these in the schedule, brought out such a number of competitors and excellence of quality as to render it the most prominent feature of the show. Tempting prizes were offered "for the finest and most tastefully-arranged collection of open air cut flowers, consisting of eighteen distinct species, cut from plants growing in the open ground, dressed with their natural foliage, exhibited in stands 36 inches by 18 inches, tubes not to exceed 2 inches bore." Eight competitors entered the lists. The 1st prize was awarded to Mr. Campbell, one of the young men in Melville Castle Gardens; 2nd, to Mr. Palmer, occupying a similar position in Dalkeith Gardens; the 3rd, to Mr. Paterson, Rolton House; and the 4th to the Secretary of the Society, Mr. Pringle, Westfield Cottage, Dalkeith.

NATIONAL CHRYSANTHEMUM.

A well attended meeting of the Floral Committee of this Society took place in connection with the exhibition of early Chrysanthemums at the Royal Aquarium on the 10th inst., Mr. E. Sanderson presiding.

First-class Certificates were awarded to Mr. R. Owen, Maidenhead, for early-flowering Japanese Madame Leon Collin, deep golden-buff, with stout thread-like petals—very handsome; for Pompon Chrysanthemum Miss Lily Stevens, pure white flowers of the finest form, medium-sized, and very free. To Mr. H. J. Jones, Lewisham, for Pompon Chrysanthemum Golden Shah, gold, tipped with bronze—good shape; to Mr. D. Davis, Camberwell, for Japanese Chrysanthemum Feu de Bengale, orange-red, tipped with yellow. Mr. D. B. Crane, Highgate Archway, had Chrysanthemum Japanese Rosa Mundi, magenta rose with silvery reverse—very pretty and promising. Messrs. Reid & Borneman, nurserymen, Sydenham, had white Japanese Chrysanthemum Sydenham White, very much in the way of Mdlle. La Croix; but the committee, not being quite sure of its distinctness, wished to see it again.

New Dahlias were somewhat numerous, Mr. George Humphries, Kington Langley, Chippenham; Mr. Charles Turner, Messrs. Henry Cannell & Sons, Swanley; Mr. T. S. Ware, Hale Farm Nurseries, Tottenham; Messrs. Keynes, Williams & Co., Salisbury; Mr. J. T. West, Cornwalls, Brentwood; and Mr. Henry Glasscock, Bishop's Stortford, having good flowers.

Messrs. J. Burnett & Co., Howe House Nurseries, Cambridge, sent Gladioli, as also did the Rev. H. H. d'Ombrain. Mr R. Dean, Ranelagh Road, Ealing, sent orange, golden, and African Marigolds.

ROYAL CALEDONIAN HORTICULTURAL.

The autumn show of this Society was held in the Waverley Market, Edinburgh, on the 10th and 11th inst. Taking the show as a whole, it is one of the finest the Society ever held at the same season. As regards the number of exhibits, it caps any previous show of the Society, not excepting even the last "International," at which the largest number of entries in its record stood at zenith. The total number of entries was 1860, being 600 in excess of the "International" of nine years ago. There were 296 bunches of Grapes put up for competition, 388 dishes of Apples and Pears, 604 dishes of hardy fruits, 243 exhibits of plants, 291 of cut flowers, and over 500 of vegetables.

The few days of fine weather preceding the show gave a fillip to outdoor vegetation which was quite noticeable in the open air products exhibited. Hardy flowers were never, perhaps, better represented in Edinburgh than on this occasion. Florists' flowers—Pentstemons, Carnations, Picotees, Hollyhocks, Dahlias, Gladioli, and hardy perennial flowers were a very special feature of the show. Roses were also well represented, especially from Dundee and Aberdeen, whence in both cases came splendid samples of all classes of Roses, especially Teas, which in this class of cut flowers were both abundant and fine in quality. The collections of Messrs. Cocker, Aberdeen, and W. & P. Croll, Dundee, were notable for the splendid size and quality of the blooms, their freshness, and size, and substance, being perfect in all respects. The latter firm exhibited the larger collection of the two, including a stand of some fifty yellow-tinted varieties.

Exhibits in a general way were numerous. Messrs. Methven & Sons had a very flowery group, well-developed, of Palms, Liliums, and other flowering plants, and Ferns, and decorative-leaved plants, well arranged on the floor. Messrs. Dicksons & Co., Waterloo Place, exhibited a miscellaneous group on one of the large tables, comprising Carnations, Picotees, Dahlias, Apples, &c. Messrs. Lamont & Son, a fine assortment of single Dahlias and other hardy florists' flowers of great merit. Messrs. Ireland & Thomson a varied and excellent collection of Tuberous Begonias, and groups of ornamental foliage and flowering plants. Messrs. Laird & Sons an ornamental group, composed of Chrysanthemum Madame Desgranges, white and yellow Liliums of sorts, and foliage plants in variety. So much for local nurserymen's exhibits.

Those from a distance formed a most important element in the show. Besides Messrs. Cocker & Sons' and Messrs. Crolls' exhibits of Roses which have been already mentioned, the first-named of these had a very fine display of cut flowers of hardy perennials, comprising some 118 species and varieties, including a number of good varieties of Pyrethrum roseum, which had afforded them fine autumn blooms. The great interest manifested by the visitors in this display showed the growing appreciation of this class of plants by the public. Taking the space occupied by the display in comparison with any equal space occupied by florists' flowers, the herbaceous perennials of Messrs. Cockers' were apparently, to the majority of the public, more interesting, while they held their own fully in brightness and decorative effect. Space will not admit of particularising species and varieties exhibited in the group, but they comprised species largely drawn from the natural order Compositæ, while not a few things, like Arnebia and Corydalis lutea, shown in bunches, indicated not only the peculiarities of the season, but the fitness of this class of plants for flower-gardening purposes in seasons favourable or adverse.

Messrs. Dobbie & Co., Rothesay, had a similar exhibit to that recently noticed under the report of Glasgow and West of Scotland Society's Show, only the improvement of the weather since then has visibly bettered the quality of everything set up, especially in cut flowers of whatever class. Vegetables are perhaps more largely represented, and Celery, both white and red; the special selections of the firm are very superior, unapproached by any other samples of Celery in the show.

Messrs. Birkenhead, nurseryman, Sale, put up a grand table of stove, greenhouse, and hardy Ferns, which, as on the same occasion last year, was greatly admired. The fine condition in which these specialists present their wares, and rich variety of their assortments, appear to carry the northern folks by storm. It is impossible to resist particularising a few of the more remarkable and rare forms on their table: Davallia tenuifolia, D. Veitchiana, D. retusa, Lygodictyon Fosteri, Nephrolepis Bausei, Lastrea fragrans, Athyrium f. f. setigera furco cristatum, Asplenium Trichomanes confluens, perhaps the best of the several varieties of this interesting species; Athyrium f. plumosum elegans, a very fine form of an A. f. f. todeoides, is one of the most elegant of the progeny of this elegant and variable species. The collection is rich also in Scolopendriums, the most remarkable being S. vulgare crispum cristatum and S. v. c. Stablesi. A form of Athyrium f. f. named setigera capitatum, not in commerce, has all the elegance of setigera, but is distinguished by the fronds being elegantly crested at the apex. It looks a form with the promise of rivalling any of the many elegant things which this species has yet given origin to.

Messrs. Laing & Mather, Kelso, presented a design of a flower garden, the floral effects being produced by the blooms of Carnations set in their own foliage, a carnationry, if the phrase may be coined, which had something of character about it. The same firm also exhibited a choice collection of border Carnations and Picotees.

Mr. Forbes, Hawick, had a varied collection of Pentstemons, Hollyhocks, Violas, &c., of considerable merit.

Mr. Deveril, Banbury, exhibited splendid samples of his own stock of Onions grown by Mr. Wilkins, gr. to Lady Theodora Guest, Inwood, Dorset, which were marvels in size and finish considering the date.

Mr. Henry Eckford, Salop, exhibited Shirley Poppies and Sweet Peas.

Mr. Alex. Campbell, Cove Gardens, Gourock, put up a splendid lot of Gladiolus, remarkable for the extreme length of their spikes, and the size and symmetry of the flowers.

Messrs. Cross & Sons, Glasgow, had a good exhibit, consisting of vegetables, cut flowers from the open air, and others, and formed one of the best features of the show.

Fruit.—Seldom has better and worse fruit been shown simultaneously in Edinburgh at what may be called good fruit exhibitions than on this occasion. In Grapes particularly, the best, perhaps, that have

ever been shown here were on the tables on this occasion. The prizes for twelve dishes of fruit were competed for by five exhibitors, Mr. Mackinnon, Melville Castle, taking the 1st position easily; his Grapes, Gros Maroc, Black Alicante, Black Hamburgh, and Muscat of Alexandria being very superior to anything on other competing stands, and well backed up by subjects of subordinate interests Mr. McIndoe, gr., Hutton Hall, Yorks, was placed 2nd, with a most meritorious collection; and Mr. Hunter, gr., Lambton Castle, Durham, was 3rd.

For a collection of eight dishes of fruit, Mr. McIndoe was an easy 1st, against six competitors; Mr. McKelvie, Broxmouth Park, being 2nd, and Mr. David Murray, Culzean Castle, 3rd.

The collection of twelve dishes of hardy fruit brought five competitors, the 1st being taken by Mr. James Day, Galloway House, Kircudbright; 2nd and 3rd in this class being Mr. James Brown, Abercairney, and Mr. L. Dow, Newbyth, East Lothian.

In orchard-house fruit, twelve dishes, Grapes excluded, Mr. McIndoe was an easy 1st, Mr. Mackinnon 2nd, and Mr. Hunter, Lambton Castle, 3rd.

The class of six bunches of Grapes brought five competitors in the field. Mr. McHattie was an easy 1st, with splendid samples of Black Hamburgh, Muscat of Alexandria, and Lady Downes; Mr. Wm. Murray, Rolmont, was placed 2nd, and Mr. D. Murray, Culzean, 3rd.

In class 6, seven competitors put in an appearance, Mr. Mackinnon being an excellent 1st, with grand samples of the following sorts of Grapes:—Gros Maroc, Mrs. Pince, Black Alicante, and Muscat of Alexandria.

Space will not admit of following the awards in every class in this or any other sections of the show, and we can only glance hastily at the leading plant, and cut flower and vegetable classes.

The prize for a table of plants, 20 feet by 5 feet, arranged for effect, brought only two competitors —Mr. Grossart, Oswald House, Edinburgh, and Mr. McIntyre, Darlington, the former being placed 1st with a free and gracefully put up group of flowering and foliage plants; while the latter, with very superior foliage plants, on which he almost exclusively relied, took 2nd position.

A fine group of Conifers brought Messrs. J. Dickson & Sons, Edinburgh, to the front. The prize for a group of ornamental plants, occupying 400 square feet, to Messrs R. P. Laird & Sons, Edinburgh. To the same firm fell the honours for four Palms.

For twelve Conifers in pots, the 1st prize was taken by James Dickson and Sons, the 2nd falling to Messrs. Laird.

Six table plants in the nurserymen's class gave Messrs. Laird a walk over.

In Gladioli, Messrs. Stuart & Mien, Kelso, were 1st. In Hollyhocks, Messrs. Kerr & Son, Kalemouth, Roxburgh, were the winners.

Eighteen trusses of single Dahlias were well put up by Messrs. John Lamont, and were awarded 1st prize. Messrs. Kerr & Sons were in the front with spikes of Hollyhocks. The best show Dahlias came from Mr. Walker, Gateshead; the best fancy Dahlias from Mr. M. Campbell, Blantyre. The best thirty-six Roses were shown by Messrs. Cocker & Sons, Aberbeen, who took the running in all classes of Roses; and the best twelve trusses of Chrysanthemums were set up by Messrs. Laird & Sons.

Vegetables were good and plentiful, and competition very keen.

CHELTENHAM AND GLOUCESTER.

September 10 and 11.—The autumn show was held in the Winter Gardens. Mr. Cypher was 1st for stove and greenhouse plants in bloom, and fine plants they were for so late a period; his best was Erica Eweriana, 4 feet through, a solid mass of bloom; Bougainvillea glabra, and the new Allamanda magnifica were included; 2nd, Mr. Mould, Pewsey, Wilts, this plant being much smaller, and past its best.

A class for a group of thirty plants arranged for effect brought forth a good competition, and nearly filled all down the centre of the tent. Mr. Cypher showed some of his best plants, and many of his Palms were 16 to 18 feet high, and in splendid condition; Messrs. Heath & Sons, with much smaller plants, were 2nd.

Dahlias, twenty-four blooms, were very fine, from Messrs. Heath, who was 1st; and was followed by Mr. Hobbs, Bristol.

Roses, shown in twelve varieties, were good for the season, and Messrs. Heath led.

Fuchsias were well done, but consisted of nearly all light varieties.

Exotic Ferns were shown by Mr. Cypher alone, who had fine plants.

Fruit was shown in quantity, and well done; for a collection of eight dishes, Mr. M. Biddulph, M.P., Ledbury, led with splendid examples.

The collections of culinary and dessert Apples brought out a large number of dishes, Messrs. Skinner, Earl of Coventry, and Lee Campbell taking the prizes. There were twenty-four single dishes of dessert Apples, and a large number of single culinary varieties.

Vegetables completely filled one large tent, and were shown in great quantities—indeed, rather over done, some huge piles being staged where a third of the quantity would have made a good dish. Potatos were shown in great numbers.

The baskets of salads are always very fine at this show. There were a great many single dishes of Beetroot, the Cheltenham Green-top being the best represented.

MANCHESTER ROYAL BOTANICAL AND HORTICULTURAL.

Sept. 12 and 13.—An excellent exhibition of fruit and flowers took place in the gardens of the above Society at Old Trafford on the above date, and proved to possess many points of great interest. Foremost was the competition in the class for eight bunches of Grapes, the handsome 1st prize of 15 guineas being offered by Messrs. W. Thomson & Sons, Tweed Vineyard, Galashiels, and this brought eleven collections, some of the most famous cultivators of the day entering the lists. A good deal of criticism of the awards made by the judges followed their announcement, but seeing that the judges regarded as of primary importance size of the berry, quality in the variety, and superb finish, we think they were right in their award.

Mr. Alderman Chaffin, of Bath, was 1st with two bunches each of Muscat of Alexandria, Madresfield Court, Alnwick Seedling, and Black Hamburgh, the latter fine in bunch, but a little wanting in finish. Mr. Allan, gr. to Lord Suffield, Gunton Park, Norwich, was 2nd, with two fine bunches of Duke of Buccleuch, Alnwick Seedling, Alicante, and Gros Maroc, all fine in bunch, berry, and finish. The Duke, though fine in all other respects, was wanting in colour, and there was an absence in Mr. Allan's collection of three of our finest Grapes—Muscat of Alexandria, Black Hamburgh, and Madresfield Court, and in the month of September the two first of these should be in a collection of eight bunches. Two equal 1st prizes were awarded: one to Mr. McHattie, gr. to the Marquis of Lothian, Dalkeith; the other to Mr. Goodacre, gr. to the Earl of Harrington, Elvaston, Borrowash. Some thought Mr. McHattie should have been 1st; he had three fine and well-coloured bunches of Muscat of Alexandria, two of Black Hamburgh, two of Lady Downes, and one of Madresfield Court. At first sight, this was a very attractive collection, but the bunches were overcrowded, and the berries uneven and generally small, through insufficient thinning. Mr. Goodacre had the same number of bunches of Muscat of Alexandria, two of Alicante, two of Madresfield Court, and one of Black Hamburgh.

Mr. McHattie had the best two bunches of black Grapes, having finely finished Black Hamburgh, though small in the berry; Mr. Goodacre came 2nd, with Madresfield Court.

Mr. Alderman Chaffin had the best two bunches of white Grapes, staging fine white Muscats; W. B. Davenport, Esq., of Chelford, coming 2nd, with the same.

There were four collections of eight dishes of Fruit, and Mr. Goodacre was awarded the 1st prize, with a very good lot, consisting of excellent Muscat of Alexandria and Gros Maroc Grapes, Barrington Peaches, Victoria Nectarine, Ischia Fig, Powell's Late Apricot, Read's Scarlet-fleshed Melon, and Queen Pine; Mr. Wallis, gr. to the Rev. W. Sneyd, Keele Hall, Staffordshire, was 2nd, with the same varieties of Grapes, fine Sea Eagle Peaches, Pitmaston Orange Nectarines, Moor Park Apricots, Transparent Gage Plums, white Ischia Figs, and Queen Pine.

The best eight Peaches were those of very fine Barrington, from Mr. Wallis. The best eight Nectarines were Humboldt, from Mr. Lambert, gr. to Col. Wingfield, Shrewsbury. The best Pine-apple was a Queen, from Col. Dixon, Chelford. The best green-fleshed Melons out of a goodly number, were Hero of Lockinge and Best of All; the best scarlet-fleshed, Read's S. F., and a seedling.

Mr. Allan, Gunton, took the 1st prize for a dish of Plums, having very fine Pond's Seedlings. Some fine Pears were shown. The best three dishes grown under glass came from Mr. Hunter, who had very fine Beurré Diel, Pitmaston Duchess, and Souvenir du Congrès. Mr. R. H. C. Nevill had the best three bunches grown in the open air, consisting of Beurré de l'Assomption, Bon Chrétien, and Brockworth Park.

The best twelve dishes of culinary Apples came from Mr. Samuel Barlow, grown in his garden at Llandudno, who had varieties of very superior merit, consisting of Gloria Mundi, Frogmore Prolific, Peasgood's Nonsuch, Stirling Castle, Pott's Seedling, New Hawthornden, Gravenstein, Golden Noble, Cox's Pomona, Blenheim Orange, Cat's Head, and The Queen. Some of these were so large and grandly coloured as to rival those shown by Messrs. G. Bunyard & Co. at the recent fruit show at the Crystal Palace.

The best twelve dishes of dessert Apples also came from Mr. Samuel Barlow, who had a superior lot of richly-coloured fruit, consisting of Margil, Ribston Pippin (very fine indeed), Herefordshire Beaufin, Worcester Pearmain, Wormsley Pippin, Fearn's Pippin, and Duchess of Oldenburg; 2nd, Mr. C. Lee Campbell, Ross, with very fine Worcester Pearmain, Irish Peach, King of Pippins, Cellini Pippin, White Transparent, Pine-apple Russet, &c.

The best dish of Cherries was Morello from Mr. Goodacre.

Vegetables in collections of twelve varieties were finely shown by several exhibitors; Mr. Lambert was 1st; and Colonel Cornwallis-West, M.P., Ruthin, 2nd. Autumn Giant Cauliflower, Ailsa Craig Onion, Snowball and Golden Perfection Turnips, Oxonian Leeks, Lockie's Perfection Cucumber, &c., were in fine condition. Tomatos of the Perfection type were finely shown, and also Cucumbers, mostly Lockie's Perfection.

Collections of hardy cut flowers made a great display, and Messrs. Harkness & Son, nurserymen, Bedale, were 1st with a collection of fifty-four bunches, large in size, the subjects generally of high quality, such as Gladioli of the Lemoinei type, Lilies, Helianthus, Scabiosa caucasica, very finely coloured; grand bunches of several varieties of Tigridias, Papaver bracteatum, &c. Messrs. Dickson's (Limited), Chester, were 2nd, with some good things, including several varieties of Montbretias, Gladioli, Lilies, Phloxes, Asters, &c. Mr. Samuel Barlow was 3rd, with a very interesting collection.

Collections of cut Roses were a remarkable feature. Messrs. Harkness & Sons, in particular, staging a large number of flowers of very fine character, including twenty-four blooms of Mrs. John Laing, and the following:—The Bride, Madame A. Lavallii, Duc de Rohan, Dr. Andry, Madame Chas. Crapelet, Beauty of Waltham, Countess of Oxford, Star of Waltham, Crown Prince, Marie Verdier, General Jacqueminot, Alfred Colomb, &c.

In the amateurs' class, Dr. S. P. Budd, Bath, was 1st, with a very fine lot of flowers, including Duchess of Bedford, Jean Ducher, Arthur Dickson, Comte de Raimbaud, Madame Cusin, Charles Lefebvre, Fisher Holmes, Madame Lambard, General Jacqueminot, Louis van Houtte, Grand Mogul, &c.

Some very good Gladioli were shown. The best stand of forty-eight spikes came from Mr. Smith, Prestwich, Ayr.

In the class for twenty-four spikes, Mr. A. Whitton, Bedale, was 1st, with a very fine lot, among them the following named varieties:— Baroness Burdett Coutts, Orphée, Ondine, gigantea, Le Phare, Grande Rouge, Horace Vernet, and Mons. Binold.

Some large collections of early-flowering Chrysanthemums were shown in bunches.

The best twelve blooms of Show Pansies came from Mr. Thomas Fitton, Castleton, small, but very correct blooms; and Messrs. Harkness & Sons had the best twelve blooms of Fancy Pansies.

Most attractive also were collections of Orchids, and Mr. Blair brought from Trentham an exceedingly valuable collection, unnamed. Mr. Thomas Statter, Stand Hall, Machester, was 2nd, also with a very fine assortment.

A stand of twelve blooms of a seedling white Show Dahlia, named Ivory White, from Mr. R. Shakeshaft, Florist, Lymm, was highly commended, as also a rich scarlet semi-double Dahlia, named John Burns, as a border variety; this was shown by Messrs. Harkness & Sons, Bedale.

BRIGHTON AND SUSSEX.

SEPT. 10 AND 11.—This annual autumn exhibition was held, as usual, in the rooms of the Royal Pavilion, and upon the eastern lawn. Plants were not present in such large numbers as on some previous occasions, but in many instances absence of numbers was compensated for in the quality. This was noticeable in the classes for stove and greenhouse plants, and Ericas. In the former, Mr. Portnell, gr. to Sir A. Lamb, Bart., Beaufort Park, Battle, was distinctly to the front with fresh and bright plants. In the larger class for eight he staged Bougainvillea glabra, Allamanda Hendersonii, Erica cerinthoides coronata, E. Aitoniana Turnbulli, E. Fairieana, Dipladenia Brearleyana, Statice imbricata, and Ixora Williamsii, a lot of plants which it would be hard to beat in September. In the same exhibitor's collection of four were a fine Erica Ewerіana superba, and E. Irbyana. Mr. Meachen, gr. to Mrs. Armstrong, Withdeane, followed in both instances, his best plants being Rondeletia speciosa major, an immense Pimelea, and Allamandas. With a specimen plant in bloom, Mr. Meachen was 1st with a good Bougainvillea glabra. Mr. Portnell was again 1st in two classes for Ericas, showing well-grown, medium-sized plants. In five classes, this exhibitor staged no less than sixteen Ericas in good condition, clearly showing the great value of these plants for autumn decoration.

For a group arranged for effect, Mr. Meachen was 1st with a bright light combination of flowers and foliage, Mr. Currey following him very closely, being, however, rather deficient in flower. The last-named exhibitor was 1st for fine foliaged plants, staging well-coloured Crotons, and healthy Kentias and Cycads. Mr. Portnell took 1st for six well-grown Fuchsias in profuse bloom. Mr. Meachan was awarded the 1st prize for a well-arranged group of Ferns, no other exhibitor entering.

A very choice exhibit of miscellaneous plants staged by Messrs. B. S. Williams & Son, Upper Holloway, N., was composed chiefly of Orchids, in which Cattleya gigas and Dendrobium formosum giganteum were prominent, with good examples of Rhododendrons (greenhouse vars.), Nerines, and well-coloured Crotons.

A finely-arranged group of Ferns (not in competition) was shown by Mr. G. Miles, Victoria Nurseries, Dyke Road, Brighton, and also a good group of flowering and foliage plants, both being very attractive.

Cut flowers were staged in large numbers. In the Dahlia classes, Mr. Walker, nurseryman, Thame, Oxon, was 1st, for forty-eight, and also for twenty-four shows and fancies, with fine blooms; Messrs. J. Cheal & Sons taking the same position with both Cactus, Pompons, and singles, staging very fine examples.

Roses were better than are usually seen in September, especially so the premier collection from Bath, from whence Mr. Bradbury, gr. to S. P. Budd, Esq., brought several boxes, staging against and beating the nurserymen for both forty-eight and twenty-four varieties, as well as holding a leading position in smaller classes.

Cut flowers of hardy herbaceous plants made a fine display. Thirty-six varieties were required in the class, and large bunches of each kind shown were the rule. The 1st prize went to Mr. Manton, gr. to Mrs. Clifford Brown, Bolney, some of the best in this collection being Rudbeckia purpurea, R. Newmanni, Lobelia cardinalis, Montbretia Pottsii, and Echinops Ritro. Mr. Ladhams, Shirley Nurseries, Southampton, was a close 2nd, having Helianthus atrorubens, Iris pumila, and Tritoma uvaria glaucescens, with other good things.

A large assortment of Dahlias and other flowers, with cut specimens of ornamental shrubs coming from Messrs. J. Cheal & Sons, formed an excellent display. Messrs. Ewing, nurserymen, Havant, had good Roses, and several cut specimens of variegated and other shrubs.

Fruit was of uniformly good quality throughout the various classes in both sections (one being for all comers, and the other for gardeners and amateurs only). Mr. Osman, gr. to J. Baker, Esq., Chertsey, staged some finely coloured Grapes, taking 1st for Alicante (large bunches), and Muscat of Alexandria; Mr. Bury, gr. to C. Bayer, Esq., Forest Hill, being 2nd in both instances with Alnwick Seedling and Foster Seedling respectively. With excellent Black Hamburghs, Mr. Gibson, gr. to Earl Cowley, Draycot, Chippenham, was 1st. Mr. Spottiswood, gr. to Mrs. Duddell, Queen's Park, Brighton, also taking 1st for good Muscats.

For a brace of Melons, Mr. Hopkins, gr. to R. Thornton, Esq., High Cross, Framfield, was 1st. With fine specimens of Brunswick Figs, Mr. Butler, North Lancing, was awarded 1st in one class; and in another, Mr. Thomas, Willingdon, held the same position with Castle Kennedy.

Peaches and Nectarines were of good quality, the best of the former coming from Mr. Harris, gr. to Mrs. Eversfield, Denne Park, Horsham; of the latter, the best came from Mr. Osman.

Culinary Apples were best shown by Mr. Attree, gr. to W. E. Hubbard, Esq., Lower Beeding. Mr. Carter, gr. to T. Thomas, Esq., Willingdon, taking 1st for dessert fruits.

Culinary Pears were well shown by Mr. Johnson, gr. to Captain Green, Bayham Abbey. Mr. Attree showed very superior Plums. Messrs. G. Bunyard & Co. and Messrs. J. Cheal & Sons showed collections.

BLANTYRE HORTICULTURAL.

THIS Society held its Ninth annual exhibition in the School-rooms, Stonefield, on the 12th inst. The leading feature was the competition for the prizes offered for the best three tables of plants, arranged for effect; a Cup, presented by Thos. Jackson, Esq., Greencroft, President of the Society; a Silver Medal, and a money prize, were the inducements offered. The 1st prize was taken by Mr. Millar, gardener, Auchenraith; the 2nd by Mr. McQuater, Millheugh; and the 3rd by Mr. Fraser, Caldercleugh. Some beautifully-grown and flowered specimen Erica Marnockiana and Statice Ratteryana were tabled in the two leading sets of four stove and greenhouse plants, which were tabled by Mr. Finnie, gardener, Allanshaw. Messrs. Cocker & Sons, Aberdeen, and W. & R. Croll, Dundee, Sutherland, Lenzie, Aitken, Lanark; and Mr. M. Campbell, High Blantyre, sent good exhibits. The Gold Medal, for twenty-four Fancy Pansies, went to Mr. Campbell.

Obituary.

JOHN SHAW.—We regret to hear of the death of this gentleman, who was well known in the North, as a landscape gardener. He was in early life engaged in extensive reclamation works at Cannock Chase, but about thirty-five years ago he established the Stamford Nurseries, Bowdon. For many years he acted as Secretary to the Royal Botanical and Horticultural Society of Manchester. He was a director of the Kew Gardens Company, of Southport, where he effected many improvements, and enjoyed a large practice as a landscape gardener. His services were frequently enlisted as a judge at flower shows in various parts of the kingdom. Mr. Shaw had been in failing health for some months past, but did not retire from work till a few weeks ago. He died on the 14th inst. in his seventy-ninth year.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending September 13, is furnished from the Meteorological Office:—

"The *weather* has been very fine and dry, and the general conditions more settled than during any week of the past summer. The days have been fine, warm, and bright, the nights cold, with fog and haze and heavy dew.

"The *temperature* has been above the mean in all districts, the excess having ranged from 1° in 'England, S. and E.,' 'Ireland, S.,' and the 'Channel Islands,' to 4° in 'Scotland, E.' The highest of the maxima were registered during the earlier days of the week, and varied from 81° in the 'Midland Counties' and 80° in 'England, S.W.,' to 72° in 'Scotland, W.,' and 'Ireland, S.' The lowest of the minima were recorded at most stations either on the 12th or 13th, and ranged from 36° to 37° in Scotland, from 39° to 43° in Ireland, and from 38° to 44° over England. The diurnal range was large generally.

"The *rainfall* has been less than the mean in all districts. Over the greater part of the kingdom there was none.

"*Bright sunshine* has been more prevalent than during any week since that ending April 5. The percentage of the possible duration ranged from 37 in 'Ireland, N.,' and between 48 and 66 in most other districts, to 71 in 'England, S.W.,' and to 83 in the 'Channel Islands.'"

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending Sept. 6.	Accumulated. Above 42° for the Week.	Accumulated. Below 42° for the Week.	Accumulated. Above 42°, difference from Mean since Jan. 1, 1890.	Accumulated. Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1890.	Rainfall. Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1890.
		Day-deg	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 +	85	0	+ 57	— 72	6 —	176	33.4	25	25
2	2 +	100	0	— 92	— 58	4 —	151	21.4	41	30
3	2 +	111	0	— 29	— 93	1 —	129	17.4	36	29
4	2 —	104	0	— 99	— 39	4 —	132	17.1	35	36
5	1 —	106	0	— 115	— 26	6 —	126	15.9	30	31
6	2 —	113	0	— 92	— 68	6 —	125	19.6	38	34
7	1 +	97	0	— 49	— 73	4 +	154	33.7	29	32
8	0 av.	109	0	— 30	— 81	3 —	147	22.9	24	30
9	0 av.	112	0	— 102	+ 12	9 —	148	25.7	28	35
10	1 +	109	0	— 59	— 56	4 +	168	23.3	17	30
11	1 +	121	0	— 44	— 15	6 —	161	27.7	22	33
12	3 —	111	0	— 22	— 22	7 —	146	22.9	45	43

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending Sept. 13.	Accumulated. Above 42°, for the Week.	Accumulated. Below 42°, for the Week.	Accumulated. Above 42°, difference from Mean since Jan. 1, 1889.	Accumulated. Below 42°, difference from Mean since Jan. 1, 1888.	Rainfall. More (+) or less (—) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1890.	Rainfall. Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the Week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		Ins.		
1	3 +	95	0	+ 78	— 72	5 —	180	33.7	46	25
2	4 +	106	0	— 70	— 58	7 —	152	21.4	57	30
3	3 +	116	0	— 6	— 93	7 —	129	17.4	54	29
4	1 +	113	0	— 93	— 39	7 —	132	17.1	66	37
5	2 +	115	0	— 100	— 26	7 —	126	15.9	55	32
6	1 +	123	0	— 82	— 68	7 —	125	19.6	65	35
7	2 +	99	0	— 41	— 73	9 —	155	33.8	47	32
8	2 +	113	0	— 13	— 81	9 —	147	22.9	48	30
9	2 +	121	0	— 87	+ 12	10 —	148	25.7	71	36
10	3 +	112	0	— 34	— 56	8 —	169	23.3	37	30
11	1 +	113	0	— 26	— 15	9 —	161	27.7	46	33
12	1 +	134	0	— 6	— 22	8 —	146	22.9	83	44

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

MARKETS.

COVENT GARDEN, September 18.

MARKET shows scarcely any alteration from the previous quotations. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	3 6	8 6	Peaches, dozen,	1 0	8 0
Cobs, Kent, 100 lb.	50 0	—	Pine-app'es, St. Michael, each	2 0	6 0
Grapes, lb.	0 9	2 6	Plums, ½-sieve	7 0	11 0
Lemons, per case	12 0	20 0			
Melons, each	0 6	2 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichoke, Globe, each	0 4- 0 6	Mustard and Cress, punnet	0 4- ...
Beans, French, lb.	0 4- ...	Onions, per bunch	0 5- ...
Beet, red, per dozen	1 0- 2 0	Peas, per quart	1 0- ...
Carrots, per bunch	0 6- ...	Parsley, per bunch	0 4- ...
Cauliflowers, each	0 3- ...	Shallots, per lb.	0 6- ...
Celery, per bundle	1 6- 2 0	Spinach, per bushel	2 0- ...
Cucumbers, each	0 4- 0 6	Tomatos, per lb.	0 9- ...
Endive, per dozen	2 0- ...	Turnips, per bunch, new	0 4- ...
Herbs, per bunch	0 4- ...		
Lettuces, per dozen	1 6- ...		
Mushrooms, punnet	1 6- ...		

POTATOS.—The arrivals this week have been much heavier, consequently prices are rather easier. Expect a little improvement during the coming week. Magnums, 60*s.* to 75*s.*; Snowdrops, 80*s.* to 85*s.*; Hebrons, 60*s.* to 70*s.*; Imperators, 80*s.* to 85*s.* *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Ferns, in var., doz	4 0-18 0
Aspidistra, doz.	18 0-42 0	Ficus elastica, each	1 6- 7 0
— speci. plants, each	7 6-10 6	Foliage plants, various, each	2 0-10 0
Asters, per doz.	3 0- 6 0	Fuchsia, per doz.	3 0- 6 0
Balsams, per dozen	3 0- 4 0	Heliotrope, per doz.	4 0- 6 0
Begonias, per doz.	4 0- 6 0	Hydrangeas, doz.	6 0-18 0
Calceolaria, p. doz.	4 0- 6 0	Liliums, various, per dozen	9 0-18 0
Campanula, per doz.	9 0-18 0	Marguerites, doz.	6 0-12 0
Chrsanthem., p. doz.	4 0-18 0	Mignonette, per doz.	3 0- 6 0
Coleus, per dozen	2 0- 6 0	Nasturtiums, p. doz.	4 0- 6 0
Cyperus, per dozen	4 0-12 0	Palms in variety, each	2 6-21 0
Dracæna terminalis, per dozen	30 0-60 0	Pelargoniums, scarlet, per dozen	3 0- 6 0
— viridis, per doz.	12 0 24 0	— per doz.	6 0-12 0
Euonymus, in var., per dozen	6 0-18 0	Petunias, per doz.	4 0- 6 0
Evergreens, in var., per dozen	6 0-24 0		
Ericas, various, doz.	8 0-18 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun.	2 0- 4 0	Myosotis or Forget-me-nots, 12 bun.	2 0- 4 0
Asters, 12 bunches	1 6- 5 0	Pinks, various, 12 bn.	3 0- 6 0
— French, bunch	1 0- 1 6	Pelargoniums, scarlet, 12 spr.	0 3- 0 6
Bouvardias, per bun.	0 6- 1 0	— dozen sprays	0 4- 0 9
Callaæthiopica, 12 bl.	2 0- 5 0	Primulas, double, 12 sprays	0 6- 1 0
Carnations, 12 blms.	1 0- 2 0	Pansy, or Heartsease, 12 bunches	1 0- 2 0
— 12 bunches	4 0- 6 0	Poppies, various, doz. bunches	1 0- 2 0
Chrysanth., 12 bun.	3 0 6 0	Pyrethrum, 12 bun.	2 0- 4 0
— 12 blooms	1 0- 3 0	Roses, Tea, per doz.	0 6- 1 6
Cornflower, 12 bun.	1 6- 3 0	— coloured, dozen	1 0- 1 6
Dahlias, 12 bun.	2 0- 4 0	— red, per 12 bun.	2 0- 6 0
Eucharis, per dozen	2 0- 4 0	— Safrano, dozen	1 0- 2 0
Gardenias, 12 blooms	2 0- 4 0	— outdoor, 12 bun.	1 0- 3 0
Gladiolus, 12 bun.	6 0-12 0	Stephanotis, 12 spr.	1 6- 3 0
Heliotropes, 12 spr.	0 6- 1 0	Sultan, 12 bunches	3 0- 4 0
Lavender, 12 bun.	3 0- 5 0	Tuberoses, 12 blms.	0 3- 0 6
Lilium, var., 12 bl.	0 6- 4 0		
Maiden Hair Fern, do	4 0- 9 0		
Marguerites, 12 bun.	3 0- 6 0		
Mignonette, 12 bun.	1 0- 3 0		

ORCHID-BLOOM in variety. Not over plentiful.

SEEDS.

LONDON: *Sept.* 17.—**Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, London, E.C., report Clover and Trefoil seeds as exceedingly firm. The samples of new American Red now coming to hand are of inferior quality to last year's. Still higher prices are asked for French-Italian. The new crops of Scotch and Irish Perennial Rye-grasses are estimated as only two-thirds of an average, whilst the weight per bushel proves 5 lb. lighter than last year's. As regards New Zealand Cocksfoot, which is much dearer, the imports into London this season are given as 6000 bags only, against 30,000 for 1889 and 50,000 for 1888. Winter Tares are cheaper. In blue Peas there is a further substantial advance. Mustard and Rape seed show no change. Hemp seed is quoted nominally at 26*s.* per quarter.**

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending September 13, and for the corresponding period in last year:—1890, Wheat, 33*s.* 7*d.*; Barley, 30*s.* 3*d.*; Oats, 18*s.* 8*d.* 1889, Wheat, 30*s.* 2d.; Barley, 28*s.* 10*d.*; Oats, 17*s.* 11*d.*

FRUIT AND VEGETABLES.

SPITALFIELDS: *September* 17.—Good supplies of all kinds of fresh vegetables, Potatos, &c.; trade fair. Moderate supply of fruit, demand good. Prices as under:—Fruit: English Apples, 5*s.* to 12*s.* per bushel; Pears, 3*s.* to 8*s.* per half-sieve; English Tomatos, 3*s.* to 5*s.* per peck of 12 lb.; foreign Tomatos, 9*d.* to 1*s.* 6*d.* per box; Victoria Plums, 8*s.* to 10*s.* per half-sieve; Orleans do., 8*s.* to 10*s.* do.; Damsons, 9*s.* to 10*s.* do.; Bullaces, 5*s.* to 6*s.* do. Vegetables: Cauliflowers, 1*s.* to 1*s.* 6*d.* per dozen; Cabbages, 1*s.* 6*d.* to 3*s.* 6*d.* per tally; Radishes, 2*s.* to 2*s.* 6*d.* do.; Vegetable Marrows, 1*s.* to 2*s.* 6*d.* per dozen; Spinach, 1*s.* to 1*s.* 6*d.* per bushel; Brussel Sprouts, 1*s.* 6*d.* to 2*s.* per half-sieve; French Beans, 1*s.* per bushel; Scarlet Beans, 1*s.* to 1*s.* 6*d.* do.; Parsnips, 4*d.* to 7*d.* per score; Beetroots, 1*s.* to 2*s.* per dozen bunches; Greens, 1*s.* to 1*s.* 6*d.* do.; Turnips, 1*s.* 3*d.* to 1*s.* 9*d.* do.; Carrots, 1*s.* 6*d.* to 2*s.* do.; Parsley, 1*s.* to 1*s.* 6*d.* do.; Celery, 4*d.* to 1*s.* per bundle; Horseradish, 1*s.* to 1*s.* 4*d.* do.; frame Cucumbers, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen; natural do., 4*d.* to 6*d.* do.; Leeks, 1*s.* 6*d.* to 1*s.* 9*d.* do.; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; Endive, 1*s.* to 1*s.* 3*d.* per dozen; Cos Lettuce, 4*d.* to 1*s.* per score; English Onions, 4*s.* 6*d.* to 5*s.* per cwt.; Spanish do., 7*s.* to 7*s.* 6*d.* per case; Belgian do., 3*s.* 6*d.* to 4*s.* per bag of 110 lb.; Dutch do., 3*s.* 9*d.* to 4*s.* do.; Carrots, 25*s.* to 50*s.* per ton; Seakale, 1*s.* to 1*s.* 3*d.* per punnet.

STRATFORD: *Sept.* 18.—The supply has been good during the past week, and a brisk trade done at the undermentioned prices:—Cabbages, collards, 2*s.* 6*d.* to 3*s.* per tally; Cauliflowers, 4*s.* to 6*s.* do.; Mangels, 20*s.* to 22*s.* per ton; Swedes, 19*s.* to 21*s.* do.; Onions, English, 5*s.* 6*d.* to 6*s.* 6*d.* per cwt.; do., Dutch, 4*s.* to 4*s.* 6*d.* per bag; Watercress, 7*d.* per dozen; Onions, 2*s.* 9*d.* to 3*s.* per bag; do., 5*s.* 6*d.* to 7*s.* per box; Apples, 6*s.* to 9*s.* per hamper; Pears, Dutch, 2*s.* to 3*s.* 6*d.* per molly; do., 4*s.* to 5*s.* 6*d.* per sieve.

POTATOS.

BOROUGH AND SPITALFIELDS: *September* 16.—Quotations:—Hebrons, 60*s.* to 80*s.*; Regents, 50*s.* to 70*s.*; Early Rose, 50*s.* to 60*s.*; Magnums, 60*s.* to 75*s.*; Imperators, 55*s.* to 80*s.* per ton.

SPITALFIELDS: *September* 17.—Quotations:—Magnums, 45*s.* to 60*s.*; Myatt's Kidneys, 45*s.* to 55*s.*; Regents, 50*s.* to 60*s.*; Champions, 40*s.* to 60*s.*; Imperators, 50*s.* to 70*s.*; Hebrons, 50*s.* to 60*s.*; Early Rose, 45*s.* to 50*s.* per ton.

STRATFORD: *September* 17.—Quotations:—Magnums, light, 60*s.* to 75*s.*; do., dark, 55*s.* to 65*s.*; Hebrons, 60*s.* to 75*s.*; Regents, 55*s.* to 65*s.*; per ton.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80*s.* to 105*s.*; do., inferior, 40*s.* to 75*s.*; hay, best, 60*s.* to 87*s.*; inferior do., 20*s.* to 50*s.*; and straw, 24*s.* to 42*s.* per load.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

LILACS.—Will some of your readers be kind enough to answer the following queries through your journal. Can Lilacs be brought to bloom in a warm cellar? [Yes.] If so can they be grown in the same boxes as Mushrooms (manure and soil in layers), or would the heat be too great for the roots? How would they do if potted first, and then put in when making up the boxes? Any information bearing on these points would greatly oblige. *Spero.*

NOTICES TO CORRESPONDENTS.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

CAMELLIAS: *Devon.* Camellias are difficult plants to move. You may shift them now, taking great care to keep them thoroughly moist by watering and syringing, and shade to protect them from the sun.

CHAMOMILE FLOWERS: *R. W.* Ask the nearest druggist.

COQUITO NUT: *E. W.* The Nuts are those of the Chilian Palm (Jubæa spectabilis), and are much used in confectionery. A sweet juice is extracted in large quantities from the trunk of the tree, under the name of Palm-honey. *J. M. H.*

GARDENIA: *J. H.* Small trees or large shrubs, some yield a resin, but we are not aware that the wood is utilised.

GRAFTING GRAPES: *H. B. P.* The grafting of certain weak-growing varieties of Grapes on to stronger-growing sorts, so as to prevent shanking, &c., has long been practised, but with doubtful results.

JARGONELLE PEAR: *R. D.* A not uncommon monstrosity. The formation is not unlike that of the Potato tuber, being a dilatation of the stem. The true fruit and seeds are not formed.

NAMES OF FRUITS: *Carter, Page & Co.* Apple, Worcester Pearmain.—*W. A.* Beurré d'Amanlis.—*C. J. N.* Your Apple is not a known sort, and is of inferior quality.—*T. T.* Nectarine Hunt's Tawny; Pear Williams' Bon Chrétien; Peach Bellegarde.—*J. Day.* Apple Manx Codlin; the Pears were not properly developed fruits.—*J. Young*, Apple Grange's Pearmain.—*H. May.* The Apples are: 1, Manx Codlin; 3, Whorle Pippin; 4, Stone's Pippin; 5, Kerry Pippin; 6, Dumelow's Seedling.—*H. Corder.* Apple not recognised; probably a local variety not in general cultivation.

NAMES OF PLANTS: *R. W. H.* Lathyrus magellanicus (Lord Anson's Pea).—*J. B.* Rhus cotinus (the Wig-plant). The wig is formed of a number of abortive flower-stalks without flowers.—*T. P.* Achillea Ptarmica. Fruit next week.—*D. V.* 1, Symphoricarpus racemosus variegata; 2, not known; 3, Osmanthus aquifolius; 4, Hodgens' Holly; 5, Silver Queen Holly; 6, Golden Queen Holly; 7, Pyrus aria. Fruit next week.—*J. M.* Miltonia spectabilis var. Moreliana, pale form.—*J. V.* 1, an American Ash; 2, Cratægus pyrifolia.—*A. H. H.* Epidendrum oncidioides.—*Carter & Co.* Lavatera thuringiaca.—*Geo. Robinson.* Aira caryophyllea.

PHALÆNOPSIS: *F. S. M.* The disease is due to a fungus. As the life-history of the fungus is not known, it would be hazardous to recommend a remedy, but you should at once destroy the affected leaves. You might try the effect of sulphide of potassium, 10 grains to the ounce of water, used in the form of spray.

PINUS LARICIO: *B.* We will examine the roots, and report later on.

PLUM LEAVES DISEASED: *G. C. I.* The fungus so badly infesting "every leaf" of your trees is Puccinia pruni. It does not generally much affect the fruit production, and you will probably not be troubled with it another season. We recently noticed a single wall tree badly attacked by this fungus. The wall was covered with Plum trees, all of the same variety, but no tree, except one, showed the slightest affection, and this showed the disease badly on every leaf. *W. G. S.*

THE PARADISE STOCK: *A. E. B.* It is a species of Apple, not of Plum. It has the effect of dwarfing the plant grafted on it, and of hastening and increasing the production of fruit. The origin of the stock in question is not known for certain. Much was written by the late Prof. Decaisne, in our columns on the subject.

CATALOGUES RECEIVED.

We have received the following Catalogues of Dutch and other Bulbs:—

Messrs. GLUES BROS., 23, Market Street, York.

Messrs. BARR & SON, 12 and 13, King Street, Covent Garden, London, W.C.

Messrs. THOMAS KENNEDY & Co., 106 and 108, High Street, Dumfries, N.B.

Messrs. DOBBIE & Co., Rothesay, N.B.—Pansies Violas, Roses, Fruit Trees, Bulbs.

Messrs. W. SAMSON & Co., and W. and T. SAMSON, Kilmarnock—Roots, Bulbs, and Plants.

MARTIN GRASHOFF, Quedlinburgh, Germany — Novelties in Flowers and French Beans.

Messrs. J. JEFFERIES & SON, Cirencester—Roses.

Messrs. J. CHEAL & SON, Crawley, Sussex—Fruits, Roses, Ornamental Trees and Shrubs, &c.

Mr. J. Yates, Underbank, Stockport—Carnations, Picotees, Pinks, &c. Also a Bulb List.

COMMUNICATIONS RECEIVED—Professor McO., Cape Town.—Spero (next week).—E. C.—W. F. & Sons.—W. E. G.—W. B., Valleyres.—J. A.—P. S. B.—W. R.—J. S.—J. Z.—P. A., Valencia.—M. M., Melbourne.—J. C. S., Menabilly.—B., Toronto.—G. W.—W. J. H.—L. C.—E. M.—W. S.—J. G. L.—C. H.—T. H. S.—H. G.—W. C. & Sons.—W. P. S.—C. W. D.—Dr. Nobbe, Tharand.—Westnik, St. Petersburgh.—Dr. G. Ritter Beck, Vienna.—J. K. B., Haarlem.—W. B.—J. R.—G. W. B. H. P.—C. G.—Winkle.—J. A. C.—R. A. R.—C. E. W. (we cannot advise).—D. R.—Wild Rose.—C. H.—H. B.—J. M.—W. Gollan, India.—H. W. W.—D. C. (next week).—J. F.—C. P. & S.

PHOTOGRAPHS RECEIVED.—P. S. B. (with thanks).

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Established Nearly 30 Years. **MANURE.**

It is now generally acknowledged that this highly concentrated Manure exceeds all others in general fertilizing properties and staying powers, thus rendering its money value at least double that of other Manures.

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" Fareham.

" SIRS,—We have used Standen's Manure for Chrysanthemums, mixed with the mould, when potting their last shift, and an occasional sprinkle over the top of the pots during their growth, especially just before the bud shows. We took last season thirty-one First Prizes, Silver Cup at Portsmouth, £25 Silver Cup, Devizes, and £10. We can highly recommend it for plants, especially Roses, Pelargoniums, Azaleas, Gardenias, and Stephanotis. Our Stephanotis this season we can pick by the gallon, from six to eight pips on each spray."

(Signed) W. & G. DROVER.

" We have used Standen's Manure for some years, and have never found any fertilizer so safe and valuable. Its action is literally 'magical.' We have tried it on unhealthy plants which seemed past recovery, and it has restored them to their natural vigour. However valuable other fertilizers may be, none can be compared to this. Camellias grown in the same pots *for ten years* are as healthy as it just repotted."

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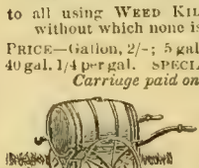
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LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack ; 5 sacks, 25*s.* ; sacks, 4*d.* each.

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COARSE SILVER SAND, 1*s.* 9*d.* per bushel ; 15*s.* per half ton ; 26*s.* per ton, in 2-bushel bags, 4*d.* each.

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GENUINE ORCHID PEAT, 8*s.* 6*d.* per sack; 5 sacks, 40*s.*; BEST BROWN FIBROUS PEAT, 5*s.* per sack; 5 for 22*s.* 6*d.* BLACK FIBROUS PEAT, 4*s.* 6*d.* per sack; 5 for 20*s.* COARSE SILVER SAND, 1*s.* 6*d.* per bushel; 14*s.* half ton; 24*s.* per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1*s.* per bushel. Tobacco Paper, 1*s.* per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, Shell Shingle, Charcoal, Mushroom Spawn, and Russia Mats.

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BAMBOO CANES, 3 feet 10 in., 3*s.* 6*d.*, 5*s.*, and 7*s.* per 100; extra long, 5*s.* per dozen.

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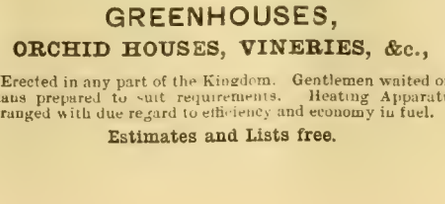
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Mr. A. G. GOODEN, formerly of Offchurch, Bury, as Steward and Gardener to HENRY S. KANNARD, Esq., Shopwyke House, Chichester.

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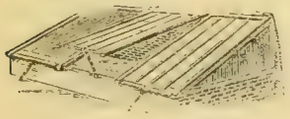
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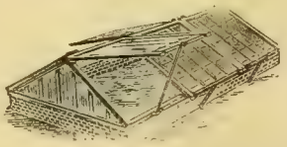


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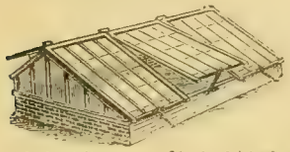
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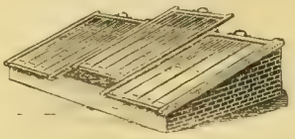


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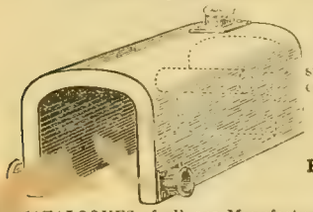
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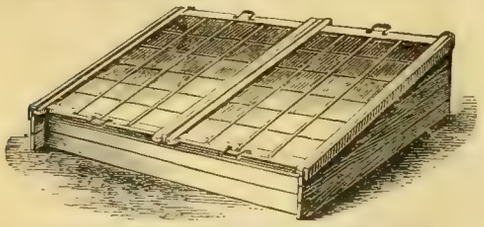
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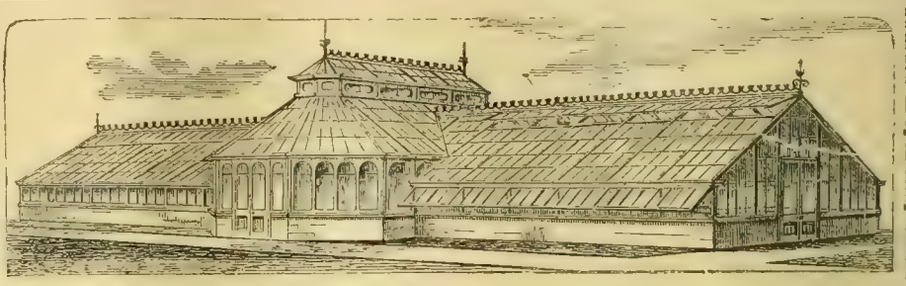
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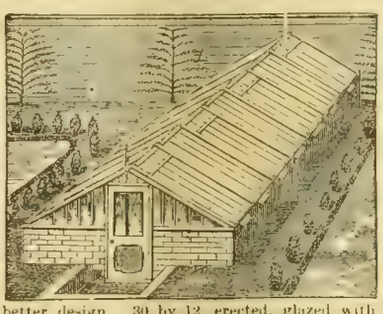
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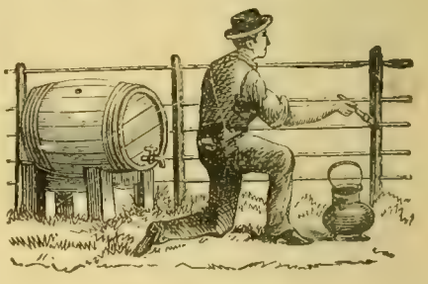


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May be viewed the Saturday and Monday prior to the Sale. Catalogues may be had on the Premises; of H. C. WILKINS, Esq., Solicitor, Chipping Norton; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The valuable FREEHOLD BUILDING ESTATE of 21 acres TO BE SOLD. Apply to the Auctioneers.

Parson's Green, Fulham, S.W.

39,000 EUONYMUS and OTHER STOCK.
Absolute Clearance Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Ash House Nursery, Parson's Green, Fulham, S.W., near Parson's Green Station, on WEDNESDAY NEXT, October 1, at 12 o'Clock, the whole of the general NURSERY STOCK, comprising:—

20,000 Green Euonymus	3,000 Chrysanthemums, various, in pots, and planted out
7,000 Golden and Green ditto, in pots	
12,000 Euonymus, planted out in frames, 3 to 6 inches	4,000 Pteris cretica, in 48 and 32-pots
4,000 Aucuba japonica, 3 in. to 1 foot	500 Ampelopsis Veitchii

May be viewed one week prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Windlesham Nursery, Bagshot, Surrey.

About twenty minutes' walk from Bagshot, and 2½ miles from Sunningdale Railway Stations.

CLEARANCE SALE of exceptionally well-grown NURSERY STOCK growing upon a portion of the Land which has to be given up at Christmas next, by order of Mr. Richard Mason.

Important to the Trade and Large Buyers.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Windlesham Nursery, Bagshot, Surrey, on WEDNESDAY NEXT, October 1, and two following days, at 12 o'Clock precisely each day, an extensive quantity of unusually well-grown and thriving NURSERY STOCK, in excellent condition for removal, including 15,000 Portugal Laurels, 1 to 3 feet; 1000 Cupressus Lawsonii, 3 to 3½ feet; 1000 Thuia Lobbii, 2 to 3 feet; 500 do., 4 to 6 feet; 150 Abies Nordmanniana, 3 to 5 feet; 800 Retinospora obtusa, 3 to 3½ feet; 16,000 Retinospora plumosa aurea, 9 to 15 inches, beautifully coloured, suitable for potting, the best in the country; 400 do., 15 to 18 inches; several thousands of other varieties; Tree Box; 500 Golden Yews, 2 feet; 5800 Laurels, of sorts; 50,000 strong Quick; Green Hollies, 2 to 4 feet; 50,000 bedded Green Hollies; 2000 Berberis Darwinii, 1½ to 2 feet; large Forest Trees, 16 to 20 feet; 500 Purple Beech, 8 to 10 feet; 600 Standard Thorns, of sorts; 15,000 Spruce Firs, 2 to 2½ feet; 200 Spruce Firs, 4 to 6 feet; 1000 White Broom, 3 feet; thousands of hybrid and ponticum Rhododendrons, Azaleas, and other American plants; 600 Standard Farleigh Damsons, 1000 Standard Victoria Plums, Apples, and Cherries; Standard Walnuts; 10,000 Berberis aquifolia, 1 to 1½ feet; and other Stock.

May be viewed one day prior to the Sale. Catalogues had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

NOTE.—The Auctioneers invite the attention of intending purchasers to this important Sale, the stock being exceptionally well grown. Purchasers can arrange with Mr. MASON for their Lots to be lifted and conveyed to the Railway Station to be forwarded, at the mere cost of the labour incurred and material used.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 3, at half-past 12 o'Clock, a large quantity of ESTABLISHED ORCHIDS, comprising Cattleya Wagneri, Cattleya Trianæ alba, Lælia elegans, Epidendrum Zanthinum, Odontoglossum Schroderianum, O. Krameri, Cypripedium Hornianum, C. Orphanum, Miltonia Bluntii Lubbersiana, Cattleya Reineckiana, and others. Also a fine specimen Cypripedium Spicerianum, with three flower-spikes and about 100 growths.

Also 300 lots of ESTABLISHED ORCHIDS, in great variety; 20 good plants of Phalænopsis.

1000 ODONTOGLOSSUM ALEXANDRÆ, in various sized pots, from Messrs. Sander & Co.'s importations, and nearly all unflowered, together with a quantity of ORCHIDS in Flower and Bud.

On view morning of Sale, and Catalogues had.

Sunningdale.—Without Reserve.

SIX DAYS' ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. C. Noble, who has received from St. John's College, Cambridge, peremptory notice to quit all lands held under them at Christmas next.

Important to Noblemen, Gentlemen, Builders, Fruit Growers, Nurserymen, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, close to the Sunningdale Railway Station, on MONDAY, October 6, and five following days, at 12 o'Clock precisely each day, without reserve, several acres of beautifully grown NURSERY STOCK, carefully prepared for removal, and including 25,000 Rhododendrons, 1 to 4 feet, consisting of named kinds, hybrid seedlings, ponticum, and others all in first-class condition for removal, many thousands of Andromedas, Kalmias, Azaleas and Ericas; 30,000 Laurels, of sorts, 1 to 5 feet; 3000 Portugal Laurels; 4000 Thuia Lobbii, 3 to 5 feet, splendid trees, all lately transplanted and suitable for hedges; 12,000 Thuia americana, 1 to 4 feet; 10,000 Cupressus Lawsonii, 1 to 5 feet; 10,000 Oval-leaved Privet, 1 to 4 feet; 2500 Berberis Darwinii, 1 to 2½ feet; 1000 Green Hollies, 1 to 2 feet, just transplanted. Several thousands of Abies Douglasii, Thuiopsis borealis, Retinosporas, in variety; Austrian Firs, and many others, 4 to 9 feet; very large quantities of Ornamental Trees, adapted for Street, Park, and Avenue Planting, such as Limes, Scarlet Chestnuts, Poplars, Elms, Laburnums, Thorns and others; 10,000 Spruce, Scotch, Austrian, and other Firs, 1 to 2½ feet; 12,000 Standard and Pyramid Fruit Trees; including 2000 Pyramid Pears, 3 to 7 feet; Fruiting Trees of the best leading kinds; Standard and Pyramid Apples, Cherries, Plums and Damsons. Several thousands of Gooseberries; 2000 Webb's Cob Nuts, 1½ to 5 feet; 2500 Fruiting Berberis, 1 to 4 feet; 1000 Purple Berberis, 1 to 4 feet; 2500 Mahonia aquifolia, 9 to 18 inches. Ornamental and Border Shrubs, in great variety; Ivies, Hypericums, and other plants suitable for growing under trees; also a good collection of Flowering Shrubs, comprising Lilacs, Guelder Roses, Syringas, Deutzias, &c.

Luncheon will be provided for intending Purchasers, and arrangements can be made with Mr. NOBLE to lift and forward any Lots to all parts of the Kingdom at the cost of labour incurred and material used.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Isleworth.

GREAT ANNUAL TRADE SALE of GOLDEN EUONYMUS. By order of Messrs. C. Lee & Son.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Wood Lane Nursery, Isleworth, five minutes' walk from Isleworth, and ten minutes' walk from Asterley Park Stations, on TUESDAY, October 7, at 12 o'Clock, 10,000 to 15,000 best Gold and Silver EUONYMUS, 8 inches to 1 foot; many thousands of small SHRUBS grown for boxing, potting, and planting out, consisting of Aucubas, Green and Variegated Cupressus erecta viridis, Cupressus Lawsoniana, Box, Thuias, Retinosporas, Laurels, &c., in great variety.

May be viewed one week prior to Sale. Catalogues may be obtained on the Premises, at the Royal Vineyard Nursery, Hammersmith, W., and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Pine-apple Nursery, Maida Vale.

PEREMPTORY SALE.

IMPORTANT CLEARANCE SALE by order of Messrs. Hooper & Co., Limited, who have acquired a building lease for 99 years of this valuable property.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Pine-apple Nursery, Maida Vale, W., on WEDNESDAY, October 8, and three following days, at 12 o'Clock precisely each day, the whole of the exceedingly choice COLLECTION of GREENHOUSE PLANTS, including a perfectly unique collection of seedling Blandfordias, many thousands of Palms, including Kentias, Latanias, Arecas, &c.; a splendid collection of Orchids, Nepenthus Azalias, Lapagerias, and other Stove and Greenhouse Plants, and a quantity of Herbaceous Plants.

Also the ERECTIONS of 19 capital GREENHOUSES, with several thousand feet of HOT WATER-PIPING, BOILERS, &c.; several PITS and FRAMES; 100 loose SASHES, and UTENSILS in Trade.

May be viewed any day prior to the Sale. Catalogues had on the Premises; of Messrs. HOOPER AND CO., Limited, Covent Garden; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Friday, October 10.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. W. Thompson & Son, of Clovenfords Nursery, Galashiels, to SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, October 10, at half past 12 o'Clock precisely, a choice SELECTION of ORCHIDS, including some unnamed seedling Cypripediums. Further particulars will appear next week.

Horsell, near Woking.

SALE of exceptionally well-grown NURSERY STOCK, by order of Mr. R. Collyer, in consequence of the expiration of lease.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Cart House Lane Nursery, Horsell, near Woking (1½ mile from Woking Station, S.W.R.), on MONDAY, October 13, and two following days, at 12 o'Clock precisely each day, a large quantity of well-grown NURSERY STOCK, comprising 8500 English Yews, beautifully furnished trees—probably one of the best lots in the trade; thousands of Laurels, 1 to 5 feet, in variety; 1000 hybrid and ponticum Rhododendrons, 2000 green and variegated Hollies, 600 specimen Border Shrubs, thousands of Ornamental and Forest Trees, 5000 Apples and Plums.

Particular attention is called to this important Sale, the whole of the stock being unusually well grown, and in splendid condition for removal.

May be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Plumstead.

ABSOLUTE CLEARANCE SALE, by order of Mrs. H. Baker, the Land being required immediately for Building Purposes.

Important to the Trade.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Plumstead Nursery, Plumstead, Kent, on MONDAY and TUESDAY, October 13 and 14, at 12 o'Clock each day, absolutely without reserve, 20,000 PALMS, in 48 and 60-pots, consisting of Kentias, Latanias, Seaforthias, Cocos, and Arecas; 8000 FERNS, in 48 and 60-pots, comprising Adiantum cuneatum and formosum, Pteris in variety, and others; 1000 AZALEAS, amongst them many fine specimens of Fielder's White, invaluable for cutting; large White CAMELLIAS, 1000 Epiphyllums, 3000 Chrysanthemums, 4000 Marguerites and Pelargoniums; 14 GREENHOUSES, 2 PITS, 400 feet 4-inch Hot-water PIPING, 1500 feet 3-inch PIPING; capital Market VAN, nearly new, in splendid condition; Open VAN, CART, and other effects.

May be viewed two days prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Hollamby's Nurseries, Groombridge, Tunbridge WELLS.

GREAT UNRESERVED SALE of VALUABLE NURSERY STOCK recently transplanted and carefully prepared for removal.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, on TUESDAY and WEDNESDAY, October 14 and 15, at 12 o'Clock precisely each day, the valuable NURSERY STOCK, comprising enormous quantities of Coniferæ, ornamental, deciduous, and other shrubs, Standard, Dwarf and Climbing Roses, 90,000 Larch and Scotch Firs, Ash, and Spanish Chestnuts, 20,000 Cupressus Lawsoniana and Thuia Lobbi, 20,000 Quick, 10,000 Rhododendrons, 8,000 Portugal and other Laurels, 3000 Hardy Climbers, established in pots.

The Stock may be viewed any day (Sunday excepted), prior to the Sale. Catalogues may be had at the Nurseries, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, E.C.

East Dulwich.—Wednesday, October 22, 1890.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Seeger & Tropp, to SELL by AUCTION, on their Premises, at East Dulwich, on WEDNESDAY, October 22, 1890, commencing at half-past 12 o'Clock precisely, a large quantity of RARE and CHOICE WELL-GROWN HEALTHY ORCHIDS, many of which will be in bud or flower. Included in the long general List Catalogued, will be found the following:—

- Brassia verrucosa and other varieties, grand specimens.
- Cattleya Fausta.
- Cattleya labiata, the best variety of the old autumn-flowering species; grand plant, 16 bulbs, 10 with leaves, 3 leads, 1 flower-sheath.
- Cattleya intricata maculata, most distinct and beautiful hybrid.
- Cœlogyne cristata Lemoniana, unique specimens.
- Cypripedium Druryi, grand specimen, with 26 growths.
- Cypripedium, all the leading best kinds.
- Dendrobium splendidissimum.
- Lælia elegans alba.
- " " Schilleriana.
- Lælia grandis superba, the true old form, in bud or flower. The varietal name "superba" is appended to distinguish this fine Lælia from the ordinary type more frequently met with.
- Lælia elegans Turneri.
- Lælia Perrini alba, the pure white Perrini, and must not be confounded with L. Perrini nivea, which has a tinge of colour in the lip. Splendid plant, 6 bulbs, 5 with leaves, 1 lead, 1 flower-sheath.
- Masdevallia sceptrum. This belongs to the window-bearing group (Cryptophoranthus).
- Odontoglossum nebulosum candidissimum, the pure white form.
- Oncidium, over 60 species.
- Pleurothallis Roezli, perhaps the finest specimen in existence, with several flower-scapes now pushing.
- Sobralia violacea, grand specimen.
- " Warscewiczi.
- " leucoxantha, fine specimen.
- " virginalis.
- " xantholeuca, three very fine plants.
- Vanda tricolor variety, fine specimen.

The Sale will also include large importations of BRAZILIAN and MEXICAN ORCHIDS in best possible condition, and a great number of established plants in bud or flower.

Messrs. Seeger & Tropp's Orchid Nurseries are within 5 minutes' walk of East Dulwich Railway Station (L. B. and S. C. Ry.), and frequent trains run from London Bridge and Victoria. Plants will be on view the day previous and morning of Sale, and Catalogues obtained on the Premises; also of the Auctioneers at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.

London, West End.

TO BE SOLD, an old established FLORISTS' and FURNISHING BUSINESS—in important thoroughfare.— Particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

Dutch Bulbs.—Dutch Bulbs.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots to suit all buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving weekly from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Monday Next.—Important to the Trade.

15,000 White Roman HYACINTHS, specially lotted to suit the Trade and other large Buyers.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, of DUTCH BULBS, on MONDAY NEXT, September 29, at his Great Rooms, 38, King Street, Covent Garden, W.C.

On view morning of Sale, and Catalogues had.

Wednesday Next.

350 fine Plants of AZALEA INDICA well set with buds, just being shipped from Ghent.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, October 1.

On view morning of Sale, and Catalogues had.

Thursday Next.

A fine lot of ESTABLISHED ORCHIDS, many in Flower and Bud, including some fine forms of Odontoglossums, Oncidiums, Cypripediums, &c., from various private Collections, also an IMPORTATION of about 400 good pieces of CŒLOGYNE PANDURATA, just received in fine condition, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 2, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Thursday, October 16.

ESTABLISHED ORCHIDS, the Property of a Gentleman who is leaving his Residence.

MR. J. C. STEVENS has received instructions to include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 16, a fine COLLECTION of ESTABLISHED ORCHIDS, including Cattleya Skinneri alba, Lælia anceps Dawsonii, Cattleya exoniensis, Odontoglossum excellens, O. Edwardii, and other very rare kinds. This Collection is in very robust health.

On view morning of Sale, and Catalogues had.

Great Orchid Sale.

VANDA SANDERIANA.

A specially grand importation, just home per s.s. *Sachsen*.

MR. J. C. STEVENS has received instructions from Messrs. F. Sander & Co., St. Albans, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 16, at half-past 12 o'Clock precisely, a simply superb lot of this, the finest VANDA, and perhaps the grandest ORCHID ever introduced; some of the masses have as many as eight growths, and all are in simply perfect order and condition for growing. They were brought home under the personal care of Mr. Micholitz, the collector, and they have suffered none of the risks that they are usually subjected to.

CYPRIPEDIUM ROTHSCHILDIANUM, rare and new, in grand order.

CYPRIPEDIUM HAYNALDIANUM, in fine order.

VANDA TERES, established on native wood, in splendid condition.

SACCOLABIUM CŒLESTE, very fine, just received in healthy condition.

AERIDES QUINQUEVULNERUM, CYMBIDIUM EBURNEUM, AERIDES LAWRENCEANA, SACCOLABIUM GUTTATUM, CYPRIPEDIUM INSIGNE, C. species, and several other fine ORCHIDS, imported and established.

On view morning of Sale, and Catalogues had.

Every Thursday.—Dutch Bulbs.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY NEXT, and every THURSDAY throughout the season, at half-past 11 o'Clock A.M., large consignments of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland; also Roman HYACINTHS and Paper White NARCISSUS. Lotted to suit all buyers.

On view morning of Sale, and Catalogues had.

On WEDNESDAY and FRIDAY EVENINGS, at half-past 5 o'Clock, SALES of Choice CUT FLOWERS. Entries invited.

Nursery Stock Sales conducted and Valuations made.

Auction Rooms and Offices, 6, Phillips Street, Birmingham.

Corn Exchange, Truro.—Friday, October 3.

CHOICE COLLECTION of ORCHIDS FOR SALE.

MR. W. J. JOHNS is instructed by the Representatives of the late Rev. Canon Phillpotts, to SELL by AUCTION, at the Corn Exchange, Truro, on FRIDAY NEXT, October 3, at 11 A.M., a choice collection of ORCHIDS in FLOWER and BUD (removed from Porthgwidden for the convenience of sale), comprising: Vanda Sanderiana, Cattleyas in variety, Cypripediums in great variety, including fine specimens of C. insigne Chantini, villosum, aureum, and caudatum; Dendrobiums in great variety, Lælias, including anceps, white, purpurata, Williamsii; Miltonias, Odontoglossums, Oncidiums, Peristerias, Saccolabiums, and others.

And on SATURDAY, October 4, at 11 A.M., at Porthgwidden, a valuable assortment of STOVE and GREENHOUSE PLANTS, &c., including Embothrium coccineum, double Begonias (specially good strain); Rhododendrons, Camellias, Azaleas, large specimens of Eucharis amazonica, fine specimen and other Ferns, excellent specimens of Croton Wiesmanni, and a variety of carefully selected plants, all of which will be found in good condition.

On view morning of Sale. Catalogues can be had on application to the Auctioneer, Truro.

Dated September 15, 1890.

WANTED, a sound, established, SEED, or SEED and NURSERY BUSINESS, in a good Market Town.—M. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED TO RENT, a Nobleman's or Gentleman's GARDEN, with or without Land attached. Would also act as BAILIFF, if required.

Address, W. M., 41, Wellington Street, Strand, W.C.

Island of Jersey.

NOTICE TO SPECULATORS.

FOR SALE in PERPETUITY,

owing to the Proprietor's death,

THE FINE PROPERTY, known as "THE VINERIES,"

situated in St. Lawrence Valley, about 2 miles distance from St. Helier's, formerly the property of Edward Pond, Esq.

The said property, consisting of DWELLING-HOUSE, COTTAGES, STABLES, COACH-HOUSE, about 3000 feet long of GREENHOUSES, HOT-HOUSES, PACKING-HOUSE, FRUIT TREES in full bearing, the whole measuring 11 vergées, 4 perches, 21 feet (5 acres), facing south.

This property is admirably situated in one of the finest localities of the Island, and by its position worth the special notice of speculators.

For particulars and Price, apply to JOHN SYVRET, Solicitor, No. 16, Royal Square, St. Helier's, Jersey.

FOR IMMEDIATE DISPOSAL, a FLORIST and SEED BUSINESS. Sole reason, ill health. Six-roomed House, six Greenhouses in good condition, well heated Pits and Frames. Stock in Trade and all Fixtures. Shop well fitted. Lease sixteen years. To be Sold at a great sacrifice. Genuine, and a good opening for a Fruit Business.

Apply to R. HOLLOWAY, Florist, 87, Dulwich Road, Herne Hill, S.E.

To Gardeners and Others.

FOR DISPOSAL, a SMALL JOBBING BUSINESS, situate main road, near Blackheath. One Greenhouse, span-roof, heated with hot-water, 35 feet long, stocked with Plants. Tools complete.

Apply, H. B., Morland Cottage, Shooter's Hill.

FLORIST BUSINESS, compact; FOR SALE or LET. Main Road. 200 feet Glass; 6-roomed House and Shop; 3 miles from Covent Garden.

9, High Street, West Norwood.

To Market Gardeners, Florists, and Others.

TO BE LET, previous to the Auction Sale of Plants, on October 7, nearly the whole of the very excellent GLASS (about 400 yards lineal), HOUSES, VINERIES, &c., in the grounds adjoining SEAFIELD HOUSE, SEAFORTH, near Liverpool, together with a Gardeners' Cottage, and subject to such conditions as may be had on application to GEO. N. DIXON, Auctioneer, 66, Hanover Street, Liverpool.

TO LET, a well-established NURSERY, about 12 acres in extent, well stocked and in fine condition, situated near a large city.—Full particulars on application to A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Fruit Farm.

TO BE LET, a FRUIT FARM, in Oxfordshire. Apply to Mr. COOPER, Western Elms, Reading, Berks.

A Splendid Opportunity for an Industrious and CAPABLE MAN.

TO LET, with Immediate Possession, a well-established NURSERY and SEED BUSINESS.—Good six-roomed House, five Greenhouses, several Pits, standing on two acres of ground, close to the railway station, in the important market town of Chippenham, where a lucrative trade has for some years past been carried on. Owner now retiring.

Apply to Mr. GARTSIDE, The Nurseries, Chippenham.

Landscape Gardening.

MR. ARTHUR M. KETTLEWELL, LANDSCAPE GARDENER, having great experience in all matters pertaining to the artistic arrangement or re-arrangement of Grounds, IS READY TO UNDERTAKE the Designing and Laying-out of Private or Public Gardens, Parks, Cemeteries, &c. Send for his Manual on the "Art of Landscape Gardening," excellently reviewed by nearly all the leading Gardening Papers, post-free 7*d*.

Address, Titley House, Titley (R.S.O.), Herefordshire.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

NEW DESCRIPTIVE PRICED CATALOGUE

Post-free on application to

THE VINEYARD AND NURSERIES,

GARSTON, near LIVERPOOL.

SPECIAL TRADE OFFERS

Terms nett cash. Packing free.

WHITE ROMAN HYACINTHS, 7*s*. per 100; 4½ to 6 inches, 65*s*. per 1000.

PAPER-WHITE NARCISSUS, 3*s*. 6*d*. per 100; 23*s*. per 1000.

DOUBLE ROMAN NARCISSUS, 3*s*. 6*d*. per 100; 23*s*. per 1000.

LILIUM HARRISII, 5 to 7 inches round, 4*s*. 6*d*. per dozen; 28*s*. per 100.

HYACINTHS, 1st size, named sorts, equal quantities of each colour, 17*s*. per 100; 160*s*. per 1000.

KENTIA FOSTERIANA, fine fresh seeds, 7*s*. per 100; 55*s*. per 1000. Just arrived in fine condition.

NOTE.—Special cut prices, for cash. Cases and packing free.

W. H. HUDSON (of Tottenham), Wholesale Importer of Bulbs, Plants, and Seeds, 199, High Road, Kilburn, London.

Address for telegrams, "AURATUMS." London.

N.B.—An importation of AFRICAN TUBEROSES expected shortly.

FOR SALE, 350 Plants of LATHYRUS LATIFOLIUS ALBA (White Everlasting Pea). Price, £3 the lot. WALLFLOWER PLANTS, "Double German," "Saunders' Blood Red," and "Harbinger," 500 plants, 5*s*.; 7*s*. 6*d*. per 1000.

Address, H. NORTH, Wood Lane, Binfield, Bracknell.

PLANTS for CONSERVATORY and House Decoration.

BOUVARDIAS in bud and flower in 6-inch pots, President Garfield, double, pink; President Cleveland, single, bright scarlet; Alfred Nuna, double, white, 9*s*. per dozen. Also in 3 inch pots, 4*s*. per dozen.

Double white PRIMULA, ready to pot on into 6-inch pots, 6*s*. per dozen.

CYCLAMEN for growing on from our own seed, the very best sorts, in 3-inch pots, 6*s*. per dozen.

CHRYSANTHEMUMS, grand plants for autumn and winter flowering, in 9-inch pots, 2 to 3 feet high, Elaine and Boule de Neige, both white, at 24*s*. per dozen.

GARDENIAS in 6-inch pots, 12*s*. per dozen.

White PASSION FLOWER, Constance Elliot, in 9-inch pots, large plants, 3*s*. each.

White PLUMBAGO for Greenhouse, 4 to 7 feet high, in 9-inch pots, 2*s*. to 3*s*. 6*d*. each.

STEPHANOTIS FLORIBUNDA, Elvaston var., grand plants, 3 to 10 feet high, 2*s*. 6*d*. to 10*s*. each.

ADIANTUM DEORUM in 6-inch pots, grand plants, 9*s*. per dozen.

ADIANTUM CUNEATUM in 6-inch pots, grand plants, 9*s*. per dozen.

LOMARIA GIBBA in 4 and 6-inch pots, this beautiful tree Fern, 6*s*. and 9*s*. per dozen.

Beautiful mixed FERNS in 3-inch pots, 3*s*. per dozen.

Cash from unknown purchasers

COLLINS AND COLLINS, Cumberland Park Nursery, Willesden Junction, London.

FOR SALE, 3000 GENISTAS, in 5-inch pots, at 25*s*. and 30*s*. per 100, good bushy plants. Hay's strain of PRIMULA, in thumbs, at 7*s*. per 100. FERN, 3000 LOMARIA GIBBA, at 5*s*. per 100, out of pots. Cash with order. Post-office Orders payable at High Street, Leyton.

T. BALDWIN AND SON, Edith Nursery, Burchall Road, Leyton.

FERNS! FERNS!! FERNS!!!—Trade offer.

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As a Supplement

TO THE

GARDENERS' CHRONICLE

FOR

Next Week, October 4,

WILL BE

Published an Illustration

OF

BERWICK, SHREWSBURY.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 27, 1890.

GRAPE CULTURE FOR MARKET.*

THOSE who are old enough to carry their memories back thirty, or even twenty years, will be able to recognise how greatly this fruit has risen in commercial value. At the date I mention, you could have counted all the large establishments devoted to the culture of Grapes for market on the fingers of both hands. The prices at which Grapes were then sold retail were quite prohibitive, except to the wealthier classes. It is only reasonable to suppose that large profits resulted to the growers; but when we take into consideration the small structures erected, and the consequent small amount of produce got out of them, I expect the net results were not much better than they are at the present day.

In my younger days, I often had the pleasure and privilege of looking over the famous Garston Vineyard, when Mr. Meredith was at the height of his fame as a Grape grower. It was curious to note how Mr. Meredith gradually developed his houses from small lean-to structures, with borders bricked in and raised entirely about 3 feet above the ground level, to span-roofs covering probably a quarter of an acre of ground. This idea has been still further developed during recent years, until at present we see houses on the ridge-and-furrow principle covering large areas of ground, and capable of producing tons of first-rate Grapes.

Now, the question is, Can we improve on this ridge-and-furrow principle in erecting houses for market Grape-growing? In a house of this kind your training space is confined entirely to the roof of the house. In erecting a house for Grape-growing, our object should be to obtain the maximum amount of training space, and where every leaf will be under the influence of direct light. The kind of house I advocate for free-growing kinds, such as Alicante and Ham-

* [A paper read by Mr. J. Roberts at the meeting of the British Fruit Growers' Association, Brighton, September 11, 1890.]

burghs, is a span-roof—as large as you like—but not less than 100 feet long, by 40 or 50 feet wide. The sides must be carried up in glass not less than eight feet, nor more than 10 feet high. On these sides I would put a roof at an angle of about 35°. I should then wire the house at each end about 16 inches from the glass, and at distances of 5 feet I would carry wires vertically from the roof to within 3 feet of the ground, right through the body of the house from one end to the other. Space must, of course, be left for a pathway up the centre of the house, allowing head-room 6 feet high. You can make a house of this description as large as you please, and you can also build it on the ridge-and-furrow principle, but it will be useless for the method of training I am advocating unless the sides are of the height I mentioned—8 or 10 feet.

The amount of training space gained in a house wired on this principle is nearly threefold over the roof alone, and consequently it trebles the amount of Grapes. I should only advocate this method of culture for free-growing black kinds, as it is not adapted for giving the best results in the culture of Muscats or any choice white kind. Someone may say there would be a deficiency of light under this system of erecting and furnishing a vinery, but you must remember the roof must be kept clear of foliage. All that is wanted to produce good foliage is perpendicular light, and Vine foliage produced 10 feet from the glass is often better, and holds its vitality longer, than when grown within 2 feet of the glass. With a clear pathway through the centre of the house, you will be able to step into each avenue of foliage, and much of the details of culture will be easily attended to without the aid of steps and other hindrances. It will require a large number of Vines to plant a house of this description, and as I have commenced with the structure first, I will go on and describe the planting, before I refer to soils and other matters necessary to secure success. In my own practice, I have always planted a double set of Vines, every alternate plant being a supernumerary, to be cut out or regrown after it has served the purpose for which it was planted. I plant at 2 feet, which allows the permanent Vine 4 feet of space. For planting purposes, I like a well-ripened yearling cane that has never been checked in its growth beyond the stopping necessary to keep it short-jointed. I have an objection to planting Vines in a green state owing to the difficulty of getting them ripened at the base or near the border.

In most things a good start is half the battle, but in Vine-growing it is everything, as a young Vine that does not get well away the first season of planting may as well be cast away at once, as they rarely ever make vigorous growth afterwards. The way I deal with the supernumerary Vines is to allow them to have a 10 or 12 feet lead over the permanent Vines. After they have made a growth of from 12 to 16 feet, I stop them, and when once stopped I make them burst the end, or what would be the dormant winter bud. This strengthens and solidifies them considerably, and at the same time keeps them short-jointed, and brings them into an early-ripened condition for fruiting. After the first stopping, the process is repeated when an additional 10 or 12 feet of growth has been made. This stopping may be necessary several times during the season of growth, according to the strength and vigour of the Vines. The permanent Vines are treated in exactly the same manner, except that they get their first stopping when 6 or 8 feet of growth has been made. The object with the latter should be to get a well-ripened cane down to the ground. The second season of growth the supernumerary rods would be cut back to the first stopping in the previous year, which would allow from 12 to 15 feet of young rod for fruiting. The permanent rods are pruned to 3 or 4 feet, according to their strength. All the growths on the supernumeraries are rubbed off up to the point where the permanent Vines catch them in height, which would be about 4 feet from the base. This allows the side growths on the permanent rods to have free development. The same system is pursued each succeeding year—that is, the permanent rods are following the supernumeraries until such time as the latter can be dispensed with altogether; or the process can be repeated by cutting down the supernumeraries and giving them a year's growth, and then allow them to fruit again, cutting away a portion of the lower growths of the permanent Vines to give room for the renewed vigour of the old supernumeraries. By adopting this double method of planting, a large house is quickly furnished with bearing wood, and the Vines can be kept in healthy and fruitful condition for many years.

Soils.

A free and healthy root run is an absolute necessity in the production of good Grapes. Formerly, heavy expenditure was often incurred in forming Vine borders, but where a man must get a quick profit on the capital invested in his structures and heating, in fact, the scale on which Grapes are produced at the present day, forbids a man from taking out half an acre of earth, 3 or 4 feet deep, to fill it up again at very heavy cost with turfy loam, which in a few years will get into a condition as unfavourable to free root action as the original bed of soil it replaced.

We have no freer rooting plant than the Vine, but like most other plants it has a partiality for some soils over others, and my experience is that the limestone formation is the most natural soil for the Vine. I have for years past noted the Grapes that have been exhibited at our largest shows, and have found that the man who holds his own best and longest is situated on the limestone; in fact, a man who could not produce the finest samples of Grapes on such soils, ought to make way for a better man. Very well, if a man is about to embark on a large scale in Grape growing, he cannot do better than fix himself on the limestone, and if there is a colliery and railway station near, then he has the principal conditions necessary to ensure success. This limestone soil is not an absolute necessity, as we see Vines growing and thriving in in the most diverse soils. The question is, how to improve and render what appear unsuitable into suitable soils. Wherever there is found 2 feet or so of average soil, not too heavy nor too light, we may hope by bringing our knowledge of the laws that govern free root action, to bring it from a sterile condition into one abounding in fertility. Many years ago, I remember the question asked in the *Journal of Horticulture*, What makes roots grow? and the answer was "Air." Shortly afterwards a gentleman asked how that could be possible, when he had a Vine growing in a solid MacAdamized road, and this Vine he described as being in the most robust health. It did not strike him that in such a mixture as MacAdam there could not possibly be any great cohesion, and it was just such a mass as the air would pass through freely, and every stone would be a pasture ground for every fibry root. I have as a cultivator tried to get at the bottom of things, and if I hold one principle more strongly than any other, it is that aëration is an absolute necessity to healthy underground growth or root action. It generally takes a few years to get thoroughly exhausted land into a state of fertility, but in the case of a piece of ground intended to be covered with a vinery, we must try and do the thing thoroughly at one operation. First, if I could borrow a dozen or two sheep, I would willingly keep them, free of cost, to have the privilege of folding them for two or three weeks on the piece of ground intended for the Vines. I should then have in readiness sufficient horse manure, fresh and full of vitality—not your spent hotbed manure, which is of no value for this purpose—to make a covering over the whole border 18 inches deep. The next process is to trench the whole ground, breaking it up thoroughly, and as the work proceeds I should procure a supply of soot, and also shoddy or rag manure, the latter to be soaked in strong liquid manure, to which has been added some sulphate of ammonia. This shoddy is the finest substitute for turf I know, and is really more lasting. After the whole has been trenched, I should make the surface somewhat fine, as the object now is to get the ground to absorb the ammonia and other fertilisers introduced. Where expense is not feared, I would add with the above some horn shavings, but I really cannot recommend artificial manures at £20 a ton, when good horse manure can be had at 4*s*. After the trenching is finished, the whole should be allowed to gradually subside before planting.

Starting the Vines.

I have already described the structure I approve for growing Grapes for the million, and also the planting. I will now give a few ideas on points I think essential to success. We must start with correct notions on the nature of the Vine. In my practice, I have always treated it as a temperate rather than a tropical plant. Heat, light, and moisture are synonymous with motion in the vegetable kingdom, and these are the points to regulate to get a good start. If we apply too great heat, we shall get too rapid motion; and if we apply too much moisture, we shall get growth without firm tissue. The temperature I like for starting Vines is 50° night and day. As soon as growth appears, 55° is sufficient during the day, and at night 50°. The houses should be freely ventilated from the expansion of the Vine's first leaf, as much of our success depends on the quality and texture of the main leaves. If these are made in an atmosphere overloaded with moisture we need not be surprised if the first scorching day curls them up, and red-spider finishes them. In the early stages of growth, my whole object is devoted to getting all the main leaves up to three or so beyond the bunch of the finest possible substance, and capable of standing sunshine, or volumes of fresh air without injury. This can only be accomplished by very steady forcing, and I am never satisfied if the root-action of the Vines has not commenced when they have made about 4 inches of young growth. Up to this stage the stored-up food in the rods is sufficient to supply the wants of the young growths, but if quick root-action does not take place, you may expect shanking and other evils to follow. When the bunches are visible, I remove all secondary growths below the bunch, and this has a great effect in giving additional substance to the permanent leaves, prevents overcrowding of useless growths, and saves much labour in stopping during the growing season. Good colour, and every other point, including flavour, depends on the sturdy formation of the earliest leaves, and to keep their preservation intact until the crop is removed from the Vines.

Many people treat Vines as though they were stove plants—never satisfied except they are dosing them with pent-up moisture. The very nature of the tendrils of the Vine tells you that Nature has endowed it with the power to stand storms and tempests of wind with impunity. Many growers are very fond of producing what they call an ammoniacal atmosphere in the vinery. In the early stages of growth, I have no objection to this, but the moment the Vines have set, it should never be afterwards applied, otherwise you are sure to lose the bloom on your Grapes. Nothing equals the free air of heaven in keeping up the vigour of vegetation, whether it is in the open or under glass. We can assist Nature indoors by adding further moisture, but I always leave out the ammonia, unless the ventilators are wide open. I have seen many exhibits of good Grapes that were knocked clean out through the polished surface of the berries, telling plainly that too much ammonia had been applied to the atmosphere directly after the setting period.

In training the young growths, they should, as far as possible, be brought in a direct, horizontal position from the main stem; by doing so you secure a much greater surface of foliage exposed to the light than when they are carried in an oblique direction.

Setting.

This is the critical stage in the culture of Muscat of Alexandria, and though the flowers of the Vine are insignificant in appearance, there is every reason

to suppose that the mass of pollen produced during the flowering period is exhausting to the Vine. All the kinds I have recommended for market culture are very prolific in showing bunches, and the Muscat especially so, often showing as many as five bunches on a single lateral. The first operation is to remove all small and ill-shaped bunches, leaving but one, and that the most shapely, on each lateral. This should be done a week or so before the flowers commence to open, so that the bunches left may get the full benefit of the extra strength that will be thrown into them through the removal of unnecessary bunches. With Muscats a night temperature of 70° is necessary, and during the day the temperature should be from 75° to 80°. In the case of Hamburgh and Alicante, a night temperature of 65° will suffice, and the day temperature may rise 10° higher. I ventilate freely early in the morning to get the pollen dry and ripe, and about half-past ten or eleven o'clock, before the stigmas have had time to dry up from the heat of the day, I go carefully over the whole house, and give each bunch a gentle tap to set free the pollen. This operation is repeated every morning for about eight or ten days, and I have never failed to secure a satisfactory "set" by this means. After this operation, the house may be damped without injury to the setting process, but all superfluous moisture should be expelled before nightfall.

Thinning.

Thinning is an operation that requires doing with a bold hand. I do not believe in doing the job twice, so I thin the first time to stand the season. It is necessary to have an idea what your Vines are capable of doing, but if you are sure they are in good root action, then thin them freely, as the reward will be extra fine berries and much less exhaustion of the Vines than if you allowed them to get near the stoning period before the second thinning took place. There is one point in thinning Grapes intended for market, and that is to leave the shoulders of the bunches pretty full, so as to hide the footstalks as much as possible. The advantage of this will be found when you come to send them to the market, as a fine even surface of berries will be the result. My favourite liquid manure is composed of blood manure and soot, with a change occasionally out of the farmyard tank. The blood manure is very quick in its action, and will swell up the berries to a great size. A couple of waterings of weak doses of sulphate of ammonia may be applied during the growing season, but the house must on no account be closed for several hours after the watering, otherwise not only the bloom on your berries but the foliage may get damaged.

Pruning.

This is a simple operation, and, if your Vines are young and in good condition, they may safely be cut in to one eye from the stem; but, if the Vines are old and enfeebled with many years' cropping, then it will be advisable to leave an extra eye to ensure a good show of fruit. Before the final pruning, a partial pruning should take place a month or two after the fruit has been cut from the Vines. This partial pruning is of much value in concentrating the forces into and filling up the eyes required for the next year's crop. When I was an exhibitor of Grapes, I was often struck from year to year how I invariably went to some particular lateral for my exhibit. These laterals had been cut off early in the previous season, and the long time the few eyes left after removing the shoot and bunch had to fill and plump, showed plainly that a rather severe shortening back was highly desirable, and resulted in larger and more shapely bunches the following season.

Shanking.

There are so many causes for this, that I cannot in the limits of this paper enter into them. But there is one cause, and I think it is responsible for more shanking than any other. It is too-rapid forcing in the earliest stage of development. As I said before, the man will be freest from shanking who can, when his Vines have [made] from 3 to 4 inches of growth, feel comfortable from the knowledge that he has got root-action on the move, and here the great advantages possessed by an aërated border come in, as you can with much less time and patience get a start in root growth in an open border than in a border too close and adhesive. I am conscious of many interesting points in Grape growing unnoticed in this paper, but as I wished to direct attention to what I consider the most essential points, I hope I shall at least have set you thinking, and also criticising my remarks if they differ from your own ideas and experiences.

Varieties for Market.

Muscat of Alexandria must be placed first as a market Grape. The price realised for well-grown samples of this Grape rule high at all seasons of the year. Some of the best growers of this Grape send them to market on boards, and with the same care as if they were intended for exhibition at a horticultural show. Young beginners at market Grape growing should, if inexperienced, not start in their first efforts with this variety. It requires a high temperature compared with most varieties, and much care during the setting period.

The next most popular market Grape is Black Hamburgh. It is so free under all conditions, and so accommodating in submitting to forcing at all seasons, that it is the Grape for giving a supply of fruit from March to November. The enormous quantities of this Grape that come into Covent Garden show many varying qualities. Good, well-swelled, and coloured examples carefully packed, always fetch fair prices.

Next to the Black Hamburgh I place Alicante as a market Grape—in fact, it has some advantages over the Hamburgh, especially to the retailer of fruit, as it keeps in presentable condition after being cut much longer than the Hamburgh. The great fault of the Hamburgh for retail work is the rapidity with which the stem and shoulder-stalks of the bunches dry up. Alicante is coming back to be as popular as ever with growers, and I predict that it will yet drive Gros Colmar clean out of the London shops and markets. You need not trouble about any other Grapes beyond the three I have mentioned, as you may with these three kinds have Grapes every day in the year. I may just mention that Gros Maroc has this season been sent into the market in good condition, and where this was the case satisfactory prices were obtained. It remains to be seen whether it will hold its own with the Hamburgh and Alicante.

Marketing.

Packing for market is a point of much importance to the grower. Every basket should be firmly and fully packed, with as little show of footstalks as possible. The surface of the basket should show a solid surface of well-coloured berries. If a salesman has to keep your basket unsold for several days (which is often the case), and you have packed your basket so as to exhibit too much of the stalks of the berries, buyers are quick to note this, and know that when unpacked and exposed for sale in shop windows they rapidly shrink. So cover up the footstalks as much as possible, and you will be doing yourself, and all those through whose hands the fruit have to pass, a favour.

HAIGH HALL.

Mabel Le Norreys, heiress, having brought this estate by marriage to Sir William Bradshaigh, or Bradshaw, traveller and soldier, he shortly after departed for the Holy Land, for the purpose of saving his soul by the slaughter of Saracens, according to the teaching of old times. Hearing of his death, his wife married a Welsh knight, and one day, after that event, a palmer arrived at Haigh Hall. It was Sir William, who knocked the Welshman on the head, and claimed his wife. Two miles from the Hall, just outside Wigan, which bears off the palm as the most smoky town in Lancashire, is Mab Cross, where a newly-restored memorial marks the spot to which, under sentence of the Church, the Lady Mabel daily repaired, walking from the Hall barefooted by way of doing penance for her two simultaneous husbands at home and in the Holy Land. Sir William and his lady now repose in Wigan Church, beneath a time-worn monument, and in Scott's novel, *The Betrothed*, mention is made of this romantic story.

The Flemish style of gardening was long preserved here, and a wood engraving exists where terrace follows terrace, and the grounds are laid out in squares and oblongs of various sizes. The trees are drawn up like battalions of soldiers, facing one another in military array, and one can imagine lords and ladies pacing up and down the walks and alleys, stiff and upright as Poplars, with powdered hair, square-toed shoes, and long waists, in the style of a former century. The existing house was built about fifty years ago by the Earl of Crawford, who derived the estate from his mother, the heiress of the Bradshaws, or Bradshaighs, as it was sometimes spelt. It stands on high ground, commanding a view of thirteen counties, with the Irish Channel and the Isle of Man, and it overlooks the richest coal district of Lancashire. Some years since a summer-house, built of Cannel coal, which abounds here, stood near the Hall. The landscape before the windows of this noble mansion, includes a valley of wondrous mineral wealth. Liverpool would lie within the range of vision if it were not hidden by the boundary range of hills. In the valley between hall and hill are Wigan and Hindley, with their mines and smoke-producing foundries. A canal passes through the park in front with well-wooded banks, and the appearance of the shrubberies behind the house shows that in spite of a smudge of soot, hardy subjects, and especially Rhododendrons, flourish well in this climate.

So large a house would hardly be found here without the minerals that support it, and it would ill become us, therefore, to grumble at the black diamonds of Wigan. One ought rather to rejoice that the trade of this district has again become active after some years of depression. To a certain extent, the horticulture of the Wigan country is not favourably affected—at least in its higher branches—by the business which that town is specially distinguished for. But, on the other hand, the numerous wage-earning class are large consumers of horticultural products. Wigan offers an excellent market for fruit and vegetables, as well as flowers. Smoke and industry are usually closely associated, and gardeners are often found in close connection with them. Some passengers flying through Nottingham by express train on a damp day, when a pall of smoke hung heavy upon it, exclaimed "What smoky town was that?" The next moment the famous gardens of Nottingham came in view, with the numerous glass-houses standing on the small plots of ground—rough in their construction, but admirably managed by working men who devote them to the culture of flowers, and not infrequently of "florists' flowers" of the highest merit. The art of horticulture has made bright many a spot which must, without its aid, have remained dark and grimy.

The Earl of Crawford and Balcarres has, no doubt, much to deplore in the depreciation of the climate at Haigh Hall, but the consolation for what has happened is not far to find, and it may be hoped that neither he nor the other lords of Lancashire—the Earl of Derby at Knowsley and the Earl of Ellesmere at Worsley, for example—will ever allow themselves to be smoked out.

Ivy flourishes here, and it has been used with great effect to cover walls and surfaces extensively at the rear of the house. Since the Hall was built, the stables, standing too near it, have been removed to a more suitable site at a little distance, and old walls and mounds have been concealed by a handsome covering of Ivy, which effectively turns an eyesore into an ornament. The Ivy screens give character to the place. Mr. Johnston, the head gardener,

states that two of the best Apples here are Lord Suffield and Cellini. It is worthy to be noted that a Bellegarde Peach covers a length of wall in one of the houses, extending to 25 feet. Time did not admit of a close inspection of the extensive houses, which includes one 45 yards long devoted entirely to Roses. A snug enclosure with water in the midst, known as the Pond-garden, is embanked with Rhododendrons, including among them the best-named sorts, and offering in this secluded spot, an enchanting spectacle in the blossoming time in June. Conservatories enclose one side of this little paradise, one of them being a Camellia-house, at one end of which is a fine specimen of Todea superba. In another conservatory, 55 feet in length, two remarkable plants of Stephanotis fill the whole space, and twenty dozen flowers had just been cut. So skill and success are not here wanting, though further examples of it must be deferred, as much time would have been needed to note down the details; and in a party of three, two might have been bored. *H. E.*

New or Noteworthy Plants.

Lælio-Cattleya × Proserpine, *n. hyb.**

Lælia pumila is evidently a very promising little species for the purposes of the hybridist, as it has participated in the parentage of several dwarf and very beautiful little plants, in the well-known establishment of Messrs. James Veitch & Sons, at Chelsea. The latest of Mr. Seden's successes is the subject of the present note, and an elegant little plant it is. It was obtained by crossing Lælia pumila Dayana with the pollen of Cattleya velutina. The seed was sown in 1883, and the plant, now flowering for the first time, received an Award of Merit at a meeting of the Royal Horticultural Society on August 26 last. A flower received for description is over 3 inches in diameter, decidedly approaching the pollen-parent in shape, though with more of the colour of the mother-plant, to which latter it also approximates in its vegetative characters, judging by a note received. The lip is strongly stamped with the characters of Cattleya velutina, both in shape, and in the very decided veining, while a few spots on the sepals, and the markings on the margins of the upper part of the petals, also comes from the same source. It is a very distinct and pretty little plant. *R. A. Rolfe.*

Cattleya (labiata) Gaskelliana picta, *n. var.*

The subject of this note is a very striking variety, in the collection of the Right Hon. Joseph Chamberlain, Highbury Moor, Birmingham, of which a raceme has been sent to Kew. The sepals and petals have a ground-colour of the usual lilac shade, but the former are variegated, and veined with light purple, while the latter have each a broad and sharply-defined median band, with a few short radiating branches of the same colour. The lip is normal, except that there are one or two purple streaks on the front lobe. It is very distinct from any other form I have seen, and is quite analogous with Cattleya Trianæ striata, recently figured in *Lindenia*, t. 232, in the arrangement of the colouring. *R. A. Rolfe, Herbarium, Kew.*

Plums!—We are informed, on good authority, that Lord Sudeley has this year grown 400 tons of Plums, which, in the present scarcity of Plums, are worth £30 a ton.

* *Lælio-Cattleya* × *Proserpine.* — Flowers 3 inches in diameter. Sepals lanceolate-oblong, acute, light rose, with darker veins, and a few purple spots. Petals twice as broad, and similar in colour, the upper part with a broad whitish margin, and numerous radiating purple spots and streaks. Lip three-lobed, side-lobes rounded, medium-sized, yellow inside, whiter outside, with rose margins; disc yellow, with red-purple lines; front lobe broadly rounded, obtuse, ground-colour white, partially suffused with light rose, veins crimson-purple, the sides wholly crimson-purple; column white, face with large red crimson blotch, margin of stigma and wings crimson-purple; anther-case dark purple; pollen-masses eight, very unequal.

Plum Culture in Pots.

From a commercial point of view, the culture of the Plum in pots cannot be looked upon with satisfaction. But it is not in all places that everything has to be weighed in this balance, and to such of these, at any rate, we are situated where the Plum crop is precarious; this mode of culture is not without its advantages, particularly in such seasons as the present one, when open air crops are general failures. There are few private gardens of any pretension without their Peach-houses, and Fig-houses, while Cherry-houses are not uncommon; but a house devoted to Plums is not often met with, although the choicer varieties are equally as deserving of this attention. Such kinds as Jefferson, Kirke's, Bryanston Gage, Lawson's Golden Gage, Transparent Gage, Coe's Golden Drop, Reine Claude de Bavay, and Ickworth Imperatrice, are delicious fruits, and when properly treated under glass rarely fail to bear heavy crops, and the three last-named may in this way be ripened to perfection, a condition they do not always reach out-doors. The best kind of house for the Plum is a commodious span, thoroughly ventilated and light, as the trees succeed most satisfactorily when subjected to plenty of air and sun. Our house is, however, hip-roofed, having a walk at the back, and a bed sufficiently wide to take three rows of pyramidal trees, ranging from 6 to 8 feet in height, and correspondingly wide. It is provided with enough pipes to exclude frost, and makes a good place for Chrysanthemums when the fruit is gathered, and the trees are moved into the open air. The pyramidal form of tree is best adapted to pot culture, and young trees of this kind can be obtained at moderate prices, either established in pots or prepared for potting; these should be shifted on as they require root-space, 16-inch or 17-inch pots being sufficiently large for trees of the dimensions above indicated. A suitable compost for the Plum consists of five parts of loam, that of a rather heavy and fibrous texture being the best, one of crushed mortar rubble, together with a sprinkling of bone-meal and wood-ashes; these, thoroughly mixed, should be in a moderately dry state when used, so that they can be well rammed with a blunt-ended stick without becoming pasted. The best time for potting the trees is immediately before their leaves fall. Clean pots should be employed, and care taken that they are thoroughly drained; for although the Plum, when in active growth, requires copious supplies of water, it cannot tolerate stagnation at its roots. As soon as the trees are potted, their pots may be plunged in ashes, where they can be syringed daily until their leaves fall, and remain under the protection of nets (as a protection against birds) until their blossom-buds are prominent, at which time they must be put under glass; and even here it is advisable to protect the trees from the birds, for we have known bullfinches enter the house and work considerable mischief in a few minutes. During the flowering period, sufficient warmth must be maintained in the pipes to prevent the accumulation of damp, the circulation of the air being maintained night and day. Under these conditions the fruit sets thickly, so that usually much thinning has to be done. The only insect we find at all troublesome is the green aphis, and when it attacks trees while they are in blossom, it is very destructive to the fruit. As a preventive to this, fumigation should be resorted to immediately before the blossoms expand; and again subsequently, if found necessary. This is however, seldom needed if the syringe be properly used morning and evening until the fruit commences to ripen, at which time a dry atmosphere must be maintained, and the house thrown open. Should the house be wanted for other purposes after the fruit is set, and the danger of frost is past, the trees may be safely moved to the open air, and plunged in ashes in a sheltered but sunny situation. In training young trees, their shoots should be afforded sufficient space to permit the sun's rays penetrating to the inner parts of the trees, so that both buds and fruit may be fully matured, and for this reason timely attention must also be given to summer pruning. I have said nothing about watering; nevertheless, this is a part in the management of the Plum that calls for considerable attention. Healthy trees readily fill their pots with roots, and require liberal supplies of water, and during the summer months to prevent the soil becoming injuriously dry, it is needful to water three or four times a day, and the use of a rich fertiliser is very necessary in order to produce fruit of fine quality. We have tried various kinds, but drainage from stables, after standing some time in a tank, appears to be the best, and when it is discreetly used, it is of benefit at all seasons of the year, except when the fruit is ripening. *Thomas Coomber.*

The Seed Trade.

Grasses.—Abroad, as at home, grave concern is experienced by those engaged in the work of cultivating and harvesting seeds as to the probable extent and condition of the seed crops. The mild weather, and want of moisture, during the winter of 1889–90 proved unfavourable to the early development of the plants, so that very serious fears were entertained that the crop would be very small; but the prospect brightened considerably during the propitious spring weather, and the yield of some sorts of Grass-seeds proved better than was anticipated. The colour of the seeds is, however, affected by the continued and heavy rains which prevailed during a great part of the summer. Of Agrostis stolonifera, or Fiorin, the Grass-growing districts of Darmstadt have produced a crop that is an average one, and the quality comparatively good; but the demand for this Grass has increased so greatly, that the available supply will scarcely cover a fourth of the requirements. Even the German growers will have to depend upon America for the greater part of the supply; and American reports speak of a very limited crop.

Alopecurus pratensis (Meadow Foxtail) has been harvested in very fair quantities, and the quality is satisfactory, though light, and much care will be necessary in bringing the seeds up to the highest standard of quality. Anthoxanthum odoratum (Sweet-scented Vernal Grass) shows a very fair crop, of good quality. Avena elatior, one of the commoner British Grasses, is harvested a fairly average crop. Cynosurus cristatus (Crested Dog's-tail Grass) has been secured in fair quantities, but the colour of the seed is even poorer than was anticipated.

In reference to Dactylis glomerata (Cock's-foot, or Orchard-grass), the crop grown in New Zealand has not, for many years past, been so small as it is this season; consequently, German dealers will have to depend mainly upon the American supply; but the growers of the latter, aware of the deficiency if the supply from New Zealand, are already demanding high prices. The American crop is, if anything, smaller than was anticipated, and the demand for home consumption has attained such large dimensions, that it is expected there will be but little for European purchasers.

Festuca duriuscula (Hard Fescue), and ovina (Sheep's Fescue), have been harvested plentifully, but the seed is generally much discoloured; any good samples will be certain to command high prices. The fine-leaved form of Sheep's Fescue is a very small crop. F. pratensis (Meadow Fescue) has failed almost entirely in America; and the German supply is even smaller than last season, which was one of the smallest known for years. High prices are certain to rule. Poa nemoralis (Wood Meadow Grass) is a very small crop; the seed discoloured; what there is commands high prices. Poa trivialis (Rough-stalked Meadow-grass) has been harvested in larger quantities than any of the Poas, and moderate prices are expected to rule. Phleum pratense (Cat's-tail, or Timothy Grass) is a small crop, and prices are expected to be high.

Clover.—The crops of Clover seeds have not come

up to the expectation of growers. Red promised exceedingly well in the beginning of the season, and dealers had good hopes of crops of unusual good quality, but continued storms of rain have operated to considerably reduce the probable yield, and unfavourable reports from the Clover-growing districts are to hand. Italy is said to have been more fortunate, and it is expected that a good deal of Italian seed will be sold as the produce of Hungary. American reports show a steady rise in prices, which means scarcity. White Clover is both scarce and dear, but little seed having been produced. Of Alsike Clover, good quality of seed is scarcely looked for, even with improvement in the weather. Of Trifolium incarnatum, and Sainfoin, there are but moderate yields.



The late WILLIAM HOLMES. (See p. 357).

Book Notice.

Sap: Does it Rise from the Roots?

By J. A. Reeves. (London: George Kenning.)

The purpose of the author, he tells us, in the beginning of his book, is to describe certain known facts, to lay before the reader an outline of the theories hitherto advocated, and to show that there is no evidence to prove "that the sap in trees rises at any time; that inorganic matter rises from the soil; that the soil is exhausted by the growth of vegetation; that sap is elaborated in the leaves; that suckers from the roots are injurious." The physiologist and the cultivator will at once see that the author has a hard task before him. It is quite true that contradictory opinions and conflicting statements have been and are held upon several of the points raised by the author, that very little is known for certain, and that very much remains to be done before all the questions relating to the movements of the juices in plants can be solved. It will be understood that the problem is partly physical, partly physiological—physical in so far as concerns the mechanism of the plant, and the forces which set the machinery in motion; physiological in what concerns the plant in action. Some knowledge, therefore, of physics, of chemistry, of vegetable anatomy are essential, and the capacity of applying the principles derived from them to the explanation of the observed phenomena is no less a necessary condition. The author of the work before us attacks, with perfect impartiality, the views of his predecessors, so far as he knows them; he demolishes their arguments to his own satisfaction, and concludes by the assertion that, "instead of water ascending and gases descending, the facts . . . go to prove that the water descends to the roots, and the gases ascend to the leaves, both actions being in strict conformity with the laws of gravitation.

Oppressed, as every physiologist and teacher must be with the unsatisfactory state of our knowledge on the subject, we should gladly hail our author as a guide, if he were able to show satisfactory credentials, and then to substantiate his statements. If we turn to his credentials, we find they are two-fold, consisting of "extracts from the best authorities;" and amongst these, while we find a few whose names carry weight, we find some who at best would only pretend to be compilers; and many others of a very miscellaneous character, whose opinions in such a matter, however honest, are of no value whatever as evidence. The author's references to the literature of the subject are ludicrous, as much for what he has omitted, as for what he has requisitioned.

In addition to these extracts from "the best authorities" and others, from writers who would certainly not claim any authority for themselves, the author lays before the reader a brief record of his own observations and experiments. We fear the physiologist will hesitate as much to accept them in their entirety, as he would to accept the author's literary evidence. In this department we naturally look for evidence of the author's personal knowledge and competence to deal with his subject. We find a great deal of assertion, much adverse criticism, some of which is, no doubt, legitimate; but some of which will fail in its effect from the inability of the author to prove that he is competent to deal with his subject. Take for instance, a passage on p. 48, and consider whether the physiologists would be likely to attach importance to the theories of a writer who can say, "The roots [formed from a Pelargonium cutting] being a hardened or solidified exudation of the sap [!], of course, grow from between the rind and the wood."

It is no wonder that a writer who can thus describe a root, should arrive at a very different conclusion as to root-action from other people. This question of root-action is the one in which cultivators will naturally take the most interest, and the reader perusing the pages of Mr. Reeves' volume, will naturally inquire—What is the use of the roots? So far as we can see from Mr. Reeves' pages, they can be of no use except as supports. If what he tells us be true, there is no need for root-watering at all. Manures are superfluous; root-pruning never needed; the care exercised in transplanting or in potting is so much waste labour.

Leaf-action, again, in the writer's views is reduced

to little more than the absorption of water. Ignoring the teachings of physiologists, and the experiments of botanists, the author says boldly, "The elaborative function so constantly attributed to the leaves of trees appears to be nothing more than elaborated idea (*sic*) unsupported by the least evidence." Clearly the author has not read his Sachs, nor his Vines, nor has he observed to any purpose what happens when Celery is blanched.

Speaking of "suckers," the author's notion of what they really are seems rather vague, while his statement that a healthy tree has no suckers, may be contradicted by the first white Poplar or Elm he may come across.

In fine, whatever the deficiencies in our knowledge of the circulation of juices in plants, and they are great, we do not think that Mr. Reeves' book at all helps us to supply them. His teaching will not commend themselves to the practical horticulturist, while they will most certainly be repudiated by the botanists.

ORCHID NOTES AND GLEANINGS.

CALANTHE VEITCHII.

IN this plant we have one of the finest of decorative Orchids, and this at a time when Orchid blooms are not plentiful, that is, in the period from November till February, and later I have had them in bloom till June. The loss of its foliage just before it comes into flower is a great drawback, but this bareness of aspect may be got over by planting Selaginella denticulata, S. Mertensii, and small spore-raised Adiantum and Pteris in the soil at the present time. The plants bloom with freedom, producing flower-spikes from 3 to 6 feet in height, and bear sometimes as many as fifty blooms on one spike; fifty-four is the most that I have noted on our plants The sepals and petals, as well as the lip, are of a rosy-pink colour. I find that this species of Calanthe is very accommodating, thriving well in suspended baskets and in pots, which, when space is limited, may also be hung up like the baskets near the glass, but bearing in mind that, when so suspended, they will require considerably more water. The temperature of the East Indian-house is that best suited for Calanthes, and I grow mine in the Pine-stove, and as near the glass as may be without touching it. Like some other deciduous bulbous plants, their blooming season comes after the growth of the pseudobulbs is finished.

When growth after flowering is observed, the plants should be potted, and this should be done annually, shaking off the soil and cutting off all the roots before repotting, and as the young growths develop, they will send new roots into the fresh soil. The material I use for potting Calanthes is a fibrous loam, with much of the rough fibre left in it, and leaf-mould with a little peat and rotten manure, mixed well together.

The drainage of the pots should be good. I employ 6 to 8-inch pots, and put from three to five bulbs in a pot; these being the more useful sizes for furnishing purposes, and better than single plants. If finer spikes are desired, the single bulb in a pot is perhaps the best. In potting, fill the pot up with soil, and place the bulb on the top, just making the soil, firm around it, when it will soon make roots and stand erect without support. When grown in baskets, these should be lined with rough pieces of peat, or with flaky moss, before filling them with soil, the pseudobulbs being placed on the top as in pots, and in number according to the size of the baskets. At the finish a little water should be afforded to settle the soil. When Calanthes are in active growth, weak manure-water should be given them once or twice a week. Once the plants are in full growth, and making roots freely, the soil should be kept moist until growth is finished, when less moisture will suffice; and after they have bloomed, they may be kept dry till potting time arrives. *A. Evans, Lythe Hill.*

LÆLIO-CATTLEYA × NOVELTY.

This elegant little plant, originally described as Lælia × Novelty, was originally raised by the late Dr. Harris, of Lamberhurst, from Lælia pumila, fertilised with the pollen of Lælio-Cattleya × elegans. The same cross has since been effected by Mr. Seden, from seed sown in 1881, and plants have been raised, one of which flowered recently in Messrs. Veitch's nursery. In size and colour it has a close resemblance to the original hybrid, but the lip, instead of being entire, is strongly three-lobed. Thus it has derived more of the characters of the pollen-parent than the original cross, which had an entire lip, like that of the seed-parent. Had this cross been raised many times, there would have resulted numerous variations, just as in Lælio-Cattleya elegans, all gradations occur between the entire lip of Lælia purpurata and the three-lobed one of Cattleya guttata, the other parent. It seems, therefore, advisable not to give it a separate name. It is a very pretty little plant. *R. A. Rolfe.*

CRAGSIDE, NORTHUMBERLAND.

DURING a visit to the North, I was agreeably surprised to see the luxuriance of many of the better species of flowering and berried shrubs at Cragside, Rothbury, the residence of Lord Armstrong, where, on a hillside, with little shelter of any kind—a few choice shrubs certainly had a glass shelter round them. On many acres of this exposed garden and pleasure-ground there is no soil, and holes have to be hewn out of the solid rock and filled with soil. Ericas are grown largely, and present a lovely aspect, with such bright-glowing colours as those of E. Alportii, E. coccinea, and E. cinerea which are the varieties chiefly grown; the white form of the latter with the purple of E. Alportii being very beautiful about August and September Pernettyas formed grand bushes, literally covered with their green berries, and some were in full bloom, and these shrubs when the berries are coloured in the winter, must make a grand show, covering as they do, a lot of the ground—many thousands being planted. Doubtless the well-drained position suits these and similar plants. Kalmias do splendidly in the very little soil that is afforded them, and make dwarf, compact growth that is covered with bloom. Gaultheria Shallon, and G procumbens are found in large masses, with immense quantities of berries on both—in fact, I never remember to have seen these plants so well furnished with them.

Rhododendrons are found in large numbers, and consist of choice hybrids, as well as others, and the display in spring and early summer must be a fine one. These shrubs are grouped, and a much better effect is thus obtained than by dotting. Rhododendron ponticum is employed as a background in the most exposed places, the choicer kinds standing in the front. There are some fine groups of Rhododendron amœnum, hirsutum, and other alpine and small-leaved dwarf species. Azaleas grow vigorously, and are found in large numbers, and many of the best varieties are grown, both of double and single-flowered. These plants bloom profusely every year, and are at this date covered with plump buds and healthy-looking foliage. Andromedas in variety are in fine condition; Bryanthus is very pretty for rock-work, and certainly is here seen at its best. There are large masses of Oxycoccus macrocarpus, Cranberry growing in crevices, and covering the rocks; Vacciniums also are here quite at home, and are seen in great quantities and in the most exposed places, fruiting profusely; these plants are used as a ground-covering where other choicer things would not thrive. Polygonum bistorta is used as a carpet under specimen shrubs and trees, and their flowers—pink—are visible at a long distance. Conifers are not found in large numbers, a few Birch, Oak, and others are used, with Austrian Firs, Yews, and Thuias. Hypericums of several species are grown by the thousand; Berberis, Osmanthus, and Ruscus in variety all do well; also Cotoneasters, Cytisus, and Daphne; Euonymus may here be found in perfect condition. Spiræas are planted at jutting corner rocks or near a seat, and must present a charming effect in the early part of the year. Spartium junceum, or Spanish Broom, and the white Portugal, also are made of much use; Veronicas, Vincas, and Clematis grow luxuriantly. There are many other shrubs used that are often treated as plants, that require the shelter of a wall, which are doing beautifully on a south-west aspect, and not sheltered in any way.

Many species of creeping and climbing plants were observed, and in the autumn the tints of the various Ampelopsis must afford a pretty sight. Hardy grasses, Sedums, Saxifragas, and Tropæolums in variety, including T. speciosum are also used with much good effect. Ceanothus azureus, Chimonanthus fragrans, Cratægus pyracantha, Cydonia elegans, and Escallonias were noticed in the healthiest state imaginable. Such things as Olearia, Garrya elliptica, and Ceanothus get a slight amount of shelter from the north-east. These fine grounds are thrown open to the public one day a week, and are at all times accessible to gardeners, who must find much to learn out of the usual routine of gardening. *Geo. Wythes.*

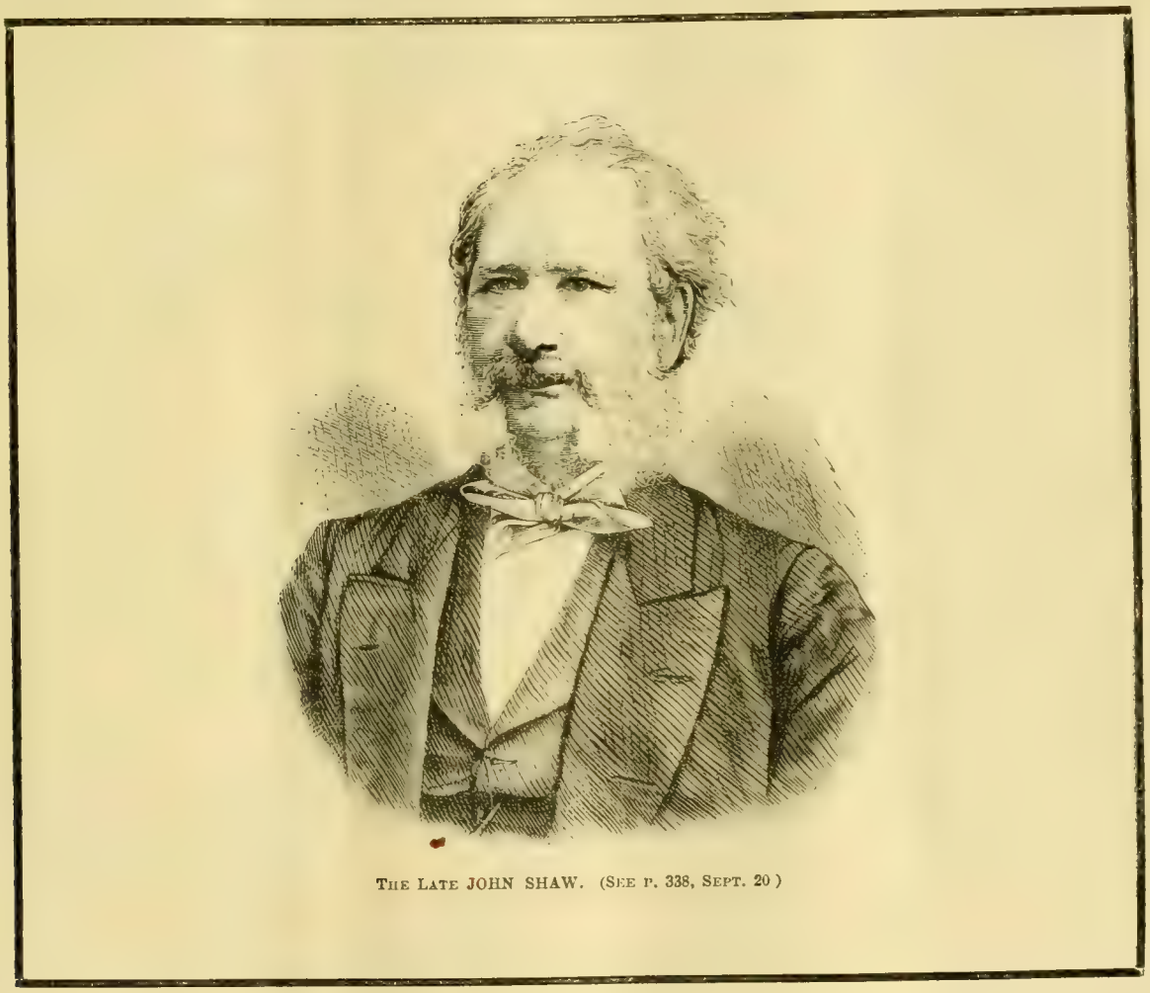
THE BULB GARDEN.

DOUBLE WHITE POET'S NARCISSUS.

IN the spring of the present year, your correspondent, the Rev. C. Wolley Dod, suggested pinching off the tips of the flower-scape of the above variety, and thereby to ascertain if it would in any degree lessen the blindness to which this particular form is more or less liable. Such a suggestion suggests at once that your correspondent attributes the cause of such blindness to certain atmospheric conditions, at present a mystery to many. In consequence of a series of trials which I made a year or two ago, with a view to discover, if possible, a reason for this apparently prevalent blindness, I do not consider it due to atmospheric conditions at all. Prior to these experiments, I had thought that the drying winds or frosts, just as the scape appeared, or perhaps an excessively hot day, had done the mischief, but my trials have proved the reverse. To give it a fair trial, I selected 500 fine flowering, home-grown bulbs, a magnificent sample they were, as may be judged by the fact that bulbs three sizes smaller, were proved by test to be flowering bulbs. This batch were all potted and boxed, as though they were intended for forcing in good rich soil; they rooted away splendidly at once, and remained plunged in coal-ashes that had been exposed for a whole year, until the middle of January, when two boxes, containing about thirty bulbs each, were placed in a cool greenhouse. A fortnight later they were put into a slightly warmer structure, and here they remained, but not a flower perfected of the whole; the growth was vigorous and good, not too quickly made, the scape appeared, and was, as far as could be seen, perfect; but when it was attaining its full height, it failed just as they do out-of-doors. I tried no more in heat; but some I kept in an unheated house were quite as bad. The bulk of them I kept in a brick pit with a north aspect. Air was given daily, and their general wants attended to, with the result that quite 50 per cent. were blind; these were in a position where no sun could reach them, and where the temperature was of a uniform character. The result all-round of this trial showed clearly that they had even a stronger objection to frame culture than to open air; indeed smaller bulbs in the latter produced far better results than the large ones in the former case. I tried Mr. Dod's suggestion as soon as it was made, and as soon as the scape made its appearance, at which time the petals were evidently quite healthy, but in the end they were not an atom better than those left to themselves—some were blind and some were not. Alto-

gether I operated on several hundreds, and the whole affair is a mystery to me; still, appearances generally would point to the scapes alone being at fault, as below the turning point in the flower-stem the stems themselves were quite green and healthy.

At the Daffodil Conference last spring, Mr. Walker stated that blindness could be overcome by annual lifting and good culture, but neither the one or the other is any use in my case, for blind flowers continue to come year by year. I fancy in a decidedly moister and rich clayey soil they would do better, and only lifted every second or third year. Should any of your correspondents have this variety growing in heavy soil, many persons besides the writer would be glad to learn with what results. Dutch grown bulbs are far worse than our own, as one rarely gets a flower at all from the foreigners under two years. *E. Jenkins.* [We have had a few bulbs undisturbed for many years on a cold, clay soil, but have never seen a single perfect bloom. Slitting the spathe in an early state was of no use. Ed.]



The Late JOHN SHAW. (See p. 338, Sept. 20)

THE LIVING EARTH.

(*Concluded from p.* 326.)

The Example of the Chinese.—If great nations are destroyed by neglect of sanitary laws, and if prolonged national life is indicative of sound sanitary measures, there is at least one race upon the globe which is worthy of profound study by all who concern themselves with public health. This race is the Chinese, who have seen all the great nations of antiquity in and out, who were probably a great people in the days of Moses and before, and whose thrifty myriads are even now successfully contending with the Anglo-Saxon race in America and Australasia. The Chinese, as is well known, have had to contend with national calamities of a most stupendous kind. In our own days we hear of floods and famines which claim their millions of victims, and yet the race continues to increase in such a way, and to overflow its natural boundaries to such an extent, that it is certain, even without the exact returns of a Registrar-General, that the birth-rate must very considerably exceed the death-rate, and must have done so in an average way during the 3000 or 4000 years that the Chinese nation has existed. I think there is do doubt that the Chinese will see us out, as they have seen the other great nations of the world out, and the reason, I believe, is obvious. The Chinese are the most thrifty nation in the world. In China nothing is wasted, and all organic refuse is ultimately returned to the soil. Agriculture is in China a sacred duty, and the Chinese have got a firm grasp of the elementary principle, that if the fertility of the earth is to be maintained we must constantly replenish it.

The Soil.

The question of our duty to the soil is fundamental in sanitary matters. If we starve the soil and turn our fertilising materials into the sea, we may rid ourselves (though this is doubtful) of filth diseases for a time; but it is by no means doubtful that we shall ultimately replace filth diseases by those diseases that are bred of starvation. How soon this will happen no one can say, but that it will happen eventually seems to me as certain as is the axiom *ex nihilo nihil fit.* Do not let us commit the great blunder, when dealing with this national question, of forgetting that the life of a nation ought to be measured by centuries; do not let us make a suicidal use of a paltry fifty years' statistics, and because the figures of the last decennium happen to be favourable, conclude that all our sanitary principles are right. Perhaps someone will say, "How ridiculous to hold up the Chinese as an example! The Chinese masses are acknowledged to be exceptionally filthy in their customs and habits." This, perhaps, is true, but I am sure that this audience will not make the error of confounding principles with details. The Chinese principle of returning all organic refuse to the soil is, there can be no doubt, absolutely sound. The Chinese details may be filthy, and susceptible of improvement. In this country the details of our domestic sanitation are refined, elegant, and ingenious. It is the principle subserved by these details which is absolutely rotten. The main problem of sanitation is to cleanse the dwelling day by day without fostering starvation. This can only be done by returning all organic refuse to the soil, and the perfecting of the details by which this duty is to be done is the most important work of the modern sanitarian.

The Duty of Land-owners and Occupiers.

This question is a national one, and concerns us all. Every country squire ought, in these matters, to set a good example to his tenants. If he does not set the example of increasing the fertility of the soil by the daily addition to it of all the organic refuse of his country mansion, he cannot command our sympathy when he goes without his full rent. If a landowner embarks on a great building scheme, he ought to keep the sanitation in his own hands. If a well-known landowner had done this—if he had preserved his autonomy on his own estate, and if he had, by a rational use of the railway, transferred the daily scavengings of his valuable city estate to his broad

acres in Bedfordshire, perhaps his right-of-way on his London estate would not have been confiscated, and perhaps he would not have been obliged to remit 25 per cent. of his Bedfordshire rental. As it is, he allowed the vestry to do his sanitation for him, and by so doing lost his autonomy. Who can see how far the process of confiscation which has set in will ultimately reach? This question has an immediate personal interest for all who derive their income from the soil. I feel sure that the clergy would do well to enforce by example, as well as by precept, the old injunction to "replenish the earth and subdue it." If they do not, they must expect to go without their tithes. Improvement in this direction is only to be attained by rousing the public conscience. So soon as the majority of individuals is impressed with the fact that it is wicked to foul our streams and starve the soil, and that our individual responsibility does not end, even though the fouling and starving be done by a "Board," so much the better will it be for the public health and national wealth. Parliament has compelled us to hand over our responsibilities to public authorities, with the consequence that the individual has lost his liberty and independence, and is drifting into a condition of sanitary imbecility. Let us not forget that the present state of our rivers is the direct result of Acts of Parliament. Let us not forget that Parliament, which wasted its time and our money in passing that most inoperative of all Acts, the "Rivers' Pollution Act," scavenges its own palace direct into the Thames. As though Imperial Parliament could hand over its responsibilities to a Local Board! It is hardly credible that such a condition of things could exist outside the libretto of a comic opera. A respect for the purity of water should be enforced in our board schools and churches; and that powerful party in the State—I mean the temperance party—would do well to devote some of its energies towards ensuring that the beverage which it champions should be in all places a safe one to drink. As it is, one has only to walk about the country to see that our streams and rivulets are universally regarded as receptacles for rubbish and impurities of every kind.

This question I must reiterate, in conclusion, is a national one of the first importance. A nation that fouls its streams and starves its soil is in danger of poisoning and inanition. A nation which imports a great part of its food and a great part of its manure, and systematically and by Act of Parliament throws all its organic refuse into the sea, is undoubtedly living on its capital. Our capital just now is undoubtedly considerable, but we are in a fair way to run through it; and when we have done so, who can forecast the future? *From an address by Dr. Poore.*

Forestry.

CONIFERS IN CUMBERLAND.

The Corsican Pine (Pinus laricio) has been very successfully planted by the skilful wood-manager of an estate in Cumberland, which I visited recently. Trees planted seven years ago, at four years old, are now 20 feet high, and are making a very satisfactory annual growth. It is intended to continue the planting of this variety on a large scale. A point requiring attention by the planters of this tree is, that young plants at the early stages of their growth are slow in acquiring the fibrous roots which are necessary to enable them to lay hold of the ground when they are first planted out. They ought, therefore, to be three times transplanted in the nursery, so that the plants must necessarily prove rather expensive, costing 50*s.* per 1000 at four years old, while the Scotch Fir costs only 15*s.* per 1000 at the age of three years, when it may be safely planted out.

The seed is rather costly, and on this estate it has been the practice to obtain it direct from Corsica. There is now a nice stock of the plants in the nursery three years old, to be planted out during the next two years. It is desirable in this district to plant young trees in February, so as to avoid the frosts and thaws which would pull autumn-planted trees out of the ground. Spring planting has been always found most successful.

The Corsican Pine grows remarkably straight and clean, and free from the heavy side-branches which are characteristic of the Scotch Fir. About 3500 plants per acre are used on this estate, and, like other Conifers, they are "notched" in at a cost of 5*s.* 6*d.* per 1000. The Corsican Pine grows much faster than the Austrian Pine. The Douglas Fir is coming into favour in these parts. Larch succeeds better on the limestones than on the sandstones of Cumberland. The average yearly rainfall is 40 inches.

Some fine Ash trees were lying in the timber-yard of the estate, and this timber is generally worth from 1*s.* 6*d.* to 2*s.* per foot. Larch trees lying near contain 120 to 140 cubic feet each, and Larch usually sells at 1*s.* to 1*s.* 2*d.* per foot. Sycamore is much in favour, selling readily at the Bobbin mills. It is found that the produce of Larch seed grown in Scotland ripens ten days earlier in autumn than foreign seed, and is a week later in commencing growth in spring. *H. E.*

Plants and Their Culture.

The Conservatory and its Supply Pits.—Special attention will be needed at this season, the blooms from plants in the open air being not much longer of use. The choicer stove plants in the show house will shortly require a warmer temperature if they have been there during the summer months, and other hardier plants substituted for them, such as those that have been in the open. Large specimens of Acacias, Abutilons, Camellias, Correas, and New Holland plants should be housed forthwith, not leaving them till the last moment, when a number of others will be demanding attention. An examination for insects, &c., should be made before taking the plants indoors, and a slight dewing over the foliage late in the afternoon during the next few weeks will do much in the way of keeping them healthy and preventing the loss of leaves. This treatment is sometimes found difficult in conservatories with a lot of plants in bloom, but much may still be done in this way with care. Large Camellia plants should be watered with a fertiliser, and occasionally with soot-water. If planted out, some soot sprinkled over the surface once a month, and watered-in, is of assistance to them. Climbers which are permanent inmates should be regulated before bringing in any plants from outside, so that the fullest light may be afforded those plants standing beneath them. Sponge all dirty foliage and shoots, and thoroughly cleanse the structure before proceeding to arrange the plants. Shading-washes on the glass should now be removed. Chrysanthemums of the early-flowering varieties will now be useful, and should be brought into the conservatory. Bouvardias, that were planted out, may be potted up, placed in a cool house, and slightly syringed overhead daily. If desirable, a few may be planted out in a pit, where a temperature of 55° can be maintained throughout the winter, but it is better to keep the plants cool for a short time after lifting them to prevent loss of foliage. Solanums may be lifted, and housed in cold frames.

Richardias (Callas), need similar treatment to Solanums, preserving as many roots as possible, and shading the plants for a few days. The early succession of these plants in pots should be taken indoors, and placed in a light position, damping them overhead daily and affording plenty of water at the roots. Winter-blooming Carnations should be stood in a light pit or house close to the glass. If exposed outside to too late a period, they become subject to mildew. Salvias and others of large growth which were planted out, should be lifted after cutting round the roots a few days before doing so, treating them like the foregoing. Many kinds of shrubs and roots for forcing should be potted up at once, and plunged in the open, and by potting them early a check is given that favours early blooming.

Tea Roses that were forced in the spring will generally be found to have a lot of flower-buds, and the plants if placed in a cold house will be very useful; no heat is necessary at this date. Fuchsias, which have been a long time in bloom, place in the open and keep dry at the roots. A few degrees of frost will not hurt Fuchsias, but the thrips and spider will have been destroyed by housing-time. Young Fuchsias propagated for autumn flower will now benefit by being watered with weak liquid manure.

The old stock plants of Begonias, if potted as advised early in the summer, will now give a quantity of bloom. B. Weltonensis is one of the best at this period. The late-sown Celosia pyramidalis should be placed at the warmest end of the conservatory. Gomphrena globosa—Globe Amaranths, late-sown Rhodanthes, Mignonette, Nicotiana affinis, Browallia elata, and other annuals, are useful in keeping up the supply of bloom till late in the year. Roman Hyacinths will soon be available for placing in this house, that is if they were potted early. A good quantity of Mignonette should now be sown in well-drained pots, in a compost of sandy loam overlying a layer of manure. Small 60's are best for early spring cutting and decorative work. This sowing will be found valuable in the early part of the year, if the plants are sturdy. A good sowing of Schizanthus retusus and pinnatus may be sown, these being charming plants for the conservatory in spring; a cold frame where they will be safe from frost, will suit them for the present. We use small pots, and thin out the seedlings to three in a pot, shifting on into larger pots early in the year. Intermediate and East Lothian Stocks should also be sown for the same purpose, these coming in well for cutting purposes. *G. Wythes, Syon House.*

The Orchid Houses.

East Indian House.—Cypripedium Spicerianum, C. Leeanum superbum, and C. vexillarium, now sending up flower-spikes, will be benefited if watered with weak guano-water occasionally. Cypripediums are gross feeders—this is very noticeable if a few broken bones have been mixed with the pot-sherds, for the roots will be found to be clinging around and about these. Aërides Sanderiana and A. Lawrenceana, now in flower, are among the choicer species; they are strong growers, and have fine spikes of flowers at this season.

Another good Orchid now in flower is Epidendrum dichromum amabile, which, when well done, is admirable. It requires all the heat given to this house, and does well grown in a basket near the roof, where it makes growths nearly as large as those on imported plants. The finest Orchid for flowering at this season is certainly Vanda Sanderiana. When grown in pot or basket, in peat and sphagnum moss, the plant remains in flower in really good condition for three weeks or a month, but I do not consider it good practice to overtax them, and like to cut off the flower-spike in about a fortnight after opening, which affords the plant a chance of recruiting its strength before it rests. They may be kept comparatively dry at the roots, but must stand in a moist house, otherwise they are very apt to shrivel.

Dendrobium bigibbum and its varieties, now coming into flower, like light and heat, being really good growers when their wants are understood. The treatment is very simple that is afforded them here; from the time the plants go out of flower—which, as a rule, is about the end of October—they are kept dry, and close to the roof, and here they remain until the end of April, when water is afforded them as soon as the new growths have pushed an inch or two in length. The same treatment will grow the allied species, D. Goldeii and D. superbiens, to perfection. D. formosum giganteum has usually got the name of doing unsatisfactorily after flowering a year or two, and this is, I believe, caused by the usual winter treatment. If, after flowering is over, the plant is taken to the Cattleya-house, and hung up to the roof, where there is a good circulation of fresh air from the top ventilators, and kept comparatively dry at the roots, it will rest, without losing any of the strength it has stored up in the young growth, but the foliage must not be allowed to fall for want of water. The temperature of the East Indian-house should now not be higher than 70° at night, and the air-moisture should be reduced, or "spotting" will be likely to ensue. *A. G. Catt, Parkfield, Hallow.*

The Hardy Fruit Garden.

Strawberries. — Place frames, hand-lights, or cloches over any plants that are fruiting. These late kinds are fruiting and ripening with us better than usual. Vicomtesse Héricart de Thury, La Grosse Sucrée, and Noble are covered with fruit and blossoms. These are plants which were forced in the spring, and planted out in good time. If late fruit is not required, the flower-stems should be removed. Remove runners from all Strawberry plants, whether established or not, so as to get strength into the crowns, and clear away weeds as fast as they appear. In growing alpine Strawberries, the treatment should differ from that afforded the other species. When I treated them like the latter, I did not get good returns, so I trimmed up the rows alongside the walks and the alleys, leaving the plants to spread as they would, the result being that they are a mass of bloom, and a pleasing picture to look upon in the spring. The fruit harvest is much heavier than before. The Hautbois and an intermediate kind are the most in favour here. To get good fruit, the plants must be well nourished when swelling their fruit. Plantations will now require to be looked over, and gaps made good.

Apples and Pears.—Continue to gather the fruit as it ripens, and place it thinly on the shelves of the fruit-rooms, which should be kept cool, dry, and clean.

Late Plums may be left on the trees for some time yet, such as Coe's Golden Drop, Ickworth Imperatrice, Reine Claude d'Octobre, and Reine Claude de Bravy; but if these fruits are quite ripe, it is best to gather them, and so prevent loss by wasps and rain. The plucked fruit may be placed in a single layer upon the fruit-room shelves, where they will keep good for some considerable time.

Cobs and Filberts, and other Nuts, should be gathered as they become fit, especially if squirrels abound. The Nuts should be spread out on shelves in an airy room, but not divested of their husks, as they look much better on the table in their natural covering.

Medlars.—The most forward of these should be gathered and stored, and not left to be gathered at one time, the supply for the dessert lasting much longer than when the fruit is gathered at once. *A. Evans, Lythe Hill, Haslemere.*

Fruits Under Glass.

Orchard Houses.—The trees in pots required to start early should be top-dressed, or repotted, as may be needed, and stood out-of-doors, such treatment inducing an early rest. Watering the roots is at this season an important matter, and a fairly moist condition of the compost must be maintained, but avoid a saturated state of the soil from rains or other cause. Should scale or other insects be present, as soon as the leaves have fallen naturally, scrub the trees with Gishurst Compound, at the rate of 6 to 8 oz. to the gallon of water, brushing it into every cranny of the bark with a hard painter's brush, not forgetting the young wood and the fruit spurs, but using the solution weaker on these more tender parts of the trees. Late trees will now have their fruit gathered, and time should not be lost in getting them repotted. Old trees occupying pots of the full regulation size, after being thoroughly watered and allowed time to drain, may be turned out and the ball reduced in size. If in good condition, and thoroughly pot-bound, it is a good plan to place the balls in tubs of water until the crocks and some of the old soil can be washed out with a syringe, the roots may then be easily disentangled and cut back. The pots meanwhile should be cleaned and dried, and carefully crocked with clean dry crocks, previous to repotting the trees in fresh soil. Trees in bad condition may in like manner be thoroughly divested of nearly all their old soil, unhealthy roots shortened, repotting the plants into smaller pots, with a view to shifting them when the roots have seized on the new compost. The best compost is the top spit of a meadow of calcareous loam, cut about 3 inches thick, which should be prepared with mortar rubble, charcoal, and crushed bones, some days in advance, and turned over occasionally to thoroughly mix it and check fermentation. In potting, a stout potting rammer should be used with vigour, so as to ensure firmness in the new soil, otherwise when water is applied it will pass through the new and leave the old soil dry, which is a certain precursor of disaster at a later date. When repotting has been done, root action may be set up by returning them to the house for a week or two, afterwards turning them out of doors; but if their leaves should still hang on them, this exposure outside is of no advantage, and they may remain inside if the house be kept sufficiently airy, cool, and moist to prevent the buds getting forward. Trees turned out of doors should be arranged in a thick bed of coal ashes in a sunny place, to remain there for the winter, with protection afforded the pots against damage by frost.

The success of fruit tree growing in pots is bound up in careful attention being paid to a number of details, but nothing will compensate for loose potting or an inadequate supply of water. Where the pot system of growing fruits is pursued, there should always be a reserve stock of young trees to draw upon, and this is easily kept up by buying in a few maiden trees yearly, shifting them periodically, so that they may get well-furnished with roots; this applies especially to Pears, Plums, and Cherries, but Figs, Peaches, and Nectarines may be potted from maidens onwards.

Good varieties for pots are:—Peaches, Alexander, Hale's Early, and Royal George; Nectarines, Lord Napier, Pine-apple, and Elruge; Figs, Negro Largo, Brown Turkey; Cherries, Early Rivers', Black Circassian, and May Duke; Pears on Quince, Williams' Bon, Louise Bonne, Marie Louise, Doyenné du Comice, &c.; Plums, July Green Gage, Kirke's, Jefferson, and Denniston's Superb.

Melons.—Much attention must be given to plants swelling their fruit, to guard against canker and cracking of the fruits, and fresh slaked lime should be applied on the first appearance of the former, repeating the dressing if necessary, whilst a lessened supply of water at the root and in the air of the house is the best remedy for cracking; and the top lights or ventilators must never be quite closed. Keep the bottom-heat up to 80°, maintain a top heat of 70° at night and 80° by day by means of fire-heat. Melons in frames are flavourless after this date.

Cucumbers.—Keep young plants steadily growing, and continue the preparation of fermenting materials. Syringe the plants on fine sunny days only; keep the foliage thin, and avoid over-cropping. Plants expected to supply fruit in February should not be allowed to bear till January. September-sown plants should be potted as required, and trained thinly, plenty of space being allowed for their extension; but there must be no stopping of the shoots. *Wm. Crump, Madresfield Court, Malvern.*

The Kitchen Garden.

Cauliflowers.—Those plants which are to be wintered in frames, or under hand-lights, should not be allowed to remain in the seed-bed till they get weak and lanky, but removed early and planted out, so as to get strength in them. The Walcheren variety is still one of the best for wintering, and with proper treatment it seldom buttons; the plants should be pricked out in frames at 6 inches apart, in good soil, resting on 3 inches of rotten manure, and all made firm before commencing to plant. The lights should not be put on before very sharp weather sets in. When hand-lights are made use of, eight to ten plants may be placed in each, in spring reducing that number to four per light. The surplus seedlings are useful to fill up gaps in the hand-lights or frames, and should be wintered if possible. The land where the hand-lights stand should be well tilled and heavily dunged, and weekly attention will be needful, in the way of loosening the surface of the soil, trapping slugs, &c.

French Beans.—Now that frost may occur at any time during the night, the frame-lights should be made use of, even during the daytime in cool weather; but plenty of air must be afforded them on fine days, and the watering and syringing be done early in the day, so that the plants may get dry by closing time, and no water used that is very cold.

Vegetable Marrows, as soon as ready, Tomatos, and other tender vegetables, should be gathered, in case frost should spoil them. Tomatos not quite ripe, will complete the ripening if placed in a dry vinery.

Chervil.—A small sowing should be made on a warm border, for winter supply. Pennyroyal and other herbs likely to damp off in winter should be divided, and replanted without delay. *H. Markham, Mereworth Castle, Maidstone.*

Fruit Register.

STRAWBERRY THE CAPTAIN.

This is one of Mr. Laxton's best Strawberries, coming in a week after Noble, and of a much better flavour. It has a tendency to throw up successional blossom, and that makes it valuable where there is plenty of labour to keep the early forced plants for a second crop. This can be managed, either by growing them on in the same pots, assisting them by liquid manure, or planting them out rather thickly in the kitchen garden, where they may be netted. Ripe fruit by this means can be obtained from the plants in August. I am aware that most forced Strawberries will do the same sort of thing, but The Captain seems to me the kind most worth attention in this way. I have a splendid "set" here, and the fruit is swelling fast. *J. Rust, Eridge Castle, August* 15.

Obituary.

Mr. William Holmes.—The unexpected death of this well-known figure in metropolitan horticultural circles, took place, as a consequences of diabetes, on the morning of the 18th inst. at his residence at Hackney, at the early age of thirty-eight years. His father, William Holmes, for some time gardener to the late Dr. Frampton, some years ago established himself in business as a nurseryman and seedsman in Wells Street, Hackney, and at his death about twelve years ago, his son just deceased took to the business, having assisted his father for some time previously. In his hands the character of the business underwent considerable change, and as landscape gardener and contractor, our deceased friend secured a considerable amount of work, among other prominent undertakings, he laid out the extensive grounds of Dr. Barnardo's Homes at Barking Side; the gardens on Tower Hill, Vauxhall Park, the Bloomsbury Cemetery at the back of the Foundling Hospital, the grounds at the Cancer Hospital, the Bancroft Schools at Woodford, the Draper's Hall Gardens, &c., Holmes displaying considerable aptitude for this kind of work, and leaving behind him abundant evidence of his ability. (See p. 353.)

About the time he succeeded to his father's business, he became the Secretary of the Stoke Newington, afterwards the Borough of Hackney, Chrysanthemum Society, and which developed more recently, the National Chrysanthemum Society. It is almost entirely due to his enterprise, indefatigable industry, and talent, as an organiser, that the Society has of recent years assumed such proportions, and become so important. His death is a great loss to the Society, occurring, as it does, barely two months previously to the celebration of the Centenary Festival of the introduction of the Chrysanthemum into England, which is announced to take place at the Royal Aquarium on November 11 and three following days. Always careful in the extreme to have things well in hand, he had already, in conjunction with a Special Centenary Committee, arranged much of the details of the forthcoming Festival, which he was extremely desirous should be carried out in the most successful manner.

Like his father before him, Mr. Holmes took a great interest in local matters, and at the time of his death he was a member of the vestry of Hackney, of the Board of Works, of the Board of Trustees, a Director of one of the largest Building Societies in Hackney, the Chairman of the Conservative Association for the Central Division of Hackney, and for a time a member of the Committee of the Gardeners' Orphan Fund, &c. He was also a member of the Floral Committee of the Royal Horticultural Society, and his services were much in request as a judge at Chrysanthemum Shows. He leaves a mother, wife, sister, and family of six children. He was buried in the Abney Park Cemetery on Wednesday last, Sept. 24.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	SEPT. 29	Dutch Bulbs and 15,000 White Roman Hyacinths, for Forcing at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Nursery Stock, at the Gas Fields Nursery, by order of Messrs. G. and W. Steel, by Protheroe & Morris.
TUESDAY,	SEPT. 30	Greenhouse Plants and Glass Erections, at the Friars' Place Nursery, Acton, W., by Protheroe & Morris.
WEDNESDAY,	OCT. 1	Dutch Bulbs, and 500 Azalea indica from Ghent, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Nursery Stock at the Oak House Nursery, Parson's Green, Fulham, by Protheroe & Morris. Sale of Nursery Stock at the Wirdesham Nursery, Bagshot (three days), by Protheroe & Morris.
THURSDAY,	OCT. 2	Valuable Imported and Established Orchids, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	OCT. 3	Established Orchids, at Protheroe & Morris Rooms.
SATURDAY,	OCT. 4	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—54°.7.

The Dahlia and Grape Conferences.

FAITHFUL to its programme of organising exhibitions, which, whilst not excluding the element of competition and healthy emulation, shall make the acquisition and diffusion of knowledge the first consideration, the Royal Horticultural Society has this week held two Conferences and exhibitions. On the first day (Tuesday) Dahlias were the subject of discussion, while at the same time an excellent and representative display was made of the various sections which have been developed by the patient industry of the florist. It is eminently satisfactory to note, as a real mark of progress, the evolution, not of one type of beauty only, but of several. The rigid exclusiveness of former generations of florists has broken down, and floral salvation, as is shown by the Dahlia, and still more by the Chrysanthemum, is less and less bound up within the inflexible limitations of arbitrary and artificial dogmas.

In developing the beauty of a flower, the artist should seize on the indications afforded by Nature herself, and not strive to import into the flower his own ideas as to what constitutes perfection. Nature fashions a flower according to the purpose it has to fulfil in the present, but leaves many indications in the shape of inherited peculiarities, of modifications, and adaptations which were once, perhaps, serviceable, but the significance of which is now lost, as well as of points which may be developed in the future. So an architect in planning a building looks to the purpose it has to fulfil, and then to its appearance. He accentuates and emphasises some features, he endeavours to throw into the background details that are unimportant for his purpose, or which it is desirable to conceal. The florist, now that he is throwing off his old shackles, is consciously, or unconsciously, working on similar lines. Improvement and progress are no longer limited to one stated direction, arbitrary rules are becoming supplanted by rational freedom — taste triumphs over "properties," law and liberty replace the slavish tyranny of routine.

Referring to another column for full details of the exhibition, we may here note, as a novelty, the method of exhibiting groups of cut flowers on raised stands, as practised by Mr. PHIPPEN, of Reading. Some amount of formality is inevitable, and, under the circumstances, even desirable, seeing that such a style of decoration is eminently suitable in connection with architectural features in the adornment of corridors, landings, stair-ways, and the like. Mr. RAWLINGS' collection of seedlings, raised by himself, was remarkable, and shows what may be accomplished by persistent selection. Mr. CANNELL exhibited also a very large number of varieties, which showed the stages through which the flower has passed to its present state. The historical part of the exhibition, however, in so far as regards the original types (fully illustrated in the *Gardeners' Chronicle* for October 4 and 25, 1879), and the literature and iconography of the Dahlia and Grape left much to be desired. If compared with what was done in this way at the Primrose, the Rose, the Chrysanthemum, and the Fern Conferences, the deficiency becomes very apparent.

At the Dahlia Conference, presided over by Mr. H. TURNER, the first paper read was one by Mr. SHIRLEY HIBBERD, on the Origin of the Florist's Dahlia. He traced the history and gradual evolution of the flower, from the time of its first introduction in 1615, till the present, adverting to the fluctuations in its history, according to the varying fashion and caprice of the day. Hazarding the opinion that the diminished stature of the modern Dahlia was the consequence of the propagation of the plant from cuttings, Mr. HIBBERD brought upon himself the protests of Mr. GIRDLESTONE, Mr. WILLIAMS, Mr. CHEAL, and other cultivators, who all attributed the lowered stature to the result of conscious or unconscious selection *ad hoc*.

Mr. HIBBERD was followed by Mr. GIRDLESTONE, who read a paper on the Cultivation of Single and Decorative Dahlias. Speaking of cutting single Dahlias, he said that most people, especially ladies, cut them when too fully expanded. On the contrary, they should be cut before the flower is fully expanded, they will then expand in water, and last much longer. Mr. GIRDLESTONE then gave a list of the kinds he considered best for particular purposes.

Mr. WILLIAMS followed with a paper on the Show Dahlia, in which he alluded to the Dahlia from an æsthetical point of view, and pointed out the necessity of raising a hardier race, the Pomone and Cactus varieties being generally hardier than the show varieties. The fertilisation of the flower, and the details of cultivation were treated of as well as the uses of the flower for garden or indoor decoration.

In the discussion which followed the reading of the papers, Mr. MAWLEY suggested the formation of a catalogue, after the plan of that issued by the Rose Society. Mr. PAUL advocated the raising of an early-flowering race of Dahlias, so as to obviate the disappointment from early frost, so often felt in our treacherous climate.

The votes of thanks were very appropriately proposed by Dr. HOGG, known in the literature of the Dahlia long before he became celebrated as a pomologist; and by Mr. CANNELL, to whom we owe so much in the development of the Cactus Dahlias.

The exhibition of Grapes was something of a disappointment, and shows that some gardeners are more influenced by pocket motives than by intellectual zeal, and the interests of Horticulture. Seeing the great interest that gardeners take in all that relates to the Vine, it was hoped that a representative collection, as good in its way as the wonderful collections of Apples and Pears that have been seen at Chiswick in former years would have been forthcoming, but this can hardly be said to have been the case. It would, however, be unjust not to make special comment on the remarkable exhibit made by Mr. ROUPELL, who entered into the spirit of the schedule more fully than any other exhibitor, and showed an excellent collection of no fewer than twenty-seven varieties of Chasselas and Frontignan Grapes, grown in pots. Of these, Grizzly Frontignan is one of the most remarkable for flavour, July Frontignan the hardiest and best outdoor Grape. Royal Muscadine is the best hardy white Grape. A bunch of Gros Colmar worked on Muscat of Alexandria was shown, the remarkable feature of which is that the ripening of the berries is hastened by as much as three weeks.

The Grape Conference on Wednesday opened more favourably than the previous day's anticipation enabled one to forecast. A large number of additional exhibits, principally of Grapes sent in market packages, arrived from Mr. GEORGE MONRO, and these added considerably to the interest of the meeting, and are noticed in our report. The Conference proper was opened by Dr. HOGG, who briefly explained the objects of the meeting, and expressed some disappointment at the exhibition being, with the exception of Mr. ROUPELL'S exhibits, so much confined to commercial varieties of Grapes, and that the gardeners generally had not more freely responded to the desire of the Council to secure a representative and educational collection.

Mr. FRANCIS RIVERS followed, with a paper on the "Frontignan Grapes," whose refined flavour and easy culture should commend them to the notice of the public, at present too much enamoured of size in preference to quality. He counselled the growth of such sorts as Précoce de Saumur, Early Smyrna, Royal Muscadine, Primavis, and others in pots, removing the roots each year. The paper was appropriately illustrated by Mr. ROUPELL'S very interesting collection, samples of which were passed round in order that the audience (a large one) might be enabled to appreciate the refined flavour and delicacy of these Grapes.

Mr. R. D. BLACKMORE then read his paper on "The Enemies of the Vine," and this proved an intellectual treat of a high order. The paper was quietly read in choicest English, felicitous in epithet, rich in humour, and sparkling with wit. He dealt with almost all the pests known to afflict the Vine, excepting the Phylloxera, of which, happily, Mr. BLACKMORE has no personal experience. Nothing more delightful in its way has been heard at the Royal Horticultural Society since these Conferences were established, and the audience thoroughly relished the quiet humour with which Mr. BLACKMORE detailed his contests with his enemies. As was said by one of the subsequent speakers, the foes against which Mr. BLACKMORE had to contend were by no means unmixed evils, since they served to elicit a paper which can only be described as a literary gem worthy the fame of the author of *Lorna Doone*.

Mr. W. THOMSON, of Clovenfords, then took up the subject of soils and manures for the Vine, dealing with the subject in a sound common-sense fashion, such as might have been anticipated from a practitioner of such long estab-

lished reputation. His denunciation of raw farmyard manure and liquid manure improperly applied were the more significant, following, as they did, after Mr. Blackmore's vigorous process of nailing the fungoid and other enemies to the barn-door.

The best soil for the vine was old turf, cut from a calcareous soil, not more than four inches deep. If there was any suspicion of the presence of wire-worm, the turf should be cut and thrown grass-side down until touched with frost. If clay predominated, there should be added one cart to ten of the soil of old lime and brick rubbish, or burnt clay. Charcoal was an excellent addition to a soil where clay was in excess, but it was costly. In soil in which sand was greatly in excess, a portion of pure clay should be obtained, and after getting frosted it should be mixed with sandy soil, to bring it up to the standard mentioned. With regard to manure, there was only about three per cent. of plant food in farmyard manure. Phosphate manures were most essential if the vine was to be kept in permanent health and fruitfulness. These should be in various stages of solubility; and preference should be given to those obtained from the best quality of bones over those from dissolved coprolites. Care was necessary in using either in a dissolved state, as at times the acid was in excess of what was safe. Potash was an element without which the vine could not bear fruit, and sulphate of ammonia should be represented, but not necessarily in large proportions, as the vine was not dependent on ammonia as many other plants. Sulphate of lime should also be represented, as it had not only a direct beneficial action, but a reflex one, making some of the other ingredients more active.

Mr. Coleman's paper on "Packing Grapes" was taken as read, and the Conference terminated with cordial votes of thanks to the readers of papers and to the chairman. Thus ended a Conference, of which the promise was poor, but of which the performance proved to be excellent.



Fig. 71.—Pancratium fragrans: flowers white.

Pancratium fragrans. — Concerning this plant, Mr. T. Coomber, of Hendre Gardens, Monmouth, says:—"Of the many species of Pancratium, the subject of the present note which was introduced from the West Indies in 1819, is the most commonly cultivated. It is a plant not difficult to manage, and may be increased either by seed or division, but plants strong enough to blossom are obtained in the quickest manner by the last-named means, and the best time to take offsets, or to repot plants, is in the spring immediately before growth commences. The compost which suits the Pancratium is a rich fibrous loam, mixed with a moderate amount of sand, and in potting it should be pressed firmly, and the pots be well drained. If specimen plants are wanted, liberal shifts must be afforded the plants, but large plants are impatient of having their roots disturbed, and blossom most satisfactorily when let alone. In the summer months, water should be afforded the plants rather freely, and diluted liquid manure is of benefit in so far as it enlarges the bulbs; but in autumn the supply should be gradually reduced, and during winter the soil should be kept tolerably dry. Although the Pancratium will succeed in an intermediate temperature, stove heat suits it best, and its foliage and blossom-spikes are more robust where a brisk moist temperature is maintained. Our plants are cultivated with Eucharis amazonica, and subjected to similar treatment to those plants, and each genus does well; they both enjoy the syringe, and need little shade. We have plants of Pancratium

grown from single bulbs, which are in pots of 16 inches diameter, and these plants produce each about 18 flower-spikes in a season, but have seldom more than ten or twelve spikes expanded at any one time. Insects are not very troublesome, and are easily prevented from doing serious injury."

The Late Mr. William Holmes.—On the occasion of the meeting of the Floral Committee of the Royal Horticultural Society, held at Chiswick on the 23rd inst., the following resolution, proposed by the Chairman, William Marshall, Esq, seconded by Mr. Richard Dean, and supported by Mr. Henry Cannell, was unanimously adopted:—"That, having been informed of the death, on the 18th inst., of their friend and fellow-labourer, Mr. William Holmes, the committee desire to convey to Mrs. Holmes and her family a message of sympathy and condolence, assuring them that, by reason of his personal merit and distinguished services to horticulture, the loss of their late associate is by them deeply regretted." Mr. Shirley Hibberd kindly undertook to convey the forthcoming resolution to Mrs. Holmes.

Market versus Private Gardening.—We are reminded by some remarks made in our hearing by an old correspondent of this journal, himself once a gentleman's gardener, on the differences in practice in market gardens and private ones, and how much the gardeners in the latter are wedded to methods which had the sanction of the old authorities in horticulture before gardening for profit had become the essentially commercial business it now is. Market growers have discovered new methods of raising and treating crops which show a considerable amount of departure from the time-sanctioned one. In support of his assertion, our correspondent pointed to the rough-and-ready methods of the market gardener of sowing and growing the Scarlet Runner Bean and the Vegetable Marrow, and contrasted these with the rather elaborate methods the gentleman's gardener very commonly pursues. The former sows or dibbles his Beans in rows 5 feet apart in the open unsheltered field, has no manured trenches, and puts no sticks to the plants, and yet his plants bear earlier than those of the latter by a fortnight, and continues in good bearing to the end of the season. As with Beans, so also with Marrows, these being put out in good ground without any special dressing of manure, or the aid of a pitful of warm dung under them, and the plants begin to bear fruit much earlier and are more fruitful than those in the private garden. The same holds good, he said, with Cabbages, Cauliflowers, Lettuces, and other plants; and in forcing, the market-man is a long way ahead. Some of our correspondents may be in a position to furnish our readers with positive data on these matters, and by so doing, they may be enabled to confer a considerable amount of benefit on the private gardener in the way of lessening his labours whilst attaining equal or better results than hitherto.

"Soils and their Properties."—Under this title, Messrs. George Bell & Sons have published a little book by Dr. Fream, which we heartily commend to the notice of thoughtful cultivators, whether of field or gardens. It deals with the origin and sources of soils from the subjacent rocks, and shows how they are formed by mechanical and chemical agency, not forgetting the influence of bacteria and earth worms. Drainage, natural and artificial; and the temperature, tilth, and other cognate matters are treated on. Within 160 small 8vo pages, it is not possible to deal with these subjects at length, but Dr. Fream may be congratulated on the success and clearness with which he has managed to condense the facts and inferences that are of the most consequence for the purposes of the cultivator.

Germination of the Silver Tree.—The seed-leaves of this tree (Leucadendron argenteum) are sessile, and are remarkable for the presence at their base of a shallow cavity, bordered by a raised edge. In the cavity formed by the two in apposition, the plumule nestles in security, till in process of growth it lengthens into the stem. The seed-leaves or cotyledons are thick, fleshy, and quite glabrous, while the primary leaves show even from the first the silvery pubescence which is so remarkable in the adult plant.

Ammobroma Sonoræ.—This curious South Californian plant, which resembles our Broomrapes, is thus spoken of in the recently-published *Contributions from the United States National Herbarium*:—"Until the present season its host plant has been unknown, but Dr. Palmer has carefully examined into this, and collected two common plants of this arid region upon which it grows. These are Franseria dumosa and Dalea Emoryi. Dr. Palmer wrote that the plant grows in deep sand, the deeper the sand the larger and juicier the plants. The Cocopa Indians gather them for food, which they relish under all circumstances. They eat it raw, boiled, or roasted. The plant is full of moisture, and whites and Indians alike resort to it in travelling as a valuable substitute for water. It has a pleasant taste, much resembling the Sweet Potato. The stems are 2½ feet long, and 1 to 4 inches in diameter, but almost buried, only the peculiar white tops appearing above the sand. The Cocopa Indians call it 'Oyutch.' Col. Gray gave much the same report of this plant. He says the Papago Indians dry the stems and grind them with the Mesquit Beans, forming what they call 'pinole.'"

Flowering of Rhododendron eximium.—In the spring of 1890 there flowered in M. Van Houtte's nursery a specimen of Rhododendron eximium from the Himalayas. This is probably the first time that this species has flowered on the Continent. The flower-spikes were composed of from fifteen to eighteen corollas, of a dark pink colour when first opening, but becoming gradually clearer as they expanded more fully. No doubt this plant will continue to flower, as often when a Himalayan species blooms once, it continues to do so nearly every year. The plant is nearly 5 feet high, and the diameter is over 3 feet; it is growing in quite a small pot.

Rosa rugosa fimbriata ×.—Under this name is figured in the *Revue Horticole* for September 16, a very free-flowering Rose, alleged to be the product of the fertilisation of Rosa rugosa by the pollen of Madame Abel Carrière. It was raised by M. Morlet, of Avon (Seine et Marne). Of other hybrids raised from Rosa rugosa are Madame Georges Bruant, Souvenir de Yeddo, and Monsieur Hèlye.

Mr. R. Greenfield.—Mr. Robert Greenfield, who has been head gardener and bailiff at the Priory, Warwick, for the last eighteen years, has purchased the business of Mr. E. Crump, florist and fruit grower, of the Ranelagh Gardens and Bath-street, Leamington. The removal of Mr. Greenfield will be a distinct loss to the Warwick flower show, as well as other local movements. He was one of the founders of the Horticultural Society, and during the last nine years has collected nearly four hundred pounds in subscriptions, besides acting as treasurer for the last two or three years.

Grafting Orchids.—A correspondent of the *Journal des Orchidées* asks if anyone has tried grafting of Orchids. The Editor replies in the negative, and doubts the utility of the process in any case. It is certainly not work for a nurseryman, but for an experimentalist. As a physiological experiment, we hope to see it done, and can foresee results as interesting and attractive as result from the grafting of Phyllocactus on Pereskia stock. Who knows but that we may have dwarfing stocks for Vandas, stocks for hastening the flowering of Cattleyas and hardy stocks, whereon to graft tender species? Such things may be!

Ordnance Maps.—The public in general is very imperfectly acquainted with the work done by the Ordnance Survey and the magnificent series of maps already published on the scale of 1 inch, 6 inches, and 25 inches to the mile respectively. These maps, of course, are published in separate sheets, but it is possible to obtain such sections as may be needed for any particular parish, and so construct a perfect map of the country around one's residence for 5, 10, 20, or any number of miles. For estate purposes such maps are invaluable, as also for agriculturists, nurserymen, surveyors, engineers, and other classes. A large scale map of the district should hang in every school-room of the country. Mr. Edward Stanford, 26, Cockspur Street, London, the sole agent for these maps, has published an interesting account of the maps, showing exactly what has been published, and how they may be obtained and mounted.

United States National Herbarium.—The authorities of the National Herbarium at Washington have issued, under the title *Contributions*, some notes on the plants collected in the region of the Rio Grande, Texas, by Mr. Neatly. The list is drawn up with notes by the able hand of Professor Coulter, to whom we are indebted for the *Flora of the Rocky Mountains*.

ALDENHAM HOUSE, ELSTREE.

Seventy-five acres of the fine estate of Henry Hucks Gibbs, Esq., at Aldenham, are devoted to gardens and pleasure grounds, and the whole is kept in excellent order, even the more distant parts of the pleasure grounds being kept in garden trim. Extensive works are also being actively carried on for the still greater improvement of the gardens, The ornamental terraces, with their neat, terra-cotta, vase-capped walls are extended and carried back, so as to enclose a large portion of the gardens nearest the mansion. In another part an artificial lake is in course of formation, a massive rustic bridge being already thrown across, and here some massive rockeries are in course of formation, Mr. Pulham, of Broxbourne, being the designer and constructor.

Notwithstanding all these works that are going on, Mr. Beckett keeps the garden in its usual state of perfection; the bedding for which Aldenham has become renowned being this year better than ever, although owing to the bad weather it has cost more attention than usual. The large sub-tropical garden which we noted last year is in grand condition with its large groups of Wigandia caracasana, Solanum robustum, Cannas of various colours, Lavatera arborea variegata, Nicotianas, Ricinus, Abutilons, Melianthus major, and other things cleverly massed in front of the fine Conifers, with which this portion of the garden is planted, and edged with Sedum hispanicum and other low-growing plants.

The prevailing rule is that the bedding shall be different every year, but there is one exception to the rule, made in favour of the oval bed fronting the sub-tropical garden. This is planted with Lobelia cardinalis, Queen Victoria, over a carpeting of Kœniga variegata edged with Echeveria, and the brilliant flowers of the Lobelia on the white and green ground-work, is an object of beauty not easily beaten. On the other side of the sub-tropical garden runs a ribbon-border, consisting of Pelargoniums and other plants, the wavy edge filled in with Golden Pyrethrum and Iresine, and fronting the shrubs in the back ground are Dahlias.

Between this part of the garden and the terrace are some fine specimens of Conifers and various rare deciduous trees, three of the most beautiful being some large Weeping Ash, Copper Beech, and Weeping Lime, this last-named flowering much later than the common Lime, and was till lately in bloom, filling the air with fragrance. Another fine object is the common Berberis vulgaris, which is one of the most beautiful shrubs we have, and yet many gardens

have not an example of it. The geometrical garden was brilliant in colouring, as were the carpet beds on the terrace beside it. Viewed from far or near, the two brightest beds are those that are filled with the old Calceolaria amplexicaulis, which here grows a foot or so in height.

Other fine examples of bedding near at hand are the beds of Grevillea robusta with carpeting of Coleus Verschaffeltii, and an edging of Kleinia repens; the large bed of Lilium auratum standing among plants of Andromeda floribunda; the bed of Hyacinthus candicans and Rhododendrons; the mass of Cotoneaster microphylla with a broad belt of Euonymus radicans and various other combinations, in which the shrubs remain for winter decoration after the summer flowers have passed away. In one instance, a very pretty effect is made by planting a circle of common Privet at the base of a large Elm; the Privet is kept clipped, and it, in conjunction with the tree, has a very charming appearance.

The rockeries, now tolerably well covered with a great variety of Ivies, Ferns, &c., are pleasant places to ramble in, and in convenient places as well as bordering the cross walk of the fine kitchen garden, showy herbaceous perennials, Roses, &c., are planted, the Phloxes being specially fine this year. In the kitchen garden, the flame Nasturtium (Tropaeolum speciosum), after many trials is established, and the covered ways are spread with Clematises, Roses, and all kinds of climbers. These arcades, &c., are novel and good features, which Mr. Gibbs and his gardener make a labour of love to adorn. One of the best improvements that has been made is the doing away with the red ballast walks, and substituting good gravel. The walks at Aldenham now are hard and smooth, and equal to any that we have seen. The ranges of houses are well kept, and neat as ever. Grapes, Peaches, Nectarines, Pines, Melons, and other fruits are excellent, and there is a plentiful show of flowers under glass. One house was full of Gloxinias, Cockscombs, and Ferns; another had Anthuriums, Eucharis, &c.; two had Orchids, with some good things in bloom, the cool Orchid-house contained a good show of Lilium speciosum and album; the Eucharis were in good order; Celosia pyramidalis and the early Chrysanthemums well bloomed. In one of the stoves was noticed a very pretty lot of coloured Crotons. In the matter of outdoor fruits, Aldenham has had better luck than some places, but nothing to boast of. Apricots were plentiful, and ripened well; outdoor Peaches a failure, and Plums few or none. Of Apples and Pears there are enough, with careful using. Some Apple and Pear trees have good crops, but the greater number are bare of fruit.

Home Correspondence.

FERTILISATION WITHOUT POLLEN.—I read with much interest the articles on this subject in the *Gardeners' Chronicle* for August 23, p. 218, and September 13, p. 295, and with regard to the latter there is one remark made by Dr. Bonavia to which I should like to call attention. Speaking of the pollen tubes reaching the ovules, he remarks, that "it is not impossible that, although the tubes may succeed in fertilising some of the ovules, other ovules may be started into growth and development, as simple marginal buds of the carpels, by mere irritation. These would be the parthenogenetic ones, those the directly fertilised ones." Now it occurs to me that the behaviour of seedlings of hybrid origin should throw much light upon this question. In the case of seedlings of any species fertilised with its own pollen, it is impossible to prove whether every mature embryo has been produced as a result of direct fertilisation (as is generally assumed), or whether some of them may not have been produced parthenogenetically, as above suggested. But in the case of hybrids, the conditions are very different. Embryos of hybrid origin generally (almost invariably) bear traces of their mixed parentage almost from the outset, and when the flowering stage is reached, the characters of both parents, in a more or less modified or intermediate condition, are obvious to all beholders. Suppose, now, a capsule of seed be taken from any species which has been developed as a result of pollination by another species, and that capsule contains, in addition to the fertilised embryos, certain others which have been produced parthenogenetically, by the mere irritation, it is highly probable that both might germinate. In this case, the fertilised embryos would be genuine hybrids, easily recognised as such, but it seems to me most probable that the parthenogenetic would be identical with the mother plant in character. It seems in the highest degree improbable that any character could be derived from the pollen parent through mere irritation alone. I do not remember to have met with any notice of instances of hybrid and non-hybrid plants being produced from the same capsule, but if any one else knows of such a case, I hope he will call attention to it. And even then it is possible that some ovules might be fertilised by tubes from the plant's own pollen, and others from those of foreign pollen (supposing both to have reached the stigma), though I believe such a condition of things is of extremely rare occurrence, and for reasons which are pretty well known. One case, which lends a little colour to Dr. Bonavia's suggestion, is the one recorded by Mr. Veitch (*Journ. Hort. Soc.* n.s., vii., p. 35). He remarks:—"I may note that Zygopetalum Mackayi has been crossed with several species of Odontoglossum, and seedlings raised from some of the crosses, but everyone that has yet flowered has proved to be Zygopetalum Mackayi." This has always appeared to me very remarkable and inexplicable. Assuming for a moment that the pollen-tubes in these cases failed to reach the ovules, yet that the irritation were sufficient to stimulate the ovules, and change them into growing buds (notwithstanding their parthenogenetic origin), capable of reproducing the plant in the same way as true seeds (or apparently so), Dr. Bonavia's suggestion seems sufficient to account for the peculiar phenomena. The case would then be perfectly analogous to the cases of Lilium auratum and L. speciosum cited from Asa Gray. I have simply penned this note as a contribution to what appears to me a very interesting question, and as a suggestion for future observers. *R. A. Rolfe.*

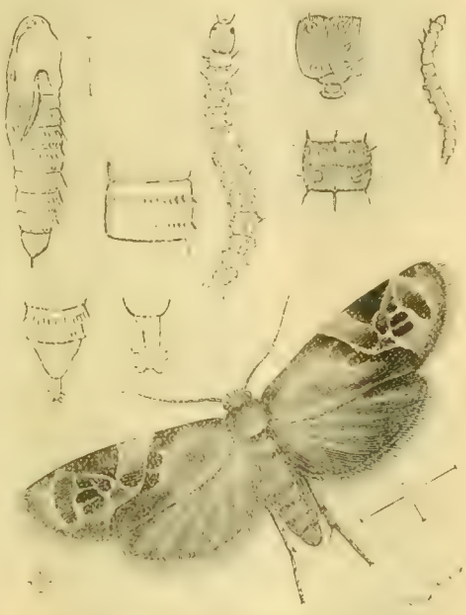


Fig. 72.—Tortrix angustiorana: the vine moth. (see p. 364.)

ASTERS MIXED WITH OTHER FLOWERS.—The dwarf Asters are useful in the garden during August and September, and they may be planted where the taller Asters would not have so good an effect as in the front of borders of herbaceous plants after the herbaceous perennials are past their best. At the margins of Rose beds and borders they are equally useful. I have this year used a good many Asters amongst beds of dwarf Roses, and with good effect, Rose beds not being, as a rule, very bright at this season. The dwarf White Aster among China Roses is a mixture to be recommended. Where a variety of colour is desired, I usually depend upon Asters of the dwarf Chrysanthemum-flowered type, which are dwarf, rarely exceeding 6 inches in height. Our Asters are raised in cold frames, and not in heat as is usual, and are therefore less liable to be spoiled by drawing in the quite young stage, an evil they never get over. *E. M.*

THE COUNTESS MELON.—This Melon, sent out last spring by Messrs. Veitch & Sons, Chelsea, and recommended for its flavour and good cropping qualities, was planted by me in a three-light frame, 12 feet by 6 feet, three plants being put out, from which were cut thirty ripe fruits, varying in weight from 2 to 3½ lb. each. If the season would have allowed it, two of the plants would have produced never another crop of fruit. *E. S.*

HARDY BORDER CARNATIONS.—May I suggest to Mr. Martin Smith that if he still holds to the liberal offer made at the Chiswick Carnation Conference, to give prizes for varieties proved to be thoroughly hardy, that it is time the conditions, under which the prizes are to be given, be framed, and published. To test the constitution of any variety, it is essential that it be planted outdoors, in the open ground, not later than the month of November, and planting-out time will soon be here. But how is proof to be obtained, that any variety submitted for competition has been so tested? Certainly it will not be possible to secure such proof through an ordinary exhibition of the National Carnation Society. As Mr. Smith is a member of the Council of the Royal Horticultural Society, how comes it that he does not place his offer of money prizes at the disposal of the Council, to be awarded, through competent judges, for the best, hardiest, and most striking varieties of Carnations grown at Chiswick during the coming winter, and next year? Nothing would be easier in such case than to secure proof that every variety in competition had been grown in accordance with any conditions Mr. Smith or the Council may prescribe. That would be at once giving encouragement to hardy Carnations at Chiswick, and to those raisers who are not in union with the National Carnation Society as well as those who are. So far, that body has confined its attention to pot-grown plants. At Chiswick, the converse has been the case. The trial of the present year turned out remarkably well, showing that there are many fine varieties that are first-rate for border purposes, whilst it showed also that there are lots of pot varieties useless for border purposes. *Clove.*

FROGS EATING PEAS.—In reply to "W. H. S.," there is, I think, no doubt that frogs are an advantage when found in a garden, as it is a well-known fact that they live on insects, their favourite food being those belonging to the order Coleoptera. The Pea-pods found beneath the rows of Peas were probably emptied by mice—at any rate, not by frogs. *E. Sandford, Dale Park, Arundel.*

WASPS.—After such a dull, sunless summer, one was not prepared to see such a large number of wasps in the autumn. Fruit being scarce, and well-protected, the wasps hereabouts have set up quite a new industry of their own—bug-hunting. I remember the time when we had no bug in the houses; but now, in common with most large gardens, we have quite our share. For several weeks I have seen the wasps looking over the plants, with great assiduity, for what is known as the mealy-bug; up one leaf, and down another, and cutting about in the sunshine as if they had not a moment to spare. I have often seen wasps carry off flies and moths in windy weather, after carefully biting off their victims' wings before starting, lest they should carry too much sail, but this bug-hunting is quite a new phase of usefulness on the part of the wasps. It is well known that green aphis are the milk-kine of the ant; one sees that verified in early Peach-houses in the spring, but this hunting business, of which I speak, is a far more serious affair. There is no gentle persuasiveness about it, but an air of Habeas corpus marks the whole proceeding. *J. Rust, Eridge Castle.*

WASPS AND CARROTS.—The wasps are very numerous in this district, but I have never known or heard of their having eaten garden Carrots before this season. It may interest some of your readers to know such is the case here. I shall be pleased to send you some Carrot crowns which are partly devoured. *W. L., Bath.*

POTATO DISEASE.—The remarks at the end of your paragraph on p. 331 are quite justified: "No

means are neglected to ensure the propagation of the disease." Where I live, the effect of the disease has been terrible—in fact, the entire crop is virtually lost. In most places near by, the dug tubers are decaying on the surface of the land; in other places they have been wheeled to the hedge-sides, and there shot into the shallow drains. Worse than all, farmers have been feeding their pigs with the tainted tubers, and not content with their own supply of diseased Potatos, they have actually sent round to the people who do not keep pigs for the gift of their decaying tubers. Sometimes the diseased Potatos are boiled before the pigs have them, but here the pigs scrump them up raw. *Bedford.*

TOMATO CULTURE.—I do not think "H. P." has much to tell us new or useful in relation to Tomato culture. Certainly it seems impossible that any method of culture can produce finer crops, or handsomer or more perfectly ripened fruits, than are now obtained in such vast quantities in houses of moderate temperature. Excessive heat may conduce to the development of special flavour, but that is exceedingly problematical. Fruits produced in any ordinary house without artificial heat, and in an average temperature of 60°, seem to be as good as it is possible to obtain. I have found that exceeding heat, such as abnormally hot sunshine has created in a Tomato-house, has been adverse to fertilisation. There can be no doubt but that the Tomato needs but comparatively little water at the roots; its ample foliage doubtless absorbs moisture considerably from the atmosphere. Did we allow Tomatos, either indoors or outdoors, to spread about on the ground, as Melons and Cucumbers do, I fear we should have poor crops; and it is very doubtful whether, in the most favoured climes, better crops are obtained in this, or, indeed, in any other way, than are secured here under severely restricted culture. So far as the production of good crops of Tomatos is concerned, we seem to have reached the highest possible point. It is, indeed, difficult to see how plants can produce more abundantly than they do, or have handsomer or richer-coloured fruits. I do not think we should admire those of a blackish-red colour; the preference, rather, is for fruits of a bright rich red hue, and these we get in abundance. Almost the only point in which Tomatos admit of much improvement is in the matter of flavour. We are told sometimes of this or that variety showing high flavour; but it is all nonsense. Good cultivation will produce the best flavour Tomatos of any kind can give. *A. D.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPT. 23 AND 24.—The Grape and Dahlia Conferences were held in the Society's gardens at Chiswick on Tuesday and Wednesday last, when Dahlias were exhibited in very large quantities. Grapes, however, were not so freely shown; but some excellent bunches were displayed. The weather was very unfortunate on the first day, which was devoted specially to Dahlias, for although the day opened fine, rain soon commenced, and towards the end of the afternoon a thunderstorm broke over the spot; this naturally had the effect of keeping away intending visitors, and the attendance was not so large as we had hoped to see. Wednesday's Conference proceedings were in the interest of Grapes, the weather was more propitious, and the attendance on that day was much better. The conservatory, with its crop of Grapes, better than has been for some years past, looked well, and formed a fitting chamber for the exhibits of that fruit from other quarters.

Floral and Orchid Committees.

Present: W. Marshall, Esq., in the chair; J. O'Brien, R. Dean, J. Walker, G. Paul, H. Cannell, H. Turner, W. H. Williams, J. R. Tranter, W. P. Leach, R. B. Lowe, J. T. West, J. Dominy, J. Douglas, P. Blair, J. Cheal, B. Wynne, E. Hill, Ed. Mawley, and Dr. Masters.

The most noteworthy and attractive exhibits before this committee were the very extensive groups of Tuberous Begonias, contributed by Messrs. J. Laing & Sons, Forest Hill, and by Messrs. H. Cannell & Sons, Swanley, Kent, the latter also having a number of the free-flowering white Octavie; while Messrs. Laing also sent a plant of the Chrysanthemum Mrs. Alpheus Hardy.

Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea, sent a few shrubs from their nurseries at Coombe Wood, and other plants. Among the specimens were Sciadopitys verticillata, in cone; Gynerium argenteum variegatum, and the variety with golden variegation, both very graceful, and prettily-coloured leaves; Arbutus unedo rubra, with rose flowers; Abelia rupestris and Magnolia grandiflora; Escallonia montevidensis, with pure white flowers; Desmodium penduliflorum, bearing purple pea-flowers; also Cornus mascula aurea, a pretty ornamental shrub, with variegated foliage; and several trusses of greenhouse Rhododendrons.

Several varieties of Chrysanthemums were well represented in a collection of cut blooms from Messrs. Reid & Borneman, Trewsbury Road, Sydenham. Lily Stevens, a pompon with small white flowers, was very noticeable, while of Madame Desgranges, G. Wermig, and Flora, there were excellent blooms.

Messrs. Harkness & Sons, Bedale, Yorks, sent a collection of hardy herbaceous flowers, all very fresh and bright, among them various Tigridias, especially

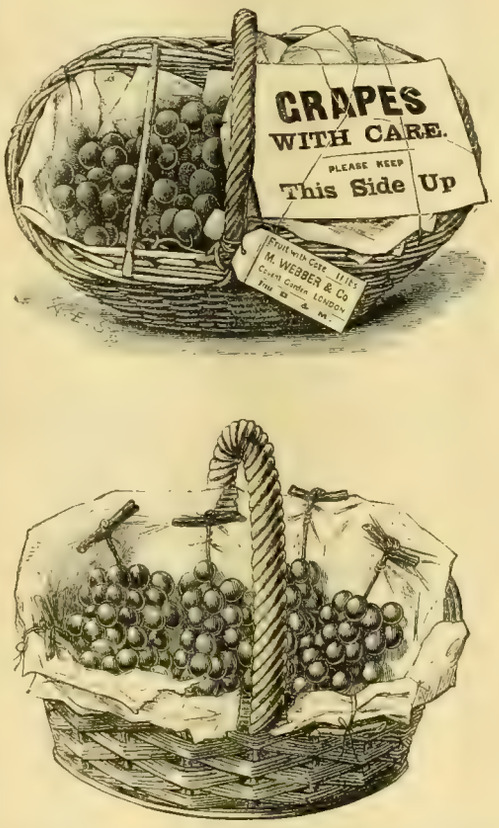


FIG. 73.—GRAPES PACKED FOR MARKET: HANDLE BASKETS.

In the upper the bunches are laid in, and bound over the top; in the lower they are tied to the side. (See p. 363.)

the white variety, looked well on the first day. Pyrethrums, Liliums in several species, double Sunflowers, Chrysanthemums, Phloxes, and Scabiosa caucasica formed the bulk.

Eucomis punctata, and another with flowers of pure green, were staged by Mr. Cummins, gr. to A. H. Smee, Esq., The Grange, Carshalton. From C. B. Powell, Esq., Southboro, Tunbridge Wells, came a few spikes of Gladioli representative of the Lemoinei section, flowering from seed in five months, and a single bloom of the charming Crinum Powelli var. alba.

Mr. J. O'Brien, Harrow-on-the-Hill, N.W., sent a specimen of the Oxalis imbricata fl.-pl., interesting as being a double flower found in a wild state; it is also attractive, having petals of light rosy-crimson.

A well-flowered Rudbeckia grandiflora came from Messrs. J. Carter & Co., High Holborn, W.C.; and from Mr. J. Dadds, gr. to Mrs. Sherard Clay, Comyer's Hill, Ilfracombe, was a fine specimen plant of an Adiantum, shown as A. Daddsii. It is a form with large fronds and rather small pinnules. He also sent a seedling variety of A. cuneatum, with large pinnules and a stiff frond.

The only Orchid submitted was a plant of Lælia Eyermanni, having a scape bearing four pretty lilac-rose flowers; Messrs. Pitcher & Manda, Swanley, Kent, were the exhibitors. An illustration of this supposed hybrid was published in our issue for July 28, 1888, p. 109.

Fruit Committee.

Present: John Lee, Esq., in the chair; and Messrs. J. Willard, G. Wythes, J. Hudson, W. Bates, G. W. Cummins, P. Crowley, H. J. Veitch, J. Douglas, F. Q. Lane, H. Balderson, R. Hogg, Alex. Dean, John Laing, G. Bunyard, and J. Cheal.

From the collection grown in the gardens of the Society, there were fruits of the leading varieties of Tomatos; also Capsicums, Aubergines, and Egg-plants. Several excellent dishes of Apples, some from trees grown under glass, were also shown, among them being Cox's Orange, Kerry Pippin, Hoary Morning, and Cellini.

Fruits of an Apple named Marie's Pippin were exhibited by Mr. L. Castle, 171, Fleet Street, E.C., but as they were not in condition, nothing can be said of the variety.

Mr. W. Palmer, Thames Ditton House, Thames Ditton, sent a couple of excellent Hero of Lockinge Melons, from plants grown in pots; and seedling varieties were shown by Messrs. J. Carter & Co., Mr. Wythes, and others.

A seedling Apple, Chorister Boy, a handsome fruit, came from Messrs. Keynes, Williams & Co., Salisbury; and Mr. Miller, Ruxley Lodge Gardens, Esher, staged some splendid fruits of Peach Barrington, gathered from trees having an eastern exposure.

Dahlia Exhibition.

SEPT. 23.—It is rarely that such an exhibition of blooms of Dahlias, as that seen at Chiswick on the above date, could be produced of such fine quality during the third week in September. Many of the show varieties were exquisite, and though a few were rough, the average of quality was high. The Dahlia cultivators rallied well to the call of the Royal Horticultural Society, and so far as types are concerned, the show was a success.

A large tent was filled with Dahlia blooms, the overflow being placed in the large vinery where the Grapes, &c., were on exhibition.

On this occasion the Committee of the Dahlia Conference was invited to sit with the Floral Committee, and assist in dividing the awards amongst competitors in the Conference classes.

The leading class in the schedule was for a collection of Dahlias of all kinds, and exhibitors were urged to stage their collections together, and arrange the flowers according to type in groups. This mode of staging resulted in some very bold and striking effects. Two leading cultivators, those of Messrs. Keynes, Williams & Co., of Salisbury; and Mr. Charles Turner, Royal Nursery, Slough, entered in this class. All the types, excepting single Dahlias, were in very fine form. These nurserymen have ceased to grow the single varieties, partly because they seem to be losing their hold in public estimation, and because they flood their collections of double varieties with pollen, which appears to have a deteriorating effect upon the single seedlings. Both, however, were awarded Silver-gilt Banksian Medals—the highest award made by the committee.

Messrs. Keynes & Co. had ninety-six show, and twenty-four fancy varieties, twelve bunches of Cactus and decorative, and twenty-four bunches of Pompon Dahlias—a very fine collection.

Mr. Turner has 156 show and fancy Dahlias, the latter mixed with the former. Twenty-four bunches of Cactus and decorative varieties, and the same of Pompons, very fine quality characterising the collection. A Silver-gilt Medal was awarded to Messrs. Paul & Son, Old Nurseries, Cheshunt, for a remarkably fine collection, very strong in the single types; they had thirty-six blooms of show, twenty-four of fancy, forty-nine bunches of Pompon, thirty-two of Cactus and decorative, and forty-two bunches of single Dahlias.

A Silver-gilt Medal was also awarded to Messrs. Laing & Son, Stanstead Park Nursery, Forest Hill, for a remarkably good collection, comprising twenty-four blooms of show and fancy, mixed; nineteen bunches of single, sixty-six of Pompon, and thirty-six bunches of single Dahlias.

A Silver-gilt Medal was awarded to Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, who had a striking collection, consisting largely of bunches of

very fine single varieties, thirty-six in number—twenty-four of decorative, twenty-four of Pompon, twelve show, and twelve fancy.

Silver Floral Medals were awarded to Messrs. H. Cannell & Sons, nurserymen, Swanley, for fifty bunches of Cactus and decorative Dahlias, many of them new, and not yet in commerce. Among these, special mention should be made of Mrs. Douglas, Mrs. H. Carter, Dr. Peters, Millie Scupham, Cannell's Favourite, and Maid of Kent, all fine and distinct; also bunches of Pompon, single, show, and fancy Dahlias, and illustrations of some species, such as Imperialis, glabra, viridiflora, Merckii, &c., some of which Mr. Shirley Hibberd found very useful in illustrating his paper on the "Origin of the Florist's Dahlia." The same award was made to Messrs. Rawlings Bros., florists, Romford, for a remarkably interesting collection of show and fancy Dahlias, representing the varieties they have raised and sent out of late years. Each variety was kept by itself, and was represented by the following show varieties:—J. T. West, Shirley Hibberd, Mrs. George Rawlings, John Henshaw, Clara, R. T. Rawlings, William Rawlings, J. T. Saltmarsh, Mr. Glasscock, T. S. Ware, Mrs. D. Saunders, William Dodds, Queen of the Belgians, George Rawlings, Mr. G. Harris, Harry Turner, Rev. J. Godday, and George Smith. Fancies: Frank Pearce, Mrs. N. Halls, and Charles Turner. This list includes some of the finest exhibition Dahlias in cultivation. A similar award was made to Mr. T. S. Ware, Hale Farm Nursery, Tottenham, for a number of bunches of Pompons, single, Cactus, and decorative Dahlias; and twenty-four blooms of show varieties. A great amount of material was comprised in this collection, but it was not set up in an effective manner. A Silver Banksian Medal was awarded to Messrs. Dobbie & Co., florists, who brought all the way from Rothesay, twenty-four bunches of decorative and Cactus, thirty-two of Pompon, and twelve of single Dahlias, eighty-four blooms of show and twenty-four of fancy varieties.

Class 2 was similar to class 1, but for amateurs only. Only one collection was forthcoming, that of Mr. J. T. West, gr. to W. Keith, Esq., Cornwalls, Brentwood, and which was awarded a Silver Floral Medal; it comprised forty-eight show, and twenty-four fancy Dahlias, six bunches of Cactus and twelve of Pompon varieties.

Under the head of class 3 for new varieties, seedlings, and miscellaneous, a Silver Flora Medal was awarded to Mr. George Phippen, Oxford Road Nursery, Reading, for thirty-six large shields of Cactus and decorative Dahlias, elevated on stands of varying heights, and intermingled with Ferns and Palms. This was certainly a novel method of exhibiting Dahlias, and though rather formal-looking, it had a nice appearance, arranged on the grass at the side of the tent. A Silver Banksian Medal to Mr. George Humphries, Kington Langley, Cheltenham, for a very fine lot of sixty blooms of show, twenty-four fancy, and twelve bunches each of Pompon and single Dahlias; some very fine Dahlias were in this collection. The same award fell to Messrs. Saltmarsh & Sons, nurserymen, Chelmsford, for sixty blooms of show and twelve of fancy Dahlias; and to Messrs. Heath & Son, nurserymen, Cheltenham, for seventy-two show and twelve fancy Dahlias. Bronze Banksian Medal to Mr. J. Tranter, nurseryman, Henley-on-Thames, for a small collection of show and fancy Dahlias; and also to Mr. W. Salmon, Elder Road, West Norwood, for the same.

New Varieties.—Awards of Merit were made to the following Dahlias:—Eldorado (show), crimson, shaded with purple fine petal, outline, and full high centre; Othello (Pompon), rich bright shaded-crimson, medium size, fine petal, and outline; and The Mikado (Pompon), the petals white on the surface, with slight side edgings of rose, and rosy-crimson reverse, small, very compact, and fine shape. From Mr. Charles Turner.

Comedian (fancy), orange-buff, striped and flaked with crimson, and slight edging of pale mauve—a very distinct and finely-formed variety; and Phœbe (Pompon), bright orange-red, distinct, small, fine shape, and excellent habit. From Messrs. Keynes, Williams, & Co.

Beauty of Arundel (Cactus), of the Juarezi type, crimson, tipped with purple on the older florets—a very fine and striking variety; and Centennial (decorative), large and bold, deep magenta, with maroon side-edgings. From Messrs. J. Cheal & Son.

Melita (Pompon Cactus), a somewhat distinct and novel small-sized flower, much reflexed, crimson, tipped with white. From Mr. T. S. Ware.

Yellow A. W. Tait (decorative), pale yellow, distinct and novel, the points of the petals much notched. From Messrs. H. Cannell & Son, Swanley.

Daisy (pompon), yellow, shaded with Apricot, very distinct and novel, medium size, good form. From Mr. J. T. West.

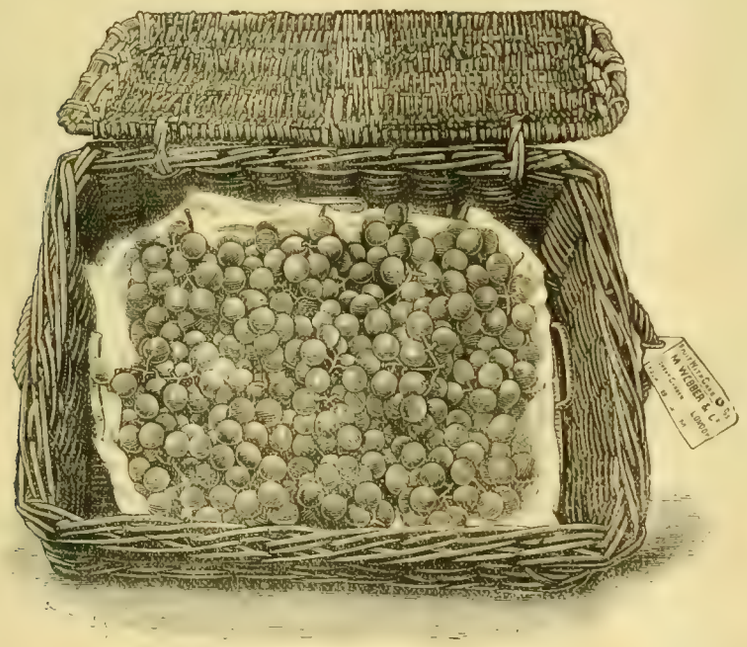


Fig. 74.—Grapes packed for market: a flat.

The Grapes.

The quantity of Grapes sent for exhibition was not so large as it might have been, and doubtless the absence of money prizes had much to do with this, as the fruit is a valuable produce, which is not improved by long journeys. The various classes in the schedule, with a few exceptions, were not well taken up.

One feature was a great attraction, viz., the packing of Grapes for transit and for market, and in the latter class the extensive lot sent by Mr. Monro, of Covent Garden, was an object of much interest on the second day of the show. The bunches, which were generally of superb quality, and showing a splendid finish, were the produce of various growers. There were fourteen "flats" from Mr. J. Sweet, and Mr. P. Kay, Finchley. These are baskets having an inside measurement of 19 by 13 inches, and a depth of about 8 inches, inside of which is another shallow basket, 16 by 12 inches, holding from 12 to 16 lb. of Grapes (see fig. 74). Mr. Sweet's examples of Canon Hall Muscat were truly superb, and Mr. Kay had equally fine bunches of Muscat of Alexandria; his black Grapes, too, were remarkable for their fine finish and depth of colour, Gros Colmar and Alicante being among them, all without spot or blemish. Another method of sending Grapes to market is in "handle-baskets," and large consignments are received from the Channel Islands in this manner (see fig. 73); the basket is well filled, and holds from about 9 lb. up to 12 or 13 lb. Eighteen baskets, representing this method, were sent, being the produce of Messrs. St. Clair, C. Bichard, J. Poat, and J. N. Mansell, and it was noticed that some of the growers marked the label with the name of the variety contained. Handle-baskets, as sent by Messrs. Parrott Brothers, Normandy, Surrey, were also shown, and the packing there adopted is lighter than that used in the Channel Islands, the baskets being larger, although in the weight of fruit contained there is no difference; it is simply that the shaking to which the fruit is subjected on the longer journey necessitates firmer packing. Messrs. Parrott Bros. had finely-formed large berries, and the white varieties were specially good. It is distinctly noticeable that the fruit from Jersey and Guernsey was not so clean as the rest; but before leaving this exhibit, mention should be made of the fine large-berried Gros Colmar from Mr. St. Clair.

Mr. Stephen Castle, manager to Messrs. R. Quertin & Co., Fordingbridge, and Mr. J. Clarke, Farnham, also sent baskets, both adopting the handled sort, a form which has a special advantage, inasmuch as it cannot well be turned wrong side up.

The transit of fruit in small quantities, for home consumption, received attention, and for this a Silver-gilt cup was offered by Mr. Morris. It was stipulated that the boxes or baskets of fruit should be delivered by post or rail, and it does not speak well for the Parcel Post that the two lots sent by that means arrived in a terribly smashed condition. Mr. S. Castle had sent from Fordingbridge two baskets similarly packed, one by rail, the other by Parcel Post, and while the former arrived in first-rate condition, the contents of the package entrusted to the Post-office were rendered valueless; handle baskets had been employed, and the sides lined with cotton wool covered with paper, the bunches being tied in round the sides as shown in the lower part of fig. 73; and specimens despatched by Mr. J. Louden, The Quinta Gardens, Chirk, were quite unpresentable,—these, however, had been simply placed in a box with no packing material. A number of packages were received in this class, and after much consideration as to cost of package, &c., and length of journey, the Prize Cup was awarded to Mr. Dawes, Temple Newsam Gardens, Leeds. His method is to pack the bunches on a paper foundation in a square box, and they were very skilfully packed, too. Mr. J. Hudson, gr. to the Messrs. Rothschild, Gunnersbury House, Acton, sent bunches tightly packed in a basket padded round the sides with paper, and they had borne the journey without injury. Mr. S. Castle's specimens also arrived in excellent condition, as already stated; examples from Mr. C. J. Waite, Glenhurst Gardens, Esher, are also worthy of mention. Another method of packing the fruit is in a wrapping of paper, while the space between this and the sides of the box is filled by a tight packing of the recently introduced wood-wool—fine long shavings—samples of which were shown by Mr. George, of Putney. This method is the one adopted by the Royal Horticultural Society for transit by Parcel-post, and is on the whole very satisfactory. Cotton-wool, as a packing material, is not to be generally recommended, as it possesses no spring or elasticity. Generally speaking, the bunches which had been sent off in baskets arrived in the best condition, and a padding of cotton-wool and soft paper was most common.

Most of the exhibits were entered in the class for a general collection, and here the collection of varieties shown by the Society itself was of great merit, the berries being richly coloured and the bunches well-finished; it was indeed one of the best grown and most representative lots shown. Some bunches of Muscat of Hamburgh were remarkably fine, the berries being of large size. Black Monukka was also well represented; this is a very nice-flavoured Grape. Alnwick Seedling was another variety of merit. Good examples of the following were also staged: Black Hamburgh, Madresfield Court, Lady Downes, Alicante, and Gros Maroc, splendidly finished; of white varieties Foster's Seedling, Muscat of Alexandria, Royal Muscadine, Golden Hamburgh, Raisin du Calabre, and Buckland Sweetwater, may be named. Gros Colmar was shown, and with it Dodrelabi recently introduced from the Hungarian wine gardens, where it has been grown for years; it appears in every way to be the same as Gros Colmar, except in size of berry, and they are probably identical.

An exhibit of much interest was that of Mr. W. Roupell, Harvey Lodge, Roupell Park, S.E., who contributed bunches of several Chasselas and Frontignan Grapes; also the American Raspberry and Strawberry, and two fine bunches of Canon Hall Muscat, all from Vines in pots. The Diamant-traube was well represented, and with its clear pale but strong skin, moderate size, and good flavour, should find favour. There is a drawback to the Chasselas and similar Grapes, inasmuch as that although they are richly flavoured, the berries are small, and this was well seen in Mr. Roupell's collection, where Canon Hall Muscat was carrying berries of full size, and all grown together. The varieties included were:—

Black or Purple Varieties: (1.) Black Hamburgh.—*White, Green, or Golden:* Duke of Buccleuch, Chasselas Vibert, Royal Muscadine, Diamant-traube, General della Marmora.—*Muscat and Frontignan:* Black Muscat, Madresfield Court, Canon Hall Muscat, Mrs. Pearson, Muscat of Hungary.—*Frontignans:* Purple Constantia, Old Black Frontignan, July Frontignan, Grizzly Frontignan, Early Golden Frontignan, Chasselas Musqué le vrai of Horvath, Primavis Frontignan, Trouvéren Frontignan, Dr. Hogg.—Vitis Labrusca (American origin).—Strawberry and Raspberry varieties.—*Vinous or Late:* Gros Colmar (on Muscat of Alexandria stock), Black Alicante, Alnwick Seedling, Lady Downes' Seedling, Trebbiano.

Messrs. T. Rivers & Son, Sawbridgeworth, showed a collection of eighteen varieties, including a new variety named San Antonio; it is a black Grape with moderate-sized berries of oval form, resembling in appearance a small Madresfield Court or Mrs. Pince—the bunches were small, but of fair quality. Black Alicante, Gros Maroc, Black Hamburgh, and Mrs. Pince, were best represented. Esperione, Tokay Frontignan, Early Saumur, Royal Muscadine, Ryton Muscat, Golden Queen, and such more common sorts as Muscat of Alexandria and Mrs. Pearson were also shown in this collection, some of the bunches being cut from Vines grown in a cool house.

Some finely cultivated specimens of Gros Colmar and Gros Maroc, four bunches of each, both being large bunches with finely developed berries and well finished, came from Mr. A. G. Hookings, gr. to S. W. Graystones, Esq., Hurst Side, West Moulsey. Black Alicante were almost as fine, and of white Grapes three bunches of Foster's Seedling were the best.

From Messrs. J. Peed & Sons, Norwood Road, S.E., came a few bunches of popular varieties. The blacks were well finished and even, and the bunches of moderate size; Gros Maroc and Black Alicante may be named.

Mr. Wallis, Keele Hall Gardens, Newcastle, Staffordshire, forwarded a collection of eighteen varieties; they were of fair average quality, and of medium size, but their appearance had been injured in the journey up. Gros Maroc, Alicante, Alnwick Seedling, and Barbarossa, were among the best; Mrs. Pearson, Muscat of Alexandria, and Golden Queen, were richly-coloured berries; and Muscat Champion was represented by a small bunch.

From Mr. J. Louden, The Quinta Gardens, Chirk, there came some first-class specimens, but they did not arrive till the Wednesday morning. They were all very even and well finished, the bunches of Alicante and Black Hamburgh being large and heavy, three bunches of the last-named being really grand; Muscat Champion and Muscat of Alexandria were also of splendid quality.

Four bunches of Muscat of Alexandria, well-developed samples, were shown by Mr. G. Wythes, Syon House Gardens, Brentford; Mr. Willard, Holly Lodge Gardens, Highgate, contributed specimens of Stillward's Sweetwater and West's St. Peter; Mr. Miles, Appley Towers Gardens, Ryde, Isle of Wight, submitted a bunch of his newly-raised variety, Appley Towers, which sustained the good opinion formed when previously exhibited at the Drill Hall. Mr. M. Dunn, Dalkeith Palace Gardens, Dalkeith, N.B., sent specimens of the Grapes sent out as John Downie, but which proved to be Alnwick Seedling, and also of another variety, which was unknown; and from Mr. T. Bradshaw, Hillsborough, co. Down, was submitted a white variety, of good flavour and thin skin, under the name of Lady Downshire, raised between White Gros Colmar fertilised by Madresfield Court. It is stated to keep well, and does better on its own roots than when grafted on the Hamburgh.

In the class for "high-flavoured" Grapes, Mr. J. Clarke, Albion Nursery, Hale Road, Farnham, was the only exhibitor who sent small bunches, but not specially fine; Muscat of Alexandria and Madresfield Court were the best varieties.

The same exhibitor was the only one who entered in the class for Grapes grown without heat under glass, and some very good specimens were produced, the bunches of moderate size, and well finished; Madresfield Court, Gros Maroc, Gros Colmar, Muscat of Alexandria, Alnwick Seedling, and Lady Downe's being the finest.

As an interesting adjunct to the exhibits already named, were a few samples of diseased Grapes, including mildew, and also the Vine moth (Tortrix angustiorana), which is of comparatively recent discovery in this country, although well known in America (see fig. 72) The caterpillar eats the skin of the Grapes, and nets the berries together by a web. They feed on the ripe berries, which decaying, cause rot in their neighbours, and so considerable damage is done. And Mr. A. F. Barron contributed a collection of illustrations of various varieties of the Grape, and we are indebted to him for the use of the blocks illustrating the packing of Grapes. Awards:—

AWARDS OF THE FLORAL COMMITTEE FOR DAHLIAS.

Silver-gilt Banksian Medal.—To Messrs. Paul & Son; Messrs. J. Laing & Co., and also for Begonias; Messrs. J. Cheal & Sons; Messrs. Keynes, Williams & Co.; Mr. Charles Turner.

Silver Flora Medal.—To Mr. Geo. Phippen; Messrs. Rawlings Bros.; Mr. J. T. West; Mr. T. S. Ware; Messrs. H. Cannell & Son,

Silver Banksian Medal.—Messrs. Dobbie & Co., Mr. Geo. Humphries; Messrs. Saltmarsh & Son; Messrs. Heath & Son; Messrs. H. Cannell & Sons, for Begonias; Messrs. Harkness & Sons, for hardy flowers.

Bronze Banksian Medal.—Mr. J. Tranter; Mr. W. Salmon; Messrs. Reid & Borneman, for Chrysanthemums; Messrs. J. Peed & Sons, for Dahlias.

Awards of Merit.

Chrysanthemum (Pompon) Miss Lilly Stevens from Messrs. Reid & Borneman.

Lælia Eyermanni, from Messrs. Pitcher & Manda.

DAHLIA CONFERENCE.

Certificates of Merit were given to the following blooms, as shown in the stands of the various exhibitors.

Centennial (C.), from Messrs. J. Cheal & Sons; Melita (C.), from Mr. T. S. Ware; Comedian (F.), from Messrs. Keynes, Williams & Co.; Beauty of Arundel (C.), from Mr. Burbury; Eldorado (S.), from Mr. C. Turner; Othello (P.), from Mr. C. Turner; The Mikado (P.), from Mr. C. Turner; A. W. Tait (C.), from Messrs. H. Cannell & Sons; Daisy (P.), from Mr. J. T. West.

The following varieties, which have been under trial in the gardens, also received Certificates of Merit:—

Cactus vars.—Honoria, Panthea, Juarezii, Empress of India, A. W. Tait, and Mrs. Hawkins, from Messrs. Keynes, Williams & Co.; Juarezii, from Mr. C. Turner; Mrs. Hawkins, Henry Patrick, Charming Bride, and Lady Kerrison, from Mr. T. S. Ware.

Pompon vars.—Darkness, Brunette, Millie Wood, Fairy Tales, Whisper, Mdlle. V. Facourt, Gem, Red Indian, The Khedive, Janet, Rosetta, Rosalie, Lady Blanche, E. F. Jénker, White Aster, Fashion, Isabel, and Mabel, from Messrs. Keynes, Williams & Co.: Ernest, Isabel, Fanny Weiner, Anna Zachman, Dove, Princess Sophie Sofiela, Cupid, Lady Jane, Admiration, and E. F. Jenker, from Mr. C. Turner.

Single vars.—Miss Linaker, The Sport, Sunningdale White, Mr. Kennett, Alfonso, Lady Monckton, Cetewayo, Formosa, from Messrs. J. Cheal & Sons; Florrie Fisher, Miss Henshaw, and Kate, from Mr. T. S. Ware.

Bedding vars.—Yellow Pet, Marguerite Bruant, and Flora Macdonald, from Mr. C. Turner.

Show vars.—Condor, J. B. Service, George Rawlings, Ovid, Mrs. Gladstone, Cyprus, Royalty, Primrose Dame, Leah, Goldfinder, Royal Queen, Diadem, Toison d'Or, Mrs. Glasscock, Statesman, Mrs. Harrison, and Pioneer, from Mr. C. Turner.

Fancy vars.—Grand Sultan, Queen Mab, and General Gordon, from Mr. C. Turner.

Vote of thanks to C. Harman Payne, Esq., F.R.H.S., for collection of coloured drawings of Dahlias.

GRAPE CONFERENCE.

Certificates of Merit were awarded to the following varieties, as shown in the different collections:—

Black Monukka, from H. Balderson, Esq., and the Royal Horticultural Society; Canon Hall Muscat, from Mr. W. Roupell; Muscat of Alexandria, from Mr. G. Wythes; Muscat Hamburgh and Alnwick Seedling, from the Royal Horticultural Society; Gros Colmar and Gros Maroc, from Mr. A. G. Hookings; Muscat of Alexandria, Muscat Champion, Alicante, and Black Hamburgh, from Mr. J. Louden.

Certificates of Merit were also accorded to Messrs. T. Rivers & Sons, for a collection of Frontignan Grapes; to Mr. J. Wallis, for a collection of Grapes.

The Silver-gilt Cup for examples of packing Grapes for private use went to Mr. Dawes; and Certificates of Merit in the same class to Mr. J. Hudson, Mr. S. Castle, Mr. C. J. Waite, and Mr. Hookings.

Silver-gilt Banksian, to Mr. W. Roupell, for collection of Grizzly and Frontignan Grapes; Silver Banksian, to Messrs. T. Rivers & Sons; to Mr. St. Clair, to Messrs. Parrott Brothers, to Mr. Peter Kay, to Mr. Sweet, and to Mr. A. G. Hookings for collection of Grapes.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.						Rainfall.			Bright Sun.	
	Above (+) or below (—) the Mean for the week ending Sept. 20.	Accumulated.					More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.						
		Day-deg.	Day-deg.	Day-deg.	Day-deg.		10ths Inch.		In.		
1	5 +	104	0	+ 121	— 72		1 +	184	34.4	36	25
2	6 +	110	0	— 35	— 58		3 —	155	21.9	32	31
3	5 +	120	0	+ 28	— 93		2 —	133	17.9	41	30
4	4 +	128	0	— 64	— 39		2 —	136	17.5	62	37
5	3 +	116	0	— 81	— 27		3 —	129	16.3	52	33
6	3 +	127	0	— 64	— 68		1 —	129	20.2	58	35
7	4 +	104	0	— 18	— 73		2 —	158	34.7	37	32
8	4 +	120	0	+ 36	— 81		4 —	150	23.4	47	31
9	2 +	113	0	— 80	+ 12		2 —	152	26.6	50	37
10	3 +	109	0	— 6	— 56		3 +	174	24.4	37	31
11	2 +	109	0	— 3	— 15		8 —	167	29.3	36	33
12	1 +	122	0	— 1	— 22		2 —	150	23.5	55	44

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending September 20, is furnished from the Meteorological Office :—

"The *weather* continued very fine over the greater part of the kingdom during the earlier days of the week; unsettled conditions subsequently extended over us from the westward and southward; rain fell in all districts, and thunderstorms occurred in many places.

"The *temperature* has again been above the mean, the excess having ranged from 1° in the 'Channel Islands' and 2° in 'England, S.W.,' and 'Ireland, S.,' to as much as 6° in 'Scotland, E.,' and 5° in 'Scotland, N.,' and 'England, N.E.' The highest of the maxima were generally recorded either on the 15th or 16th, and varied from 68° to 70° in Ireland, from 68° to 75° in Scotland, and from 73° to 78° over England. The lowest of the minima were registered during the early part of the period, and varied from 39° in 'Ireland, N.,' to 46° in 'England, N.E.,' and to 50° in the 'Channel Islands.' During the latter part of the week the maxima were lower, and the minima higher, than those experienced on the earlier days.

"The *rainfall* has been more than the mean over Ireland and in the north of Scotland, but less in all other districts.

"*Bright sunshine*, although considerable, has been much less prevalent generally than in the previous week. The percentage of the possible duration ranged from 32 in 'Scotland, E.,' and 36 in 'Scotland, N.,' to 55 in the 'Channel Islands,' and to 62 in 'England, E.'"

MARKETS.

COVENT GARDEN, September 25.

MARKET shows scarcely any alteration from the previous quotations. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	3 6	7 0	Peaches, dozen,	1 0	8 0
Cobs, Kent, 100 lb.	50 0	...	Pine-app'es, St. Michael, each	2 0	6 0
Grapes, lb.	0 9	2 6	Plums, ½-sieve	7 0	11 0
Lemons, per case	20 0	40 0			
Melons, each	0 6	2 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Articho., Globe, each	0 4	0 6	Mustard and Cress, punnet ...	0 4	...
Beans, French, lb. ...	0 4	...	Onions, per bunch ...	0 5	...
Beet, red, per dozen	1 0	2 0	Peas, per quart ...	1 0	...
Carrots, per bunch...	0 6	...	Parsley, per bunch...	0 4	...
Cauliflowers, each ...	0 3	...	Shallots, per lb. ...	0 6	...
Celery, per bundle ...	1 6	2 0	Spinach, per bushel...	2 0	...
Cucumbers, each ...	0 4	0 6	Tomatos, per lb. ...	0 9	...
Endive, per dozen ...	2 0	...	Turnips, per bunch, new	0 4	...
Herbs, per bunch ...	0 4	...			
Lettuces, per dozen...	1 6	...			
Mushrooms, punnet	2 0	...			

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Ferns, in var., doz	4 0	18 0
Aspidistra, doz. ...	18 0	42 0	Ficus elastica, each	1 6	7 0
— speci. plants, each	7 6	10 6	Foliage plants, various, each ...	2 0	10 0
Asters, per doz. ...	4 0	9 0	Fuchsia, per doz. ...	3 0	6 0
Begonias, per doz. ...	4 0	6 0	Heliotrope, per doz.	4 0	6 0
Calceolaria, p. doz....	4 0	6 0	Hydrangeas, doz. ...	6 0	18 0
Campanula, per doz.	9 0	18 0	Liliums, various, per dozen	9 0	18 0
Chrsanthem., p. doz.	4 0	18 0	Marguerites, doz. ...	6 0	12 0
Coleus, per dozen ...	2 0	6 0	Mignonette, per doz.	3 0	6 0
Cyperus, per dozen...	4 0	12 0	Nasturtiums, p. doz.	4 0	6 0
Dracæna terminalis, per dozen	30 0	60 0	Palms in variety, each	2 6	21 0
— viridis, per doz.	12 0	24 0	Pelargoniums, scarlet, per dozen ...	3 0	6 0
Euonymus, in var., per dozen	6 0	18 0	— per doz.... ...	6 0	12 0
Evergreens, in var., per dozen	6 0	24 0	Petunias, per doz. ...	4 0	6 0
Ericas, various, doz.	8 0	18 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun. ...	2 0	4 0	Pelargoniums, scarlet, 12 spr.	0 3	0 6
Asters, 12 bunches...	3 0	8 0	— dozen sprays...	0 4	0 9
— French, bunch...	1 0	1 6	Primulas, double, 12 sprays	0 6	1 0
Bouvardias, per bun.	0 6	1 0	Pansy, or Heartsease, 12 bunches ...	1 0	2 0
Calla æthiopica, 12 bl.	2 0	5 0	Poppies, various, doz. bunches	1 0	2 0
Carnations, 12 blms.	1 0	2 0	Pyrethrum, 12 bun.	2 0	4 0
— 12 bunches ...	4 0	6 0	Roses, Tea, per doz.	0 6	1 6
Chrysanth., 12 bun.	3 0	6 0	— coloured, dozen	1 0	1 6
— 12 blooms ...	1 0	3 0	— red, per 12 bun.	2 0	6 0
Cornflower, 12 bun. .	1 6	3 0	— Safrano, dozen...	1 0	2 0
Dahlias, 12 bun. ...	2 0	4 0	— outdoor, 12 bun.	1 0	3 0
Eucharis, per dozen	2 0	4 0	Stephanotis, 12 spr.	1 6	3 0
Gardenias, 12 blooms	2 0	4 0	Sultan, 12 bunches...	3 0	4 0
Gladiolus, 12 bun. ...	6 0	12 0	Tuberoses, 12 blms....	0 3	0 6
Heliotropes, 12 spr.	0 6	1 0			
Lilium, var., 12 bl....	0 6	4 0			
Maiden Hair Fern, do	4 0	9 0			
Marguerites, 12 bun.	3 0	6 0			
Mignonette, 12 bun.	1 0	3 0			

SEEDS.

LONDON: *Sept.* 24.—Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, London, E.C., write that the Clover seed market exhibits a strong tone as regards values; but the demand is for the moment quiet, the only quotable advance being in white seed. Italian Rye-grass is firm. For winter Tares there is an improved sale at last week's rates. Sowing Rye is without change. The new Essex white Mustard seed, now coming to market, exhibits for the most part poor quality. Black Rape seed tends upwards. More money is asked for Hemp seed. Blue Peas keep steady; fine large samples are scarce. New Zealand Cocksfoot is getting dearer.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending September 20, and for the corresponding period in last year:—1890, Wheat, 32*s.* 1*d.*; Barley, 29*s.* 11*d.*; Oats, 17*s.* 9*d.* 1889, Wheat, 29*s.* 6*d.*; Barley, 28*s.* 11*d.*; Oats, 17*s.* 3*d.*

FRUIT AND VEGETABLES.

STRATFORD: *Sept.* 23.—The supply has been very good during the past week, and a brisk trade done at the undermentioned prices:—Cabbages, 2*s.* 6*d.* to 4*s.* per tally; Cauliflowers, 5*s.* to 6*s.* do.; Turnips, 30*s.* to 40*s.* per ton; Carrots, household, 50*s.* to 60*s.* do.; Mangels, 18*s.* to 20*s.* do.; Swedes, 19*s.* to 21*s.* do.; Onions, English, 90*s.* to 100*s.* do.; do., Dutch, 5*s.* 6*d.* to 4*s.* per bag; Apples, English, 3*s.* 6*d.* to 7*s.* per bushel; Watercress, 7*d.* per dozen; Celery, 7*s.* to 10*s.* per dozen rolls; Pears, English, 5*s.* to 8*s.* per bushel; do. Dutch, 2*s.* 6*d.* to 5*s.* do.; Walnuts, 2*s.* to 3*s.* per prickle; do., 4*s.* 6*d.* to 5*s.* per bag; Tomatos, English, 3*d.* to 6*d.* per lb.; do. Bordeaux, 9*d.* to 1*s.* per box; Plums, 3*s.* 6*d.* to 4*s.* per half-sack; Apples, Dutch, 14*s.* to 18*s.* per cask.

POTATOS.

BOROUGH AND SPITALFIELDS: *September* 23.—Quotations:—Hebrons, 60*s.* to 80*s.*; Regents, 50*s.* to 70*s.*; Early Rose, 50*s.* to 60*s.*; Magnums, 60*s.* to 75*s.*; Imperators, 55*s.* to 80*s.* per ton.

SPITALFIELDS: *September* 24.—Quotations:—Magnums, 45*s.* to 70*s.*; Regents, 45*s.* to 65*s.*; Imperators, 40*s.* to 70*s.*; Hebrons, 45*s.* to 60*s.* per ton.

NOTICES TO CORRESPONDENTS.

AMERICAN BLIGHT: *Constant Reader.* Wash the branches with brine, strong soapsuds, whale-oil, or kerosene emulsion. Uncover the roots as much as you can without actually lifting the tree, if it be an old one, and wash the roots, and saturate the soil with strong soapsuds, then, and at intervals of a few months, for two or three seasons. The insects hibernate in great numbers on the roots, consuming the juices of the tree, and setting up the same kind of injury as that noticed on the branches.

AMPELOPSIS VEITCHI: *A. T.* By layering in summer in the open air, or cuttings in spring in a little warmth; and also with two-year old wood put in the open ground, as you would Currant cuttings. If you want great quantities, obtain stocks of A. quinquifolia; get them rooted, and established in pots, and cleft-graft A. Veitchi on these during the growing season. The graft should be put on very low.

ASPHALTE IN VINERY: *W. T. T.* We think it would not be wise to employ asphalte for a vinery path, the heat of summer causing dangerous fumes to arise from it.

CARNATION SEEDLINGS: *J. MacI.* They seem to be fair-sized blooms, and double, and fit for the mixed border, but it is now too late in the year to judge of the merits of the flowers when grown in the open air.

CHRYSANTHEMUM CORONARIUM: *Platz & Son.* A very neat, brightly coloured strain, quite worth introducing.

PROPAGATING: *H. E.* — Crotons: The growing tips of the shoots in strong, moist heat under a bell-glass or propagating-case. Afterwards grow in bottom heat in a moist stove temperature. Ericas: Half ripe shoots from top and sides of plants—July to September, in cool pit or greenhouse, where the sun will not shine on the pots. If bell-glasses be used they must be wiped out daily—but glasses are not essential to success. Use very clean sand from which all loamy particles are washed out—sandy peat below the layer of sand.—*Fruits under Glass; The Forcing Garden*, by Samuel Wood (Crosby Lockwood & Co., Stationers Hall Court, London); *Paul's Rose Garden* (W. Paul, Waltham Cross).

FUNGUS ON PHALÆNOPSIS: *F. S. M.* A fungus Cladosporium Orchidearum. See our answer last week.

GRAPE VINES: *G. W. B. H. P.* Your Vines, judging from what you state, and the appearance of the sample sent, are suffering from shanking, due to imperfect root-action, from a too rich and too damp border. Make an examination of the border and roots.

GUMMING IN CHERRIES: *J. L.* First remove all gummed shoots, and burn them, as gumming is a disease that, in some of its forms, spreads from spores. Then, to prevent gumming, lift the trees, if they are growing very strongly, and keep the roots near the surface, and pinch off shoots with the finger and thumb, or remove wood-buds whilst still young, if these are not required to fill up the crown, or cover the wall space. Do not use the knife, or make wounds that will not readily heal the same season.

HEATING A HOUSE BELOW THE LEVEL OF THE BOILER: *J. M.* As a rule, this mode of heating a house is not to be recommended, for when the whole has to be heated during hard weather, the chief part of the heated water will travel towards the highest point, leaving the pipes at the low level almost unheated. The difficulty might be got over by carrying up a flow and return pipe at the lowest point to a height equal to the highest part of the main range, or as high as the supply cistern.

INSECTS: *E. P.* From having been placed in a bottle with water instead of spirit, your Cattleya shoots reached us in a state of black rottenness. After examining them carefully with a lens for an hour, we could not discover any trace of insects in the mass, although the shoots showed traces of their burrowings. Please send specimens in a dry state, with the grubs or flies found in them, in pill-boxes, to Professor I. O. Westwood, Oxford.

LUMINOUS FUNGI: *W. H. S.* Yes, there are luminous fungi. Kindly send specimens.

MUSHROOM: *Joppa.* Your Mushroom had apparently come from Joppa unpacked, smashed, and consequently undeterminable.

NAMES OF FRUITS: *Gilbert Shand.* 1, Hawthornden; 2, new Hawthornden. Pear not recognised; very fine quality.—*T. Price.* Worcester Pearmain.—*D. V.* Pear Souvenir du Congrès.—*James Bryson.* Tomato resembles Ham Green Favourite.

NAMES OF PLANTS: *Carter & Co.* Rosa myriantha, *Winkle.* 1, Œnothera missouriensis; 2, Aster Novæ Angliæ var. pulchella; 3, Lobelia Milleri; 5, Sedum spectabile; 6, Echinops ruthenicus. Only four specimens sent, 1, 2, 3, 6. *D. D. W. O.* Your Abies Veitchii is the one now called A. brachyphylla, not the true Veitchii though sent out under that name under a misapprehension. It was figured in *Gard. Chron.*, on August 1, 1885, p. 145. *J. Bryson.* 5, Lastrea filix mas. nanum; 6, Not a good specimen—no fruit or fertile frond; 7. Acer polymorphum var.; 8, Parvissimum is correct—other numbers not found. *J. M.* Tracheium cœruleum. *R. G. H.* 4, Pelargonium peltatum, var. Duke of Edinburgh; 5, P. Viscosum; 6, P. Little Gem Fern Nephrodium molle. *T. T. & Sons.* 1, Helianthus decapetalus; 2, Helianthus multiflorus var.; 3, Pyrethrum uliginosum; 4, Pyrethrum lacustre; 5, Centranthus ruber; 6, Asters we must reluctantly decline to name—specimens invariably come out of condition. *J. Y.* 1, Helianthus decapetalus; 2, Aster dumosus; 3, Solidago virga aurea.—*R. W. H.* Geum coccineum.—*H. R. H.* A small form of Epidendrum inversum.—*J. Preece.* Could you send us further specimens?—*S. W.* 1, Bambusa Fortunei variegata; 2, B. variegata; 3, Ophiopogon jaburan; 4, Cordyline australis.—*J. W.* Acer negundo, the green form.—*C. Scott.* 1, Angelica sylveatris; 2. Torilis anthriscus.—*No name.* 1, Rosa lucida; 2, Polygonum cuspidatum; 3, P. sachalinense; 6, Chelone obliqua; 7, Erigeron speciosus; 8, Campanula; 9, Veronica

decussata var.; 10, Anthericum lineare variegatum; 12, Phlox subulata. Others not recognised. Another time please send no more than six. Our time is precious, and naming plants is a matter of courtesy to our subscribers, not of duty on our part.—*H. S.* 1, Biota orientalis var.; 2, Juniperus chinensis; 3, Retinospora pisifera; 4 and 5, Junipers doubtful—see next week; 6, Biota orientalis, cheap; 7, the cut-leaved Lime; 8, Amelauchier probably—has it white flowers in spring?—*J. L.* Pyrus aria.—*R. S.* Both forms of Helenium autumnale. We do not know pallida.

PALESTINE LILY: *T. S.* We know of no Lily under the above name. The Lilies mentioned in the Bible are supposed to be either Honeysuckle, Lonicera caprifolium, Convallaria majalis, or Sternbergia lutea.

PENTSTEMON: *W. E. Gladstone.* A good flower and spike.

POTATOS AND ONION: *J. A. C.* The Potato had been overlooked by us. It was an ordinary case of Potato rot. The Onion was injured by the Onion-fly—Anthomyia ceparum—whose maggots had eaten away the interior of the bulb. We do not suppose the fly would injure a Potato. Burn all bad bulbs, and after dressing the land with soot and gas lime, trench it. The small white worm on the Potato merely fed on its decaying substance.

SAPROPHYTIC PHANEROGAMS: *Vox.* Such Orchids as Neottia, Corallorhiza, as well as Lathrea, Monotropa, and perhaps Orobanche. Rafflesia and Hydnora are foreign examples. We do not think it was a "catch question." Examiners do not put such questions when the occasion is an important one. Still it is open to question to what extent some of the plants named are purely parasitic, and not humus feeders only.

TAR ON WOUNDS OF TREES: *W. T.* Gas tar should not be used, as it has an injurious effect on the living tissues. Wood-tar is better, but dark slate-coloured paint is best; very large wounds should be afterwards covered with a capping of lead or zinc, securely nailed on.

TOMATO-HOUSE: *F. N.* A simple span-roofed house, 9 or 10 feet at the ridge, and 20 feet wide, if 100 feet long, could be built for about 30*s.* per foot run, perhaps for less, in your locality. Heating: a simple kind of boiler with two flow and return pipes all round, would be ample for the kind of forcing intended. You might have one centre bed and two side beds of soil, edged with brick and lattice or gravel paths. The plants may be trained to wooden stakes or to wires. Standard plants admit of the maximum of sunlight all round. Corrugated iron would answer for brickwork at the sides and ends up to a height of 4 feet, and side glass is not essential, although the ends should be well lighted.

VALLOTAS: *D. Paxton.* No. 1 is a poor form of V. purpurea; 2 is a fairly good one—nothing new in it.

VINES: *Subscriber.* In a border 4 to 5 feet wide, the Vines soon wear out. If you do not care to rout them out this season, you might buy some stout planting Canes, and grow them on in pots or tubs for a season, and then plant them in the border in fresh materials. Meanwhile, give assistance to the old Vines with new soil and Thompson's Vine Manure.

VINES MILDEWED: *M. W.* The cool, dull summer has brought about the attack of mildew. Dusting sulphur on the leaves, and letting it remain for a day or two, washing it off with the engine, is a remedy as good as any. Get the heating apparatus at work, after coating the pipes with lime-wash in which flowers-of-sulphur are stirred; keep a gentle heat in the pipes by day, and ventilate freely. When fresh, soil the Peaches and Nectarines, do not forget to lift their toes upwards, bringing them near the surface. *Vines and Vine Culture*, by A. F. Barron.

COMMUNICATIONS RECEIVED.—W. S.—W. H. D.—W. W.—Veitch & Sons.—E. H. C.—L. B. G.—A. B.—Adolescens.—Will G. B. Claydon send his address?—C. P.—A Beekeeper.—A. Ratcliff, the photograph may yet be used.—W. E. G.—W. Thompson.—J. B.—X.—E. C.—R. A. R.—C. Melnotte.—W. A. C.—J. D.—G. B. C.—A. D. W.—A. H. B.—G. P.—W. H.—J. H.—W. B.—C. T. D.—R. W. V.—E. P. D.—C. T. C. G.—E. H. M.—W. H. W.—J. G. B.—H. N. E.—J. R.—A. R., Sydney.—L. L., Brussels, *tout de suite.*

SPECIMENS, DRAWINGS, or PHOTOGRAPHS RECEIVED WITH THANKS.—W. O.—C. de B.—J. R.—I. O. W.

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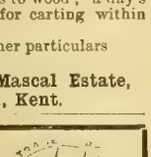
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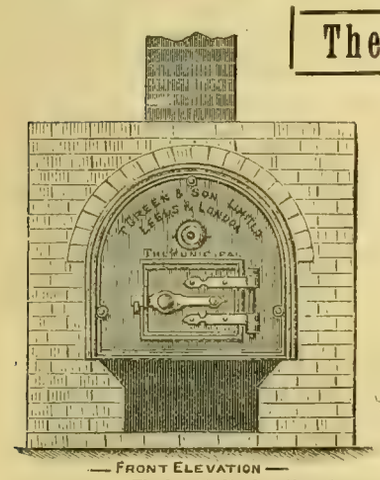
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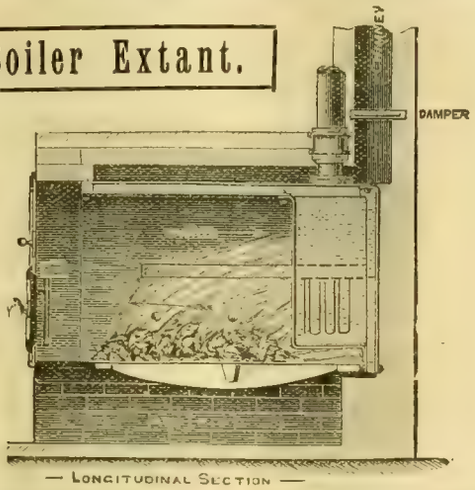
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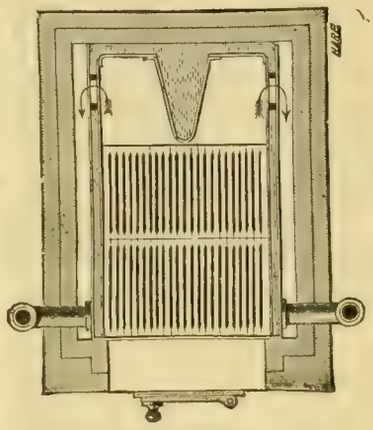
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Morley House, Bagot, St. Saviour's, Jersey, *November 10th*, 1886.

GENTLEMEN,—The large Municipal Boiler which you sent me last year is doing its work satisfactorily; it is heating 5,000 feet of 4-inch pipe in one of my vineries, and I am quite sure that it has power to work a much greater length, while in cost of fuel it compares favourably with my other Boilers.

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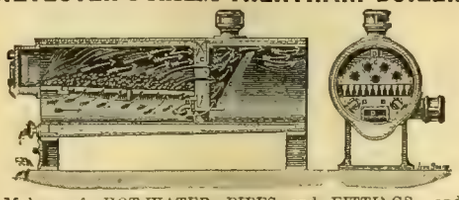
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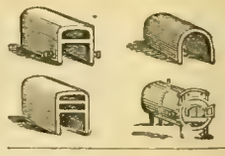


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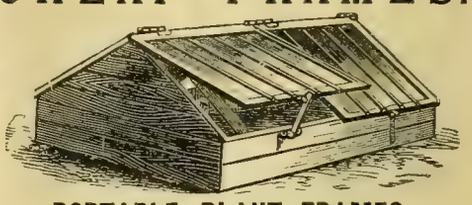
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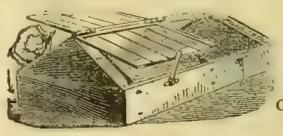
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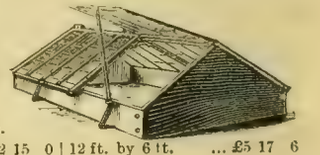


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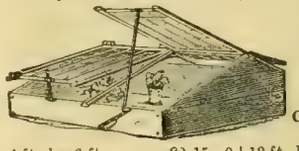
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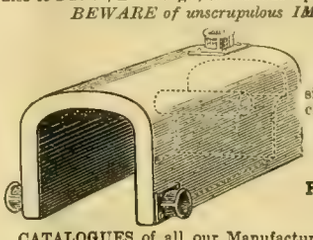
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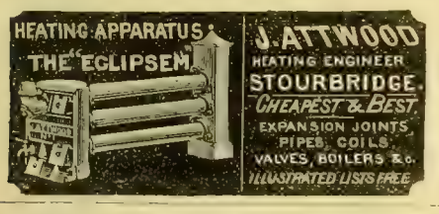
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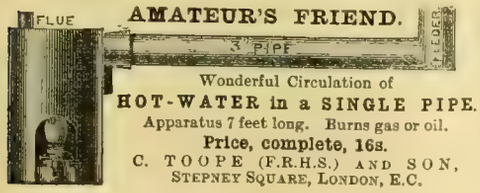


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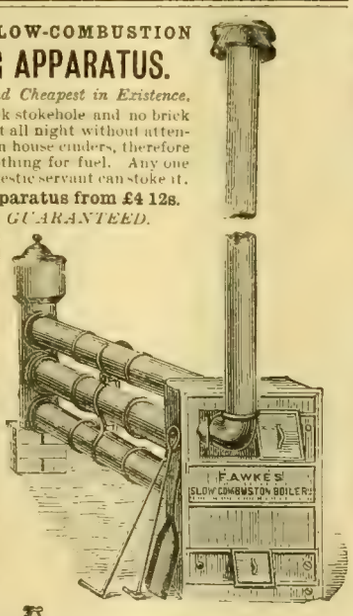
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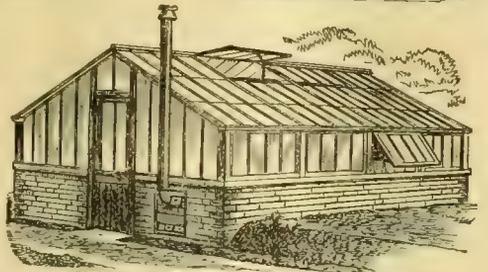
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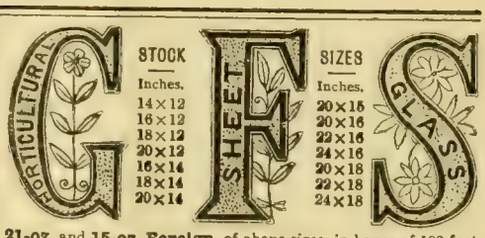
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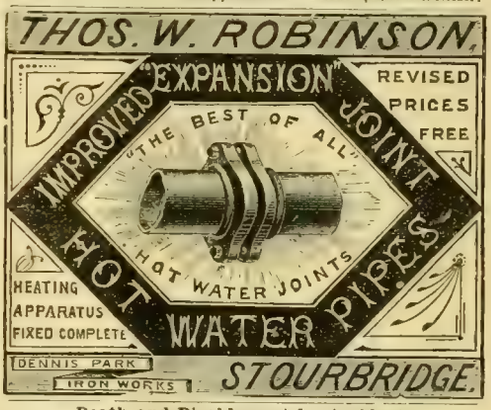
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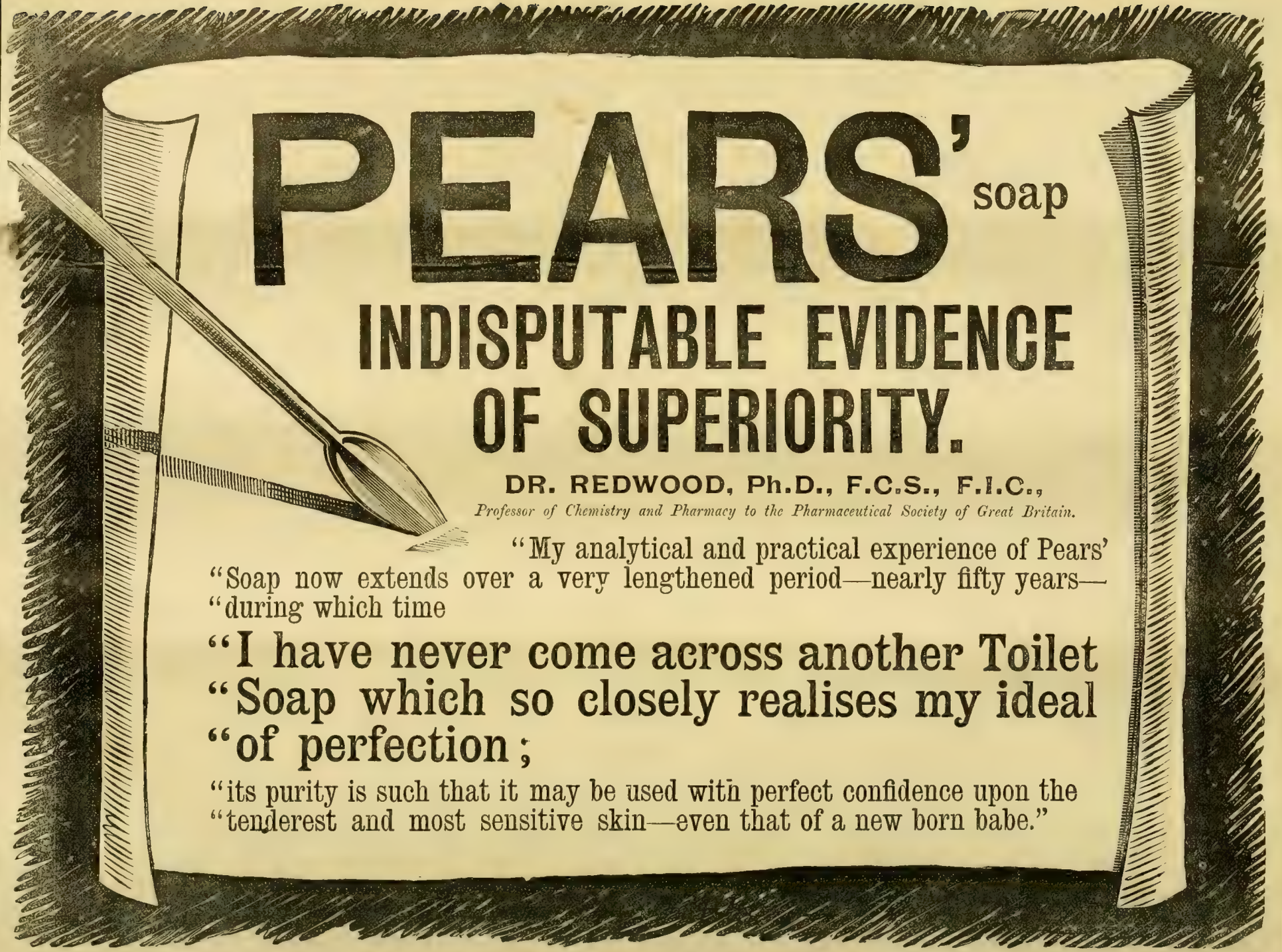
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HENRY SQUELCH, North Row, Covent Garden, FRUIT SALESMAN and COMMISSION AGENT, Importer of Bananas, and all kinds of Madeira and Canary Island Produce. Bankers, London and County Bank, Henrietta Street. Warehouses and Banana House, James Street, Covent Garden, W.C.

WILLIAM NEWTON, FLOWER SALESMAN, Covent Garden, W.C., is prepared to RECEIVE CHOICE CONSIGNMENTS of CUT FLOWERS. W. NEWTON having a good connection, can guarantee highest Market Prices. Good references given. Account Sales daily. Cheques as desired. Warehouse—29, Russell Court, Covent Garden, W.C.

WANTED, GERANIUM PLANTS, Old Plants from beds of H. Jacoby, Vesuvius, Master Christine, McMahon, and Sophie Dumaresque. Price per 100 to H. LONGFORD, Nurseryman, Sherburn-in-Elmet, Yorks.

WANTED, Standard and Dwarf H.P. ROSES, Small AUCUBAS, and other SHRUBS, in EXCHANGE for a few thousand PTERIS TREMULA, PTERIS CRISTATA MAJOR, &c., strong in thumbs. Stamford Hill Nursery, N.

WANTED, RED DAISIES, state lowest cash price per 1000, to BELLIS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

CARTERS' CHOICE BULBS, as supplied to H.M. the Queen, the Royal London Parks, and the London County Council. For full particulars, see CARTERS' BULB CATALOGUE, containing a beautifully Coloured Plate of Christmas and Easter Flowers, gratis and post-free to Messrs. Carters' Customers; price 6d. to the general public, the amount to be deducted from first order. 237 and 238, HIGH HOLBORN, LONDON.

FOR SALE, a few fine large KENTIAS and SEAFORTHIAS; also 18 fine healthy bearing PEACH TREES, 10 to 18 feet across, fibrously rooted, at reasonable prices. W. ICETON, Granard Nursery, Putney Park Lane, S.W.

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-yr. old flowering Crowns for forcing, and 2 and 1-yr. old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application. T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

BULBS—BULBS—BULBS.—Our stock of Dutch Bulbs is quite ready for inspection. Customers at liberty to come and select for themselves at the— NEW HAARLEM BULB WAREHOUSES, 34, Mansell Street, Aldgate, City, London. Proprietors—MICHAEL RAINS AND CO. Reg. Tel. Address—"BIOTICUS, London." Established 1856. CATALOGUE on application. Named HYACINTHS, 2s. 6d. per doz. 1st size Bulbs of any sort.

CUT MAIDENHAIR FERN all the year round. Present price, 100 fronds for 1s. 3d., Post-free, for cash. Special quotations for large quantities. TAYLOR AND CO., Timperley, Cheshire.

Bulbs.

E. H. KRELAGE AND SON, the King's NURSERYMEN, SEEDSMEN and FLORISTS, Haarlem (Holland), have published their General CATALOGUES of Dutch and other Bulbs, which will be sent post-free on prepaid application to their address direct. These Catalogues are No. 446 (410, 430). Dutch Flower-roots, and 405 with Supplements 435 and 451, Miscellaneous Bulbous and Tuberous-rooted Plants.

RICHARDIA ÆTHIOPICA, "Little Gem" (New). This is a perfect miniature model, growing about 12 inches high, with very small pure white spathes, invaluable for Bouquets and Wreaths. 24s. per dozen; sample plant, by post, 2s. 6d. A limited stock only. Also FREESIA LEICHTLINI MAJOR, 4s. per 100; 30s. per 1000. H. ELLIOTT, F.R.H.S., Springfield Nurseries, Jersey.

50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high, 15s. to £10 per 100, free on rail. J. J. CLARK, Goldstone Farm, Brighton.

Fruit Trees a Specialty.

STRAWBERRIES.—One of the best collections in the Trade, including Noble and other new sorts, and the best for Garden or Market. Descriptive LIST free. FRUIT TREES of all sorts. CATALOGUES free. Full Descriptive LIST, giving much valuable information, 6d. JOHN WATKINS, Fruit Tree Grower, Pomona Farm Nurseries, Withington, Hereford.

LOVEL'S Yorkshire STRAWBERRIES.—Strong, healthy, and well-rooted Runners, to fruit next season. Thury, Paxton, President, Noble, and other good varieties. Full Descriptive Price LIST with Testimonials free. Sample Parcel, 3d.—W. LOVEL AND SON, Driffield.

The Best Present for a Gardener.

VINES and VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published. New Edition. Price 5s., post-free 5s. 6d. A. F. BARRON, Royal Horticultural Society, Chiswick.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney. WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Dutch Bulbs.—Dutch Bulbs.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots to suit all buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving weekly from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Monday Next.

15,000 Early White ROMAN HYACINTHS, lotted to suit the Trade and other Large Buyers.

MR. J. C. STEVENS will include the above in his SALE of DUTCH BULBS at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, October 6.

On view morning of Sale, and Catalogues had.

Wednesday Next.

100 CAMELLIAS, fine plants, well set with buds, from Ghent.
2000 bulbs of FREESIA REFRACTA ALBA, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, October 8.

On view morning of Sale, and Catalogues had.

Thursday, October 16.

IMPORTANT SALE of IMPORTED and ESTABLISHED ORCHIDS.

Vanda Sanderiana.
Cypripedium Rothschildianum.

MR. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 16, at half-past 12 o'Clock precisely, the finest lot of VANDA SANDERIANA ever imported. The plants were brought home by the Collector, Mr. Micholitz, and under his personal care and attention they arrived in marvellous condition. Many large masses are amongst them, some with 8 growths, and all are green and healthy. Vanda Sanderiana is perhaps the finest Orchid yet discovered. It is very free-flowering, frequently bearing 8 to 10 flowers on a spike, and often producing 2 or more spikes. It is figured in *Reichenbachia*, vol. ii., p. 29.

Cypripedium Rothschildianum.

A very fine lot of this interesting and beautiful Cypripede; the plants are green and healthy, and are as good as established. This species is very scarce in its native habitat, and it is not likely that any more will be offered.

Cypripedium Haynoldianum.

In wonderful health and condition.

Aerides Lawrenceana.

A fine lot of this grand Aerides. This is, without doubt, the most beautiful of the genus. It produces spikes of a foot or more in length, and the individual flowers are very large.

Angræcum fastuosum.

Also a NEW ANGRÆCUM, not yet flowered in Europe. It is in the way of A. Ellisii, but far superior to that splendid species.

Aerides quinquevulnerum.

A fine healthy lot; many fine varieties will be found amongst them.

Cypripedium insigne.

These come from quite a new district, and will probably be productive of many startling novelties.

Cypripedium species.

Apparently in the way of Dayanu, but coming from a district far from where Dayana is found.

Also Vanda teres, Cymbidium eburneum, Saccolabium guttatum, and other IMPORTED ORCHIDS. Also will be included some valuable ESTABLISHED ORCHIDS:—

The new SARCOPODIUM GODSEFFIANUM, which obtained First-class Certificate, Royal Horticultural Society.
CATTLEYA O'BRIENANA.
COCHLIODA VULCANICA.
CYPRIPEDIUM BOISSERIANUM.
,, KLOTZSCHIANUM.
DENDROBIUM NOBILE SANDERIANUM, fine plant.
LYCASTE LEUCANTHA.
PHALÆNOPSIS MICHOLITZII.
The new MASDEVALLIA HYBRIDA COURTAULDIANA.
RENANTHERA STORIEI.
SPATHOGLOTTIS AUREA.
VANDA NIEMANNII.
DENDROBIUM STATTERIANUM, fine plants, in full bloom.
,, FORMOSUM GIGANTEUM, fine plants, in full bloom.
,, UNDULATUM.
EPIDENDRUM CORDIFERUM (atropurpureum section).
,, MYRIANTHUM, very rare.
LÆLIA EYERMANIANA.
,, GOULDIANA.
SACCOLABIUM HENDERSONIANUM.
TRICHOPILIA SOBRALIÆFLORA.
&c. &c. &c.

On view morning of Sale, and Catalogues had.

Thursday, October 16.

VALUABLE ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 16, Valuable and Well-grown ORCHIDS, the Property of a Gentleman who is leaving his Residence. Amongst which will be found fine examples of the following CHOICE ORCHIDS:—

CATTLEYA SKINNERII ALBA.
,, EXONIENSIS.
Dendrobium Falconerii, very fine specimen.

Continued on next column.

Continued from previous column.

Epidendrum brassavola, very fine specimen.
LÆLIA PURPURATA ALBA, fine plant.
EPIDENDRUM WALLISII, strong plant.
ODONTOGLOSSUM EXCELLENS.
,, Edwardii.
Oncidium Læmatochilum.
Aërides crassifolium.
Cattleya labiata Warnerii, fine specimen.
,, Bowringiana, fine specimen, in sheath.
,, Mendelii, fine specimen.
,, imperialis, fine specimen.
,, Dowiana, fine specimen.
,, Lawrenceana, fine specimen.
,, Trianæ virginalis, very fine plant.
Odontoglossum tripudians, fine specimen.
DENDROBUM SPLENDIDISSIMUM.
LÆLIA ANCEPS DAWSONII, splendid plant.
Lycaste Skinnerii alba.
Miltonia Clowesii, grand specimen.
Aërides Dayana.
Vanda teres alba.
Cœlogyne pandurata.
,, cristata alba, very fine plant.
Pescatorea cerina, grand specimen.
Cymbidium Hookeriana.
Oncidium splendidum, very fine plant.
Odontoglossum Humeana.
Dendrochilum Cobbiana, grand specimen.
Odontoglossum vexillarium rubellum.
LÆLIA ELEGANS PRASIATA, grand specimen, and fine variety.
ONCIDIUM INCURVUM ALBUM.
Odontoglossum Uro-Skinnerii, fine specimen.
Oncidium macranthum, very fine plant.
Lycaste Barringtoniæ.
And many choice hybrid Cypripediums and other valuable Orchids.

On view morning of Sale, and Catalogues had.

Thursday, October 23.

THE COLLECTION of ORCHIDS formed by the late J. W. Wooler Esq., of Almora Hall, Near Darlington.

MR. J. C. STEVENS has received instructions from the Executors of the late J. W. Wooler, Esq., to SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 23, at half-past 12 o'Clock precisely, his COLLECTION of ESTABLISHED ORCHIDS, comprising:—

Vanda Wightii.
Cypripedium Spicerianum.
,, Stonei.
Cattleya Gigas Sanderiana.
Cœlogyne cristata maxima.
Odontoglossum uro Skinneri.
,, polyxanthum.
Cattleya Mendelii Grandiflora.
Cattleya Mossiæ aurea
,, Massiana Hardyana, Heines var.
Cypripedium Druryii.
,, Insigne Maulei.
Odonto. Alexandræ giganteum
,, Blandum.
Oncidium Macranthum, &c.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.

GREAT UNRESERVED SALES.
Four times Weekly.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, all received direct for Unreserved Sale, and lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Sunningdale.—Without Reserve.

SIX DAYS' ABSOLUTE CLEARANCE SALE of several acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. C. Noble, who has received from St. John's College, Cambridge, peremptory notice to quit all lands held under them at Christmas next.

Important to Noblemen, Gentlemen, Builders, Fruit Growers, Nurserymen, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, close to the Sunningdale Railway Station, on MONDAY NEXT, October 6, and five following days, at 12 o'Clock precisely each day, without reserve, several acres of beautifully grown NURSERY STOCK, carefully prepared for removal, and including 25,000 Rhododendrons, 1 to 4 feet, consisting of named kinds, hybrid seedlings, ponticum, and others all in first-class condition for removal, many thousands of Andromedas, Kalmias, Azaleas and Ericas; 30,000 Laurels, of sorts, 1 to 5 feet; 3000 Portugal Laurels; 4000 Thuia Lobbii, 3 to 5 feet, splendid trees, all lately transplanted and suitable for hedges; 12,000 Thuia americana, 1 to 4 feet; 10,000 Cupressus Lawsoni, 1 to 5 feet; 10,000 Oval-leaved Privet, 1 to 4 feet; 2500 Berberis Darwinii, 1 to 2½ feet; 1000 Green Hollies, 1 to 2 feet, just transplanted. Several thousands of Abies Douglasii, Thuiopsis borealis, Retinosporas, in variety; Austrian Firs, and many others, 4 to 9 feet; very large quantities of Ornamental Trees, adapted for Street, Park, and Avenue Planting, such as Limes, Scarlet Chestnuts, Poplars, Elms, Laburnums, Thorns and others; 10,000 Spruce, Scotch, Austrian, and other Firs, 1 to 2½ feet; 12,000 Standard and Pyramid Fruit Trees; including 2000 Pyramid Pears, 3 to 7 feet; Fruiting Trees of the best leading kinds; Standard and Pyramid Apples, Cherries, Plums and Damsons. Several thousands of Gooseberries; 2000 Webb's Cob Nuts, 1½ to 5 feet; 2500 Fruiting Berberis, 1 to 4 feet; 1000 Purple Berberis, 1 to 4 feet; 2500 Mahonia aquifolia, 9 to 18 inches. Ornamental and Border Shrubs, in great variety; Ivies, Hypericums, and other plants suitable for growing under trees; also a good collection of Flowering Shrubs, comprising Lilacs, Guelder Roses, Syringas, Deutzias, &c.

Luncheon will be provided for intending Purchasers, and arrangements can be made with Mr. NOBLE to lift and forward any Lots to all parts of the Kingdom at the cost of labour incurred and material used.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Isleworth.

GREAT ANNUAL TRADE SALE of GOLDEN EUONYMUS.
By order of Messrs. C. Lee & Son.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Wood Lane Nursery, Isleworth, five minutes' walk from Isleworth, and ten minutes' walk from Asterley Park Stations, on TUESDAY NEXT, October 7, at 12 o'Clock, 10,000 to 15,000 best Gold and Silver EUONYMUS, 8 inches to 1 foot; many thousands of small SHRUBS grown for boxing, potting, and planting out, consisting of Aucubas, Green and Variegated Cupressus erecta viridis, Cupressus Lawsoniana, Box, Thuias, Retinosporas, Laurels, &c., in great variety.

May be viewed one week prior to Sale. Catalogues may be obtained on the Premises, at the Royal Vineyard Nursery, Hammersmith, W.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

25,000 Kentia Seeds.

Just to hand, in grand germinating condition.

MESSRS. PROTHEROE AND MORRIS will include the above in their great LILY SALE, at their Rooms, on TUESDAY NEXT, October 7, at half-past 12 o'Clock.

7000 Lilium auratum.

Just to hand, in splendid condition.

MESSRS. PROTHEROE AND MORRIS will include the above in their great LILY SALE, at their Rooms, on TUESDAY NEXT, October 7, at half-past 12 o'Clock.

Tuesday Next.

The first portion of the well-known and extensive Collection of LILIES, formed by Mr. W. Gordon, of the Nurseries, Twickenham.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, October 7, 1890, at half-past 12 o'Clock precisely, the first portion of the extensive Collection of finest-grown LILIES, comprising about 400 lots, and embracing most of the finest varieties in cultivation. Also 7000 LILIUM AURATUM and 25,000 KENTIA SEEDS.

On view morning of Sale, and Catalogues had.

Wednesday Next.

AZALEAS and CAMELLIAS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, October 8, 1890, at half-past 11 o'Clock to the minute, 300 AZALEA INDICA, 30 specimen ditto, 300 AZALEA MOLLIS, 100 CAMELLIAS, and other Plants from the Continent; a quantity of NIPHETOS ROSES; choice Decorative PALMS from a London Nursery; DUTCH BULBS; a fine selection of NARCISSUS from a private grower; HARDY BULBS, &c.

On view morning of Sale, and Catalogues had.

Pine-apple Nursery, Maida Vale, W.

PEREMPTORY SALE.

IMPORTANT CLEARANCE SALE by order of Messrs. Hooper & Co. (Limited), who have acquired a building lease for 99 years of this valuable property.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Pine-apple Nursery, Maida Vale, W., on WEDNESDAY NEXT, October 8, and three following days, at 12 o'Clock precisely each day, the whole of the exceedingly choice COLLECTION of GREENHOUSE PLANTS, including a perfectly unique collection of seedling Blandfordias, many thousands of Palms, including Kentias, Latanias, Arecas, &c.; a splendid collection of Orchids, Nepenthus Azalias, Lapagerias, and other Stove and Greenhouse Plants, and a quantity of Herbaceous Plants.

Also the ERECTIONS of 19 capital GREENHOUSES, with several thousand feet of HOT WATER-PIPING, BOILERS, &c.; several PITS and FRAMES; 100 loose SASHES, and UTENSILS in Trade.

May be viewed any day prior to the Sale. Catalogues had on the Premises; of Messrs. HOOPER AND CO., Limited, Covent Garden, W.C.; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Friday Next, October 10.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. W. Thompson & Son, of Clovenfords Nursery, Galashiels, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 10, at half-past 12 o'Clock precisely, a choice selection of Established ORCHIDS, including Lælia superbiens, Sobralia xantholeuca, fine plants; Cœlogyne cristata alba, C. Massangiana, Dendrobium nobile Cooksonii, D. Leechianum, Cypripedium Spicerianum, C. Arthurianum, Cattleya Wagneri, true; a fine lot of Phalænopsis, Odontoglossums, Masdevallias, &c.; also 10 unnamed hybrid Cypripediums, the parentage guaranteed to be as stated. There will also be included 1000 Alexandræ, established plants, together with a quantity of Established Orchids from a private Collection, and many in Flower and Bud; also a copy of Bateman's *Mexican and Guatemalan Orchidaceous Plants*.

On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will include in the SALE by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 10, at half-past 12 o'Clock, a nice plant of the lovely and chaste pure white LÆLIA PRÆSTANS ALBA, the snowy whiteness of its sepals and petals being in striking contrast to the lip of the labellum, which is rich crimson. Only one other plant besides that now offered, is known to exist, and the Collector in Brazil could find no more where it grew. The plant has seven pseudobulbs, four of them with leaves, and a young growth with two flowers. It was exhibited before the Floral Committee of the Royal Horticultural Society on October 8, 1889, and was awarded a First-class Certificate. An illustration of it was given in the *Journal of Horticulture* on October 17, 1889.

At the same time will be sold LÆLIAS PRÆSTANS, MARGINATA, and DAYANA, each in flower.

On view the morning of Sale, and Catalogue had.

IMPORTANT SALE.

HOOPER & CO., Ltd., PINE-APPLE NURSERY, MAIDA VALE,

Having acquired New Leases for 99 years on the valuable property known as the

BEG TO ANNOUNCE THAT THEY HAVE INSTRUCTED

MESSRS. PROTHEROE & MORRIS to offer for Public Sale a LARGE PORTION of the VALUABLE STOCK, the back portion of the Nursery being now devoted to building purposes. The Sales will comprise a

CHOICE and UNRIVALLED COLLECTION of GREENHOUSE PLANTS,

including the perfectly unique group of SEEDLING BLANDFORDIAS, the only one in existence of this charming Australian flower; MANY THOUSANDS of BEAUTIFUL PALMS, including Kentias, Latanias, Cocos, and the leading decorative sorts, grown here in immense quantities for the furnishing trade; a very fine Collection of ORCHIDS, some wonderful plants of Nepenthes, loaded with Pitchers, and innumerable Table and Decorative Plants.

Also a large number of HERBACEOUS PLANTS and Choice HARDY SHRUBS.

There will also be offered nineteen capital GREENHOUSES, several thousand feet of 4-inch Piping, thousands of good Stock Bricks, a great many loose Sashes, several Boilers, &c., &c.—the whole presenting a rare opportunity for Amateurs and the Trade.

The SALE will take place on WEDNESDAY the 8th inst., and THREE FOLLOWING DAYS.

Catalogues of HOOPER AND CO., LIMITED, Covent Garden, W.C.; or, PROTHEROE AND MORRIS, 67, Cheapside, E.C.

Commissions to Buy will be undertaken without Charge.

HOOPER & CO., Limited, COVENT GARDEN, LONDON, W.C.

Horsell, near Woking.

SALE of exceptionally well-grown NURSERY STOCK, by order of Mr. R. Collyer, in consequence of the expiration of lease.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Cart House Lane Nursery, Horsell, near Woking (½ mile from Woking Station, S.W.R.), on MONDAY, October 13, and two following days, at 12 o'Clock precisely each day, a large quantity of well-grown NURSERY STOCK, comprising 8500 English Yews, beautifully furnished trees—probably one of the best lots in the trade; thousands of Laurels, 1 to 5 feet, in variety; 1000 hybrid and ponticum Rhododendrons, 20,0 green and variegated Hollies, 600 specimen Border Shrubs, thousands of Ornamental and Forest Trees, 5000 Apples and Plums.

Particular attention is called to this important Sale, the whole of the Stock being unusually well-grown, and in splendid condition for removal.

May be viewed any day prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Plumstead.

ABSOLUTE CLEARANCE SALE, by order of Mrs. H. Baker, the Land being required immediately for Building Purposes.

Important to the Trade.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Plumstead Nursery, Plumstead, Kent, on MONDAY and TUESDAY, October 13 and 14, at 12 o'Clock each day, absolutely without reserve, 20,000 PALMS, in 48 and 60-pots, consisting of Kentias, Latanias, Seaforthias, Cocos, and Arecas; 8000 FERNS, in 48 and 60-pots, comprising Adiantum cuneatum and formosum, Pteris in variety, and others; 1000 AZALEAS, amongst them many fine specimens of Fielder's White, invaluable for cutting; large White CAMELLIAS, 1000 Epiphyllums, 3000 Chrysanthemums, 4000 Marguerites and Pelargoniums; 14 GREENHOUSES, 2 PITS, 4000 feet 4-inch Hot-water PIPING, 1500 feet 3-inch PIPING; capital Market VAN, nearly new, in splendid condition; Open VAN, CART, and other effects.

May be viewed two days prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Hollamby's Nurseries, Groombridge, Tunbridge Wells.

GREAT UNRESERVED SALE of valuable NURSERY STOCK recently transplanted and carefully prepared for removal.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, on TUESDAY and WEDNESDAY, October 14 and 15, at 12 o'Clock precisely each day, the valuable NURSERY STOCK, comprising enormous quantities of Coniferæ, ornamental, deciduous, and other Shrubs, Standard, Dwarf and Climbing Roses, 90,000 Larch and Scotch Firs, Ash, and Spanish Chestnuts, 20,000 Cupressus Lawsoniana and Thuia Lobbi, 20,000 Quick, 10,000 Rhododendrons, 8,000 Portugal and other Laurels, 3000 Hardy Climbers, established in pots.

The Stock may be viewed any day (Sunday excepted), prior to the Sale. Catalogues may be had at the Nurseries; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, E.C.

American Nurseries, Leytonstone.

Highly important four days unreserved Sale of beautifully-grown NURSERY STOCK; land required for Building.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, adjoining the Railway Station (where goods may be transmitted to any part of Great Britain), on MONDAY, October 20, 1890, and three following days, at 12 o'Clock punctually, the First Portion of the thriving and healthy young NURSERY STOCK, including about 50,000 Evergreen and Coniferæ Shrubs, in choice variety, 1 to 2 feet; 5000 fine Border Shrubs, 7000 named and ponticum Rhododendrons, 5000 Azaleas, 14,000 Ornamental and Forest Trees, 10,000 Standard and other Roses, a large quantity of selected Fruit Trees, Irish Ivies, and other hardy Climbers.

May be viewed any day (Sunday excepted) prior to Sale. Catalogues had on the Premises, and of the Auctioneers 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

The Second Sale of Outdoor NURSERY STOCK will take place on the Premises, on MONDAY, November 17, and following days.

Brixton, S.W.

SALE of well-grown NURSERY STOCK and GREENHOUSE PLANTS, by order of Messrs. Ponsford & Son.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Loughborough Park Nursery, Brixton, S.W., on THURSDAY, October 16, 1890, at 12 o'Clock precisely, a portion of the healthy general NURSERY STOCK, comprising 7000 Golden and Green Euonymus, 1200 Cupressus, Thuias, 2500 Aucubas, 500 extra-fine smooth-leaved Hollies, 2000 Laurels, 3500 oval-leaved Privet, 1000 standard and young Mulberries, large quantities of standard Forest and Ornamental Trees, thousands of Hardy Climbers, 5000 Ferns, 500 Ornamental Palms, and numerous other stock.

May be viewed prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Maresfield, Sussex.

IMPORTANT CLEARANCE SALE of valuable NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Piltdown Nurseries, Maresfield, near Uckfield, 2½ miles from Uckfield Station, L.B. & S.C.R., on TUESDAY, October 21, 1890, at 12 o'Clock to the minute, by order of Louisa, Lady Shelley, of Maresfield Park, the last portion of the well-grown NURSERY STOCK, including choice Border Shrubs, Thousands of Evergreens and Conifera Shrubs, 12,000 Standard and Dwarf Roses, finest varieties in cultivation; large quantities of Common Laurel, 1200 clean grown Apples, Gooseberries, and Currants, Thousands of Quick and Spanish Chestnuts, and various other stock.

May be viewed one week prior to the Sale. Catalogues had of Mr. BOOTH on the Premises; of Mr. SANDFORD, the Estate Office, Maresfield; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

East Dulwich.—Wednesday, October 22, 1890.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Seeger & Tropp, to SELL by AUCTION, on their Premises, at East Dulwich, on WEDNESDAY, October 22, 1890, commencing at half-past 12 o'Clock precisely, a large quantity of RARE and CHOICE WELL-GROWN HEALTHY ORCHIDS, many of which will be in bud or flower. Included in the long general List Catalogued, will be found the following:—

Brassia verrucosa and other varieties, grand specimens.
Cattleya Fausta.
Cattleya labiata, the best variety of the old autumn-flowering species; grand plant, 16 bulbs, 10 with leaves, 3 leads, 1 flower-sheath.
Cattleya intricata maculata, most distinct and beautiful hybrid.
Cœlogyne cristata Lemoniana, unique specimens.
Cypripedium Druryi, grand specimen, with 26 growths.
Cypripedium, all the leading best kinds.
Dendrobium splendidissimum.
Lælia elegans alba.
,, ,, Schilleriana.
Lælia grandis superba, the true old form, in bud or flower. The varietal name "superba" is appended to distinguish this fine Lælia from the ordinary type more frequently met with.
Lælia elegans Turneri.
Lælia Perrini alba, the pure white Perrini, and must not be confounded with L. Perrini nivea, which has a tinge of colour in the lip. Splendid plant, 6 bulbs, 5 with leaves, 1 lead, 1 flower-sheath.
Masdevallia sceptrum. This belongs to the window-bearing group (Cryptophoranthus).
Odontoglossum nebulosum candidissimum, the pure white form.
Oncidium, over 60 species.
Pleurothallis Roezli, perhaps the finest specimen in existence, with several flower-scapes now pushing.
Sobralia violacea, grand specimen.
,, Warscewiczi.
,, leucoxantha, fine specimen.
,, virginalis.
,, xantholeuca, three very fine plants.
Vanda tricolor variety, fine specimen.

The Sale will also include large importations of BRAZILIAN

Continued on next column.

Continued from previous column.

and MEXICAN ORCHIDS in best possible condition, and a great number of established plants in bud or flower.

Messrs. Seeger & Tropp's Orchid Nurseries are within 5 minutes' walk of East Dulwich Railway Station (L. B. and S. C. Ry.), and frequent trains run from London Bridge and Victoria. Plants will be on view the day previous and morning of Sale, and Catalogues obtained on the Premises; also of the Auctioneers at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C.

Canterbury.—Expiration of Lease.

Clearance Sale of the first portion of the Healthy and Thriving NURSERY STOCK, by order of Mr. J. Kennett.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, St. Martin's Nursery, Sturry, Canterbury, 1½ miles from Sturry Station, on WEDNESDAY, October 22, 1890, at 12 o'Clock sharp, without reserve, the first portion of the beautifully-grown NURSERY STOCK, in capital condition for removal, comprising 3000 Conifers and Border Shrubs, 3000 Fruit Trees, best named sorts; 46,000 Forest Trees, 3000 Gooseberries and Currants, and various other Stock. Mr. Kennett will undertake to carefully lift goods and convey to the Railway station at the mere cost of labour incurred.

May be viewed prior to the Sale. Catalogues had on the premises, and of the Auctioneers, 67 and 88, Cheapside, E.C.

Every Thursday.—Dutch Bulbs.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY NEXT, and every THURSDAY throughout the season, at half-past 11 o'Clock A.M., large consignments of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland; also Roman HYACINTHS and Paper White NARCISSUS. Lotted to suit all buyers.

On view morning of Sale, and Catalogues had.

On WEDNESDAY and FRIDAY EVENINGS, at half-past 5 o'Clock, SALES of Choice CUT FLOWERS. Entries invited.

Nursery Stock Sales conducted and Valuations made.

Auction Rooms and Offices, 6, Phillips Street, Birmingham.

Dorking, Surrey.

To Gentlemen, Nurserymen, Gardeners, and others.

ANNUAL SALE of SURPLUS STOCK, at the Dorking Nurseries, five minutes' walk from the Dorking Station, L. B. & S. C. Ry., and Box Hill Station, S. E. Ry.

MESSRS. WHITE AND SONS will SELL by AUCTION, on the Premises, as above, on TUESDAY and WEDNESDAY, October 14 and 15, 1890, at 12 o'Clock precisely, under instructions from Messrs. Ivery & Son, a great variety of thriving young NURSERY STOCK (in first-rate condition for transplanting, nearly all having been moved during the last two years), including Aucubas, 1 to 2 ft.; Box Hollies, Portugal Laurels, Golden and Common Yews, 2 to 4 ft.; Lauristinus, and other flowering Shrubs; Thujas of sorts, Abies Douglassi, Thujopsis, Retinosporas and Cupressus of sorts, 2 to 6 ft.; Pinus and Piceas in varieties, Spruce and other Firs of various heights, Cedars, Junipers, Araucarias, &c., and thousands of Common Laurels, 2 to 5 ft. A choice lot of Plants in borders, comprising handsome specimens of most of the above, with standard Acer variegata, Thorns of sorts, Catalpas, Chestnuts, &c.; also a quantity of ornamental trees such as Planes, Limes, Birch, Poplars, &c., and Standard and Pyramid Apples and Pears, choice Chrysanthemums in pots, and large and small specimens of Camellias.

Catalogues may be obtained at the Inns and Hotels in the neighbourhood, at the place of Sale, and of the Auctioneers, Land Agents, and Valuers, High Street, Dorking, and on Fridays at Leatherhead.

Wavertree Nurseries, near Liverpool.

MR. WM. HALSALL respectfully announces that he has been favoured with instructions from the executors of the late Messrs. S. & T. Davies, to SELL by AUCTION at the above nurseries, on WEDNESDAY and THURSDAY, October 15 and 16, at 12 o'Clock each day, the first portion of the General Stock of Hardy SHRUBS, IVIES, VIRGINIA CREEPERS, FRUIT and FOREST TREES, CAMELLIAS, AZALEAS, and other ORNAMENTAL PLANTS.

Catalogues may be had seven days prior to the Sale, on application at the Nurseries; or to the Auctioneer, Church Street, Prescot.

Castle Nursery, Norwood Road, West Norwood, S.E.
FOURTEENTH ANNUAL SALE of choice Established ORCHIDS and STOVE and GREENHOUSE PLANTS.

MR. H. J. BROMLEY is instructed by Mr. H. James, to SELL by AUCTION, on the Premises, Castle Nursery, West Norwood, S.E., on WEDNESDAY, October 15, 1890, at 11 o'Clock precisely, a large and important collection of beautifully-grown ESTABLISHED ORCHIDS, clean healthy plants, including Odontoglossums and Dendrobiums, namely: Odontoglossum Pescatorei, Alexandræ, tripudians, constrictum, cordatum, macranthum in spike; Dendrobium nobile, nobilius, Ainsworthii, and many others; specimen Cypripedium insigne, C. Lawrenceanum; Lælias and Cattleyas, comprising Lælia anceps, Cattleya Trianæ fine plants, Mossiæ, and Mendelii; Masdevallias, specimen Stove and Greenhouse plants in variety, consisting of Azaleas, Foliage Plants, Ferns, Chrysanthemums, Ivies, Passifloras, Vines, &c.

May be viewed two days prior to the Sale. Catalogues may be had on the premises, and of the Auctioneer at his offices, near the Railway Station, West Norwood, and at Forest Hill.

FOR SALE, a SEED, FLORIST, and NURSERY BUSINESS, in a good Market Town in the North of England. Incoming light. Good opportunity.
Address, M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, NURSERY and SEED BUSINESS, in Provincial Town.
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Island of Jersey.
NOTICE TO SPECULATORS.

FOR SALE in PERPETUITY, owing to the Proprietor's death,

THE FINE PROPERTY, known as "THE VINERIES," situated in St. Lawrence Valley, about 2 miles distance from St. Helier's, formerly the property of Edward Pond, Esq.

The said property, consisting of DWELLING-HOUSE, COTTAGES, STABLES, COACH-HOUSE, about 3000 feet long of GREENHOUSES, HOT-HOUSES, PACKING-HOUSE, FRUIT TREES in full bearing, the whole measuring 11 vergées, 4 perches, 21 feet (5 acres), facing south.

This property is admirably situated in one of the finest localities of the Island, and by its position worth the special notice of speculators.

For particulars and Price, apply to JOHN SYVRET, Solicitor, No. 16, Royal Square, St. Helier's, Jersey.

Fruit Farm.
TO BE LET, a FRUIT FARM, in Oxfordshire. Apply to Mr. COOPER Western Elms, Reading, Berks.

BY ORDER of EXECUTORS of the late Owner who occupied the property for 30 years.

TO BE LET, capital RESIDENCE (10 Bed and Dressing Rooms), Stabling, Lodge, Garden, Vineries, and 20 Acres. Quite a country place—at Herne Hill, and with country surroundings, although within 15 minutes' ride of St. Paul's and Victoria Stations.
Messrs. DEBENHAM, TEWSON, AND CO., 80, Cheapside, E.C. (44,063)

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MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

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Price 21/- per cwt., or 3/6 per stone,

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Customers will be allowed to compete for Potato Prizes with tubers not grown from our seed.

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THE GARDENERS' CHRONICLE,

Vol. VII., Third Series, JAN. to JUNE, 1890.

W. RICHARDS, 41, Wellington Street, Strand, W.C.



THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 4, 1890.

RANGEMORE HALL.

THE hall built by the late Mr. Bass, and now occupied by his son, Lord Burton, is pleasantly situated in Needwood Forest, six miles from Burton-on-Trent. A pleasing home landscape lies before the house. There is nothing very bold or striking about the scenery of Rangemore. No turbulent sea dashes here upon a broken coast. You have not the roar of waves always in your ears, or the dancing of breakers upon the rocks before your eyes. One cannot catch herrings from the drawing-room windows. No mountains are piled up in Needwood Forest. There are no steep declivities, fast-running streams, or lakes, except the sheet of water within the grounds immediately in front of the hall, with 30 acres of well-kept lawn on its banks. Nature wears a smooth face hereabouts; but she displays what is better than fugitive charms, a homely beauty and a domestic aspect that never pall upon the senses.

To come to particulars, the house fronts the south, with a slight turn to the east, which improves the aspect, for no house can be perfect in position, which has not the sun, early and late, shining into some of its windows. The view extends across the lake, and down the little valley which holds this welcome bit of water, past an Oak-crowned hill in the park, and over the country for a distance of 8 or 10 miles, as far as the villages of Gresley, Lullington, and Clifton, whose church-steeples are seen among the trees. Next to the scenery, the soil claims notice. The great Oaks tell of its character. There are the Swilcar Oak, the King's Oak, and a dozen other famous trees, all of which I measured and described in the *Gardeners' Chronicle* some years since; and there are the great Oaks in Bagot Park, hundreds, thousands of them, and many of the number are magnificent boles 18 to 28 feet in girth. The

only kind of soil that produces such oaks as those of Needwood Forest is a deep clay. The geological formation here is the new red sandstone, and however desirable the marl of that formation may be for oaks, one is bound to admit that it is a heavy intractable soil for gardening. Peaches and other fruits from eastern climes will only ripen here outdoors on a made soil under the most favourable circumstances. Tomatos have hardly ripened this year even in a warm corner on the wall of a greenhouse with another greenhouse in front, where the radiation of heat must be great. All tender shrubs are at a disadvantage, and require under them soil brought from the Valley of the Trent. Rangemore lies high.

Under these circumstances, Lord Burton has shown good sense as well as good taste, in declining to rely, for the decoration of his grounds, on shrubs to which the soil and climate are inimical, and which, after all, would be out of harmony with the Oak and Holly of the forest. He rests content, as well he may, with shrubs and trees that are mainly native, and which best associate with the natural timber of the forest. A private walk, however, leading from the house to the church, is planted on either hand with Wellingtonias and Deodars, which, with made earth beneath them, have done very well, leaning very slightly, like most of the trees here, from the west, which is, in this neighbourhood, the least genial quarter. The church which I have just mentioned was built by the late Mr. Bass for the hamlet of Rangemore, and a beautiful and highly-decorated church it is. The remains of the founder rest in the graveyard, and Lord Burton has made an addition to the church as a memorial of his father. He has also set apart a recreation ground for his neighbours, and has erected a handsome club-house for their use, containing a capital billiard-room, a reading-room, and convenient offices. I could enlarge further on these manifestations of a kind heart and enlightened mind, and on Lord Burton's conduct as a landlord, which has won for him deserved respect, but the garden gate stands open, and my guide waits.

Fruit and vegetables have always been admirably managed at Rangemore, and I remember that in reporting the "Agriculture of Staffordshire" for the Royal Agricultural Society in 1869, I was told by Mr. Bass's steward that Grapes and a Cucumber appeared on the table every day throughout the year. The arrangements for forcing fruits and heating houses are very complete, and the houses, which are very numerous, are conveniently built in close proximity to each other. They are all heated from one boiler-house, which is 60 feet below the level of the gardens, so the cold water runs down as the hot water runs up. There are 600 yards of mains, which have branches right and left passing into the houses. An enumeration of the houses will convey an idea of the extent of this department of the gardening. There are six vineries, seven Peach-houses, one of which is 100 yards long; two Fig-houses, one stove, one Azalea-house, one Camellia-house, one East India Orchid-house, one Cattleya-house, and these others in addition—one cool Orchid, one Eucharis, two Carnation, two Cucumber, one Strawberry, one Tomato, two Melon, one fernery, one propagating, two Gloxinia, two Cyclamen, one conservatory, and eight pits for various flowers.

The earliest Peaches are Waterloo and Alexander, and the first dish was gathered April 15, from which date a constant succession will be kept up till early in October. Barrington is the latest; Raymacker is a late Peach approved of here, and Sea Eagle is still later. The latest Nectarine is Victoria. Grapes are preserved through the winter on a very simple plan. No patented apparatus is used for the preservation of the bunches. A common wine-bottle is all that is needed for the safe-keeping of each bunch. There were 400 bottles in the fruit-room on September 9, and each of these will be filled with water, and receive its bunch after the ripening of the fruit. The sorts selected for hanging are Lady Downe's Seedling, Alicante, and Muscat of Alexandria. The two first-named sorts will hang till the new crop comes, in the middle of May—the Muscats hang till the middle of April.

It is a most desirable point in growing Grapes to keep the roots well fed at the surface. A large Grape-growing establishment could be named where the roots are prevented by the substratum from penetrating more than 18 inches deep. Mr. Bennett attracts them to the surface by loosely spreading over it pebbles as big as two doubled fists. To use his own graphic expression, before this was done, the Vine border was always either in the condition of dust or mud. But the pebbles break the force of the water, and it is now easy to keep the border properly moist and not too dry. I was invited to lift some of the pebbles, and beneath them the thick white roots of the Vines had grown up to the under side of the pebbles, looking like herring-bones. Probably straw, or long manure, would break the force of the water, but such stuff is less permanent and desirable than pebbles. I have since seen an amateur's vinery in Kent, where the Grapes are planted inside the house in a border 3 feet deep, and Lady Downe's Seedling is shanking off badly, though the other sorts seem to be less liable to that disease. In examining the border, we found very few roots at the surface, where healthful sap would probably be elaborated more abundantly than at a depth of 3 feet. I would venture to recommend, therefore, pebbles and surface-feeding.

The Brown Turkey Fig is esteemed here beyond all others, and fruit was being gathered in September from the same tree which produced its first dish on May 1. The favourite Melon is Whillan's Hybrid; the latest crop was setting at the time of my visit. The number of Strawberry plants in pots for winter forcing is 5000. We passed up an avenue of Chrysanthemums 10 feet high, 1000 of them in large pots.

The soil is not favourable to the growth of the choicest fruit outdoors. All the wall fruit is grown on made earth, with concrete below at a depth of 2 feet. The cordon system fails utterly here, owing to the cold, damp soil; and no doubt one reason of the failure is, that in such a soil the roots need excessive pruning. Early Pears only are attempted here, as the later ones do not ripen, but become shrivelled in the fruit-room. The early sorts only develop flavour, and the best are Louise Bonne, Marie Louise, Jargonelle, Williams, and Bon Chretien.

A white and a rose Lapageria covers the whole roof of the cool Orchid-house, and they were blossoming so magnificently, that I inquired as to the special points of their treatment. It is simple enough, and may be easily adhered to by those amateurs who desire for their cool-houses a long-lasting and most beautiful creeper. Mr. Bennett plants this flower in peat mixed with loam, and sandstone broken up in lumps as large as cricket-balls. Plenty of water and plenty of drainage are necessary, and in order to secure the latter, stones, or other draining material, are placed in the border at depths varying from 1 to 1½ foot from the surface after the soil is laid on. The drainage therefore, before the soil covers it up, takes the shape of a corrugated iron roof, and in such a surface the contents of the water-pot cannot possibly rest long.

If I may mention such a small matter as a beetle-trap, I would say that Birkenhead's (which may be obtained at Sale near Manchester) is the best yet seen at Rangemore. It consists of a simple box with a glass cover sloping to the hole in the centre. A bit of fat, or Potato, or other attractive bait, is put into the box, the beetle—all unmindful of the saying, that men and beetles, once on the slope, may soon slide into a bad place—marches down the slippery slope, and falls through the hole into the trap below. It is a capital contrivance.

The unmarried men among the twenty-six gardeners reside in an excellent bothy in the gardens, where a reading-room is provided, with a library of 300 volumes well suited to aid their young ambition in the toilsome work of climbing. "Excelsior!" is the motto here, and Lord Burton has shown true sympathy for toilers in providing for them several daily and weekly papers, with many popular works, and a well-chosen selection of horticultural literature and useful Cyclopædias. I observed on the shelves, Thompson's *Gardeners' Assistant*, Dr. Hogg's *Fruit Manual*, Shirley Hibberd's *Rose Garden*, and the *Gardeners' Chronicle*, bound in annual volumes since 1850. This is but a slight sketch of the gardens at Rangemore, but it must suffice for the present. Mr. Bennett proved a willing and accomplished guide, but I was prevented by circumstances from availing myself further of his stores of knowlege. *H. E.*

New or Noteworthy Plants.

SOBRALIA LOWII, *Rolfe, n. sp.**

This is a dwarf and pretty little species, introduced some few months ago from the Cauca, New Granada, by Messrs. Hugh Low & Co., of Clapton. There are several plants, with stems varying from 12 to 18 inches high, and as all are showing flower, it appears to be a free-flowering little species. The flowers are of a uniform bright purple shade. It is closely allied to S. sessilis, Lindl., and S. decora, Batem., but the colour and other details of the flower, as well as the native country of the plant, are quite distinct. I cannot find that it has hitherto been described, and therefore propose to name it after the firm which has introduced it and so many other useful garden Orchids. *R. A. Rolfe.*

Sobralia Wilsoniana, *Rolfe, n. sp.*†

The Sobralias are among the glories of Tropical America, as various travellers have borne testimony, yet it must be confessed that, with a few exceptions, they are not great favourites in gardens, on account of the room they require, and their fugacious flowers;

* *Sobralia Lowii*, n. sp.—Plant 1 to 1½ feet high. Leaves narrowly lanceolate acuminate, 5 to 6 inches high, ¾ to 1¼ inch broad, as well as the sheaths covered with minute black hairs. Bracts lanceolate, acute, hairy, 1 inch long. Flowers solitary, of a uniform bright purple shade. Sepals lanceolate, acuminate, 2 inches long. Petals a little shorter, broader, and more obtuse. Lip elliptical, obtuse, crispo-undulate, a little shorter than sepals; disc smooth, the nerves scarcely thickened, except at base, where are a pair of linear, white, fleshy, calli, 4 to 5 lin. long. Column white, teeth narrow, apex acute and recurved. From the Cauca, New Granada.

† *Sobralia Wilsoniana*, n. sp.—Leaves lanceolate, very acuminate, 7 inches long. Bracts narrowly lanceolate, acuminate, 3 to 4 inches long. Sepals narrowly lanceolate, acuminate, 4½ inches long, white faintly suffused with pale rose. Petals a little broader, similar in colour. Lip oblong, emarginate, crispo-undulate, 3¾ inches long; throat and disc bright yellow, with three very indistinct smooth keels and a pair of linear white swollen calli near base; margin whitish, faintly suffused with pale rose; front lobe rosy-pink. Column white, pale sulphur on face, teeth fleshy, linear, curved.

while to the botanist they present considerable difficulty in their satisfactory discrimination. The subject of the present note is no exception; but it is an exceedingly fine species, and well worthy of a place in the most select collections. It was introduced from Central America with S. leucoxantha by Messrs. F. Sander & Co., of St. Albans, from whom a specimen has been received at Kew. A plant has also been acquired by A. Wilson, Esq., of Westbrook, Sheffield, who has also sent a plant, and after whom the species is named. Several very fine things have been sent to Kew from this gentleman's collection, notably the rare and beautiful Odontoglossum Harryanum flavescens. Sobralia Wilsonianum appears to be a near ally of S. Warscewiczii, Rchb. f., known to me only by a single flower sent by Sir Trevor Lawrence, and which I suppose represents the genuine species. That species, however, has a shorter and broader lip, shorter and less acuminate segments, and somewhat deeper colours. The vegetative organs may also present differences were I able to compare them with each other. I believe it is a comparatively dwarf species, somewhat resembling S. leucoxantha, Rchb. f., in habit and stature. *R. A. Rolfe.*

Masdevallia × Measuresiana, *n. hyb.**

We have now another pretty hybrid to add to the list of Masdevallias artificially raised in this country, and this time the credit belongs to Messrs. F. Sander & Co., of St. Albans. M. tovarensis was the seed-bearer, the pollen being obtained from M. amabilis. In habit the plant somewhat resembles the pollen-parent, also in the terete peduncles; but in shape and colour of the flower the characters approximate more nearly to the mother plant. The influence of M. amabilis, however, is distinctly seen, especially in the longer tails of the lateral sepals. The perianth is white, the nerves and margin lilac, and the tails purplish-brown near the base, paler and greener towards the apex. A small plant has now flowered for the first time, showing a pretty and delicately-coloured little flower, but capable of much improvement as the plant becomes stronger. It is named by request after R. J. Measures, Esq., of Cambridge Lodge, Flodden Road, Camberwell, a well-known lover of this pretty little genus, and the possessor of a very complete collection. *R. A. Rolfe.*

HINTS TO FRUIT GROWERS.

Now that harvest work and hop-picking are over, will you allow me to call the attention of fruit-growers to a few facts, and to follow them up with hints for the producers' benefit next season. Orchard fruit generally has been a short crop this season. But the care given by growers to grease-bands, and washing the trees, has sensibly diminished the plague of caterpillars and aphides; the trees look far more healthy than for many years past, while the heavy rains of the past summer have kept them growing freely, and much wood has been built up. Added to this, the trees carry but few fruits (except in a few favoured spots), and the wood has been ripened by the sunshine of the past three weeks. Therefore, subject to the usual "if's" incidental to fruit culture, we may infer that 1891 will be a fruitful year—foliage is good, buds are plump, wood is mature, and the roots are in good order—four necessary conditions.

In case of a heavy crop, only the finest samples will sell at a good price, and I venture to suggest to growers that they should at once (September and October) have their old orchards examined; all crossing boughs should be removed, and the heads of the trees opened so that a man can readily get his head and shoulders between the branches; all dead wood should be cut out, as it can be detected easily now that the leaves are still on the trees. Cherries should have all "started" boughs (*i.e.*, those split in gathering) cut clean away, as they will gum much less if pruned now; and the same remarks apply to Plums. Boughs over 1 inch across should be smoothed over with a sharp knife, and these cuts will partially heal before Christmas. Should old trees be over-full of fruiting spurs, they may be thinned from the under boughs; and all prunings should be gathered in a heap and burnt at once, to kill the eggs of moths, &c., which generally choose loose bark and cankered spots in which to lay their eggs. By these means trees will be enabled to still further perfect their growth, and the fruits will become larger, and clearer in the skin, than where these precautions are not taken, and growers will secure a better price—while the strain being less on the pruned tree than on one that is not pruned, and consequently full of useless wood and foliage, the chance of a crop in 1892 will be greater.

Young orchards should have the central spray (fine shoots) of the standard trees cut away, so that sun and air may ripen the shoots, which form the base of the future tree. These base shoots should be left at full length, and may be shortened in February or March next. Raspberries should have the old canes removed at once, and, if needful, the stools may be thinned. I strongly advocate the above named operations being done now, as no secondary growth will form to weaken the trees, and exhaustion by a heavy crop will not be felt in 1892 by the fruit trees taking a rest to recover from the over-crop of the preceding year. Much good can also be done by hoeing and skimming plantations, to sweeten the soil, and make it more workable when the digging takes place. *George Bunyard, Maidstone.*

NEW HARDY HYBRID FRENCH GLADIOLI.

Having had the pleasure of describing, about this time last year, in the columns of the *Gardeners' Chronicle*, the first of a new race of hardy hybrid Gladioli raised by M. Lemoine, of Nancy, and distributed by him towards the end of last year under the distinctive title of Gladiolus Nanceianus, I hope that a few descriptive notes as to the respective merits and beauties of the other eight varieties, making up the set of nine, as bloomed this summer to great perfection in my garden, may not be uninteresting to the readers of the *Gardeners' Chronicle* who are admirers, if not cultivators, of these beautiful flowers.

President Carnot.—The lovely variety referred to at the commencement of these notes was, through the kindness of its raiser, sent to me a year in advance of its distribution to the public, and has been already fully described. It quite maintained its high character for beauty on its second flowering this year with me, and quite confirmed the high opinion I then formed of its merits. The other eight varieties are:—

De Candolle, which is a tall, slender-growing sort, with the flowers irregularly distributed round the spike. The flowers are large and well-opened, but of thin substance, and but imperfectly formed. They are of a light shade of red, flaked all over with a deeper shade of orange-red, with a rosy-purple blotch, faintly edged with white on the lower petals. Compared with its brethren, this variety has but small merit to recommend it.

Comte Horace de Choiseul is a tall and slender-growing variety of great beauty, with large handsome well-opened flowers of perfect shape, and of a brilliant shade of light scarlet, flamed with carmine, and with most distinctly marked blotches of a deep shade of crimson, tipped with creamy-yellow on the two lower petals. A most distinct and beautiful variety, which should be in every collection.

Monsieur Hardy is a fine vigorous grower, with large well-opened flowers of a vinous shade of purple, flamed with carmine, and distinctly spotted with crimson on a creamy-yellow ground on the two lower petals.

P. Duchartre is a variety of medium height and slender habit of growth, with a branching flower-spike. The flowers are of large size, and well expanded, but of not quite perfect form, owing to a partial depression of the top centre petal, which is a distinguishing characteristic (but in a much more strongly marked degree) of G. Saundersi, one of the parents of this new race. The colour is a rich shade of vinous scarlet, flamed with carmine, and marbled with creamy-white spots on the lower petals.

Monsieur Lefebvre is a rather slender grower, with unbranched flower-spike. The flowers are of large size and excellent form, with, however, a slight tendency to depression in the upper centre petal. The colour is light scarlet, distinctly veined with carmine, with most clearly-marked blotches of creamy-yellow, spotted with carmine towards the throat of flower on the two lower petals.

Monsieur Laforcade is a tall, vigorous-growing variety, with branching flower-spike, and large, well-opened flowers of a pleasing shade of light scarlet, with large and distinct creamy-yellow blotches, profusely spotted with carmine on the two lower petals. Were it not for the unfortunate depression of the upper centre petal previously referred to, this would be a most beautiful and desirable variety.

Maurice de Vilmorin is a vigorous grower, with branching flower-spike and large well-expanded flowers of perfect form, and of a most curious shade of rather dull violet, shaded with white. The two lower petals are clearly spotted with carmine, and a broad pure white streak down the centre of each of them. This variety, though not very beautiful in itself, may prove to be the parent of much better things of a clearer and purer shade of violet.

Charles Baltet is an extremely tall and vigorous-growing variety, with very branching flower-spike, forming very large bulbs, and producing fine large flowers of a curious shade of rosy-violet with a clear white throat, bordered with a band of clear rose colour. This variety closely resembles Maurice de Vilmorin, but has larger and better-shaped flowers of a decidedly brighter and more pleasing shade of colour, and is in every way an improvement on it.

From the above descriptive notes, it will be seen that this set of nine varieties of this new and beautiful race of hardy hybrids contains a large majority of most beautiful flowers, only one amongst them being distinctly inferior, and one other, though in itself novel and curious, is eclipsed and surpassed by the superior size and beauty of another variety of a similar shade of colour. *W. E. Gumbleton, Belgrove, Queenstown, Ireland.*

EDRAIANTHUS.

The family of Campanulaceæ furnishes us with several genera which have not, on a superficial glance, a single point of resemblance between them. Take, for example, Campanula and Phyteuma, Edraianthus and Jasione. The genus Edraianthus, D.C., or Hedracanthus, Kerner, is one of the most interesting and characteristic of the whole family. It is native of the Eastern Alps, the Carpathians, and the mountains of Eastern Europe. The genus is only represented by dwarf species, covering the soil, and carpeting it with blue or dark violet flowers, which are generally in terminal heads, as in Campanula glomerata. The flowers are like those of Campanulas.

We cultivate seven species of Edraianthus in the Alpine Garden of Plainpalais, and I must say that, in spite of the reputation which these plants have of being difficult to cultivate, we raise them easily, and obtain splendid specimens. This greatly surprises the English amateurs who visit our garden, as the Edraianthus do not readily succeed in the damper

* *Masdevallia* × *Measuresiana*, n. hyb.—Leaf oblanceolate, minutely tridenticulate, concave, petiolate, 2½ to 3½ inches long. Peduncle, 5 inches high, terete, (at present) one-flowered. Bract, ½ inch long, pallid. Perianth white, with lilac nerves and margin, the tails purplish-brown near base, paler and greener above; tube narrow, sub-compressed, 5 lines long; upper sepal triangular, tail slender, ¾ inch long; lateral sepals united into a broad body about 5 lines long, the free parts very shortly and broadly triangular, tails ½ inch long. Petals white, with lilac mid-nerve, obliquely oblong, narrow and tridenticulate above, ½ inch long. Lip ligulate, acute, white, with margin and mid-nerve at apex lilac. Column white, with violet-purple acute angles.

climate of Britain. They belong to the flora of dry districts among the Alps, above all of the Carpathians, where some districts are dry, arid, or desolate. We raise the plants in quantities for our English clients, from whom we have a regular demand for the different species, and which they find great difficulty in raising from seed. The following are the species in question :—

Edraianthus caricinus, Schott, from the Carpathians and Dalmatia; E. caudatus, Vig. (synonym for E. dalmaticus, D.C.), from Bosnia and Dalmatia; E. croaticus, Kerner (synonym of E. Kitaïbeli, Koch), from the Carpathians and Croatia; E. Dinaricus, Kerner, from the Eastern Alps; E. pumilio, D.C., from the Eastern Alps and Dalmatia; E. tenuifolius, D.C. (E. graminifolius, Kerner), from the Eastern Alps. These six species have all narrow, linear leaves, ciliate along the edges, and more or less elongated.

E. pumilio and Dinaricus, have peculiar leaves, in rosettes, very glaucous, almost blue, and very short. The habit is dwarf and stunted, the plants growing in dense little cushions, somewhat resembling those of Silene acaulis and the Androsaces. The flowers of these different species are like little bells clustered together, as in Campanula glomerata, and borne on more or less long stalks, which generally bear a few leaves also. The flowers are clear blue.

Another species, Edraianthus serpyllifolius, D.C., is totally distinct in habit, foliage, and blossoms. The short leaves are arranged in little rosettes much less markedly than are those of E. pumilio and E. Dinaricus, and furnished along their edges with very short hairs; the blade of the leaf is dark shining green, and in shape elongate-lanceolate. The flowers are arranged in groups of about three or four, and form a loose panicle. The corolla is bright dark violet, and the flowers are borne on graceful reddish-purple peduncles.

As I have said before, the cultivation of Edraianthus is easy. They are easily raised from seed sown in October and November, or in March and April in a cool frame. They should be pricked out in light soil, and mixed with calcareous sand. I believe that the cause of the ill-success of many English gardeners is due to the fact that they plant them in sandy soil, or peat; instead of this, they require calcareous soil. I give them a soil composed of equal parts of peat, leaf-mould, and loam, with the addition of some calcareous sand for the young plants.

The seedlings are then planted out in pans, and finally on the rockery where they are exposed to the sun, and on calcareous soil. They succeed best in an upright position, and in the chinks of old walls. This plan is recommended for trial in the damp climate of England. I have planted quite a collection on the highest and most fully exposed and open point of our Jardin Botanique de la Linnæa (at an elevation of over 5500 feet), where they get the full sun. They there do splendidly, and are covered with flowers and fruit. *H. Correvon, Directeur du Jardin Alpin de Genève.*

LILIUM HENRYI.

Lilium Henryi, the new Chinese Lily, is most like tigrinum in the shape and size of the flower, and the direction of its segments, but it has broad leaves, like those of speciosum and auratum, without any bulbils in their axils, and the perianth-segments are less imbricated, bright yellow, with a few minute reddish-brown dots, and a few large basal papillæ. It is one of the numerous interesting new plants which have been found by Dr. Henry during his recent explorations of Western China. Its discoverer is now in England, and is engaged in the distribution of a large collection of plants which he has brought home. A full description was given in our columns by Mr. J. G. Baker in December, 1888, p. 660, when the first dried specimens arrived. Now it has been introduced in a living state through Mr. Chas. Ford, of the Hong Kong Botanic Garden. Our drawing (see fig. 75) was made by Mr. Allen from a plant that flowered at Kew this summer.

GLEANINGS FROM NORTH NORFOLK.

The traveller whose route takes the direction of King's Lynn to Wells, has not left the fenny district of East Anglia in his rear on reaching the former old sea port, as soon becomes evident on looking seawards, if he be travelling by the railway from that place to Hunstanton and Wells.



Fig. 75.—Lilium Henryi. Flower yellow with red dots.

The distant land line is the coast of Lincolnshire, dams, dykes, sometimes a few trees, or what at the distance look like trees, and perhaps a church tower. The immediate foreground consists almost wholly of marsh meadows, sometimes salt, as is betrayed by the quantities of Salicornia herbacea, Marsh Samphire, and other maritime plants growing in them. It is a famous grazing ground for horned stock, which is some compensation for its uninteresting character. The comfortable-looking villages of red brick or brown and generally unhewn stone houses, lie on the right of the line, and are, thanks to the common sense of the original founders, usually under the shelter of a hill or in a hollow that can afford them a certain amount of protection from the sea winds. Behind these natural shelters, simple gardening is carried on pretty successfully, although the soil is much mixed, sterile sand and gravel with only a minimum of peat, abutting in some cases on deep loam. Apricots were abundant this year; some grand crops might have been observed in several of the villages that lie nearest to Sandringham, and the fruits individually were very fine. Evidently much more might be done in Apricot culture in this mild district. Some of the Apricot trees ran up to the eaves of one-storied dwellings.

The Apple crop on standards was very varied, trees being noticed without a fruit, others had half a crop, and some were bearing heavily. But this is precisely the kind of locality where standards are the most unsuited for general planting, the bush or tree without a leg being better, as affording a greater chance of securing a crop of sound fruit in spite of any amount of wind. It is just the kind of knowledge that is most needed here which the "wander teacher"

could give. What to plant; how to plant it, and harvest, and market the fruit.

What we now find in this stretch of maritime land in the way of gardening, aye, and farming also, does not date further back than the beginning of the century, for at that time the father of the first Earl of Leicester began those experiments in farming which his son continued, and which made Holkham renowned, much of the land between that place and King's Lynn was either sandy waste or very poorly-farmed holdings. In this case the good example and ready help of the large landed proprietor, have helped gardening in this district, as well as spread a knowledge of high-class farming on what was practically a wilderness.

On one of the loamy oases we discovered the Lily of the Valley farm of Mr. Jannock at Dersingham. On this piece of land, with proper tillage of the surface, the Lily of the Valley grows as well as anywhere on the Continent. There must have been a million or more of three-year-old roots—that is, flowering crowns—ready for sale, without reckoning the still greater number of two and one-year-old progeny. An indiscriminate examination of the older crowns disclosed in every instance the embryo blossom-spike. We are, we hope, not giving up a trade secret when we say that many of our countrymen fail in growing first-rate saleable Lily of the Valley because of their excessive use of manures. Rankness of growth in the three-year-old crowns causes the lower tier, sometimes two, of bells on the spike to open prematurely when forced, and these turn black before the upper bells have time to expand, and the symmetry and beauty of the whole spike is spoiled.

This industry affords a good deal of employment to the villagers, and it is one that might be imitated in other suitable places, and money kept at home that is now sent "over the water."

The villages of Snettisham and Heacham lay on the railway from Lynn to Hunstanton, a few miles apart, and have the well-to-do and prosperous look so common in this part of Norfolk. Many of the older farmhouses and other dwellings date back a couple of centuries, and contain beautiful wainscoted rooms, spacious staircases of Oak, with massive balustrades, and treads of easy gradient. The gardens are mostly in nice keeping, but the fruit trees betray a want of knowledge of training and thinning, and of the value of good kinds, and of manure as an aid to the obtaining a continuous healthy growth and good crops. A capital illustration of this came in our way, not far distant from these places. It was the rector's orchard, an acre or thereabouts of trees some twenty-five years old, mostly Apples. These were planted in a regular way at a fair distance apart, but on one side of them was a Beech wood, with trees 80 to 90 feet high, which almost overhung the two rows of fruit trees nearest to them, and their roots probably extended over the whole of the orchard.

The parson's factotum, "Garge," had been on the place about as long as the fruit trees, but he had no remembrance of that orchard ever getting any manure, and yet the grass was mown yearly and taken away, and the crops, poor as they were, took some more of the fertility of the soil away, as did the leaves which were blown into the Beech wood and elsewhere. Of pruning there had been as little as of manure, and the tree heads were, in consequence, badly cankered, and almost impenetrable thickets. "Garge" did not know what was wanted, neither did his master, and we could not leave the orchard without first trying to make clear to the latter the various operations that were needful to restore the trees to a passable state of healthiness and fertility. What is true of this place is true also of many another—hence the use of peripatetic teachers for the willing learners in our villages.

A very general complaint that one hears is the dying out of the orchard trees; but as all trees die sooner or later, and fruit trees sooner than most, the motive for planting others should be apparent to the intelligence of most men. But it is not so, for old and really worthless trees are to be found almost everywhere, and that not solely in small gardens, but in large ones, where an ill-judged parsimony in the purchase of young trees annually has led to old trees being retained, and to much vacant space on valuable garden walls.

We have mentioned Holkham and its owners—it is a noble-looking stone mansion, standing well within an undulating park of 1700 acres. The house is open on two sides—the west and south—the other two sides being planted up to screen from sight the stables and other appurtenances.

The south front has a terrace-garden of more than an acre in extent, well laid out in big, bold beds, broad walks, spacious grass verges, with here and there small patches of lawn. It was very gay at the time of our visit with Pelargoniums and other bedding plants, mostly what are now rather slightingly called old-fashioned plants; but which we fancy rather more than carpet-beds, and the dotting method now so monotonous from its general adoption in flower-gardens. It needs more than ordinary courage to stick to these old subjects and old methods which, however, when well done, as here, are by no means despicable. Specimens of Tree Ivy, Conifers of large size, beds of flowering shrubs, Lilies, Salpiglossis, Phloxes, Spiræas, Honeysuckle, and much beside that would make any garden delightful, sweet, and gay in spring and early summer. These beds and trees were situated in a portion which abuts on and yet is divided from the terrace garden. Here was a fernery with water—a pretty arrangement in artificial rockwork—a cool spot on a hot day.

The kitchen gardens are a quarter of a mile distant from the mansion, and consist of six enclosures of about an acre each in extent, and surrounded by strong, high brick walls, handsomely built.

Much of the enormous length of wall was bare of trees—indeed, so much wall fruit as might be grown on them could hardly be consumed by any one family. The crops of Peaches, Nectarines, Morello Cherries (these latter fruits the finest we have ever seen), Pears, and certain varieties of Plums, have this year been very heavy. In such a garden there is not much intercropping necessary, and one crop a year would be as much as the greater part has to sustain. Great breadths were noticed of Raspberries and other small fruits, and of Strawberries.

There is a fine range of Vineries, Peacheries, and Fig houses built in 1872, which has, and has had, fine crops of these fruits this year. Some very fine black Alicante, Lady Downes, and Trebbiano Grapes, were observed in the late vinery, and Hamburghs in earlier houses. The variety of Fig grown is the Brown Turkey. An old range of glass houses, once forcing houses, are now put to other uses, with the exception of one division planted with some grand old Peach trees. There are numerous pits devoted to forcing purposes and plant growing. One formerly a Pine pit, is now filled with Ferns, mostly Adiantums; another was filled with Cypripedium insigne, in good condition. Quantities of the fibrous-rooted species of Begonias are grown, as wall clothing, or in pots; and much general decorative material in variety was standing about under glass and outside. *A Wanderer.*

(To be continued.)

Orchid Notes and Gleanings.

CATTLEYA DOWIANA AUREA WITH DISSIMILAR FLOWERS.

A two-flowered spike of this comes from G. O. Sloper, Esq., Westrop House, Highworth, exhibiting a remarkable variation in the colouring of the flowers, although both issuing from the same spike. As Mr. Sloper's note describes the peculiarity, and otherwise gives acceptable information, it will be as well to retain the wording of the letter which accompanied the flowers:—"I have to-day flowered a Cattleya 'aurea' that has two flowers to the spike; one is distinctly C. Dowiana, with the purple on the sepals, and the gold veins in the lip distinct to the very edge; the other flower is C. aurea, without any purple markings on the sepals or petals, and the gold veins at the sides of the lip widening until the purple disappears. I mention this to show how absurd the naming of slight variations of Orchids is. I have been flowering some of the best-looking C. Dowiana I ever saw, but have not been fortunate enough to find a single 'Hardyana' among them. From experiments I have made, I am convinced that a clear light has much to do with the intensity of the colouring of these Cattleyas; and some whose petals are mottled with rose or purple when suspended close to the glass in a good light, will have no red colouring on the petals if kept in a shady place." *J. O'B.*

Cattleya calummata.

This hybrid Orchid is frequently called Bleui, afte its raiser, Mr. Alfred Bleu, of Paris. It is the resul of crossing C. Aclandiæ and C. intermedia, and it partakes very much of the habit of the former, though rather more robust, and requires pretty much the same kind of treatment, although, while we suspend C. Aclandiæ in baskets, we grow this variety in rather shallow pots very well drained, and keep the plants rather high, firmly resting on a mass of fibrous peat and sphagnum moss. In size and shape the flower resembles C. Aclandiæ, but it is different in its markings—the lip is the brightest magenta colour, the sepals and petals of a creamy white irregularly splashed or blotched with rosy-purple. The flowers remain bright and fresh on the plant for some weeks; and as the flowers appear whilst the growth is young, it has been know to flower twice in a year.

This variety is still scarce, but I am informed that Mr. Seden has been very successful in raising it *T. W. Bond, Elstead House, Godalming.*

Dendrobium bigibbum and other Orchids.

A number of specimens of these plants came to hand from Mr. James Cypher, Exotic Nursery, Cheltenham, where all species of Orchids are grown to perfection. The specimens of D. bigibbum sent exhibit a good deal of variation, some being of a bright rosy-crimson colour, while one of them is white, with but a tinge of lilac; all, however, exhibited more or less of pure white along the keels of the lip, and this feature is a ready means of distinguishing D. bigibbum from D. Statterianum, specimens of which were also sent, but none show any white on the lip. This same D. Statterianum is closely allied to D. Phalænopsis, a spray of which was also sent. All of this section and D. McCarthiæ, of Ceylon, do best in a good clear light position near the glass, Flowers were sent of Vanda Sanderiana, Cypripedium Spicerianum magnificum, C. œnanthum superbum×, C. cardinale×, Masdevallia Rœzlii, M. bella, Odontoglossum crispum guttatum, O. Harryanum, and Coelogyne fuliginosa, all bespeaking a high state of culture. *J. O'B.*

HYPHÆNE NATALENSIS, A NATAL PALM.

We have received from Mr. Medley Wood, Curator of the Botanical Gardens at Durban, Natal, a photograph of a group of an unnamed species of Hyphæne, with the following particulars:—"Many years ago a number of seeds of a species of Hyphæne were sown in a long row in a somewhat neglected part of the gardens by a former Curator [Mr. McKen?]. The plants from them have been overgrown by trees, which have stunted their growth, but at one end of the row, one or two of the Palms have attained a larger size, and one of them has flowered, proving to be a male. Of this small group I send you a photograph. Solitary plants of this Palm are to be found on the sandy flats in close proximity to the coast throughout the whole length of the colony, but whether, in consequence of the poverty of the soil, or of frequent damage from grass fires, do not attain anything like the

size of the one in the gardens, and I have never met with one either in flower or fruit. In the coast districts of Zululand and Amatongaland, however, the plants reach their full size, and, I believe, bear fruit in abundance. I have also heard of fruit being produced some forty miles south of Durban. The nuts are large, and so hard as to be called by the colonists 'Vegetable Ivory.' The natives call the Palm 'Ilala,' and use it for several purposes. Like Phœnix reclinata, it is tapped to procure an intoxicating beverage; a strip of the leaf tied round the neck is an imaginary remedy for sore throat. Any part of the plant is used with other vegetable ingredients as a remedy for dysentery, and the leaves are used for sowing the basket-work which the natives of Zulu and Tongaland are rather clever at putting together."

Fruits of a Hyphæne, from Natal, called H. Petersiana, were, says Mr. Watson, to whom we referred the matter, sent to Kew by Mr. McKen in 1869, and are now in the museum, where also there is a large leaf labelled H. species, Natal, from T. Baines, Esq. In a list of Palms cultivated by Loddiges in his nursery at Hackney in 1845, H. natalensis is included; and in 1847, Kunze published a description of this species, presumably from Loddiges' plants, in *Linnæa*, xx., p. 15. He states that the fruits were imported from Natal in 1843, and describes the plants raised from them as having only seedling leaves 1½ feet long. From all this we may conclude that Mr. Wood's plants are the H. natalensis of Kunze.

In the *Linnean Journal*, vol. ix., p. 235 (1867), Dr. (now Sir John) Kirk, published some notes on the Palms of East Tropical Africa. He mentions four species of Hyphæne, namely H. thebaica, the well-known Doum Palm; H. coriacea, "the dichotomous Palm of East Africa, common to the maritime region;" H. ventricosa, a new species, found by him above the Victoria Falls of the Zambesi; and H. crinita, Gaertn., under which H. natalensis, Kunze, and H. Petersiana, Klotz., are quoted as synonyms. According to Dr. Kirk, "this Palm is not found on the sea-coast; 200 miles up the river it is common, also at the south end of Nyassa, and on the river Shirè; on the hills it is less frequent. The stem is 20 to 30 feet high, more or less flexuose or erect. Fronds large, the ligule well marked, and nearly equal on both sides. Fruit ovate or oblong, larger than that of H. coriacea. Elephants sometimes swallow it, but by men it is seldom eaten."

The fact that this Palm is common so far south as Natal, would lead one to expect that it could be easily cultivated in Europe, yet neither it nor any other species of Hyphæne appears to have ever become established in European collections, although they have been frequently raised from seeds at Kew and elsewhere during the last forty years. There are two healthy young plants of H. thebaica in the Kew collection now. These are four years old, and they are grown over the Victoria Regia tank, with the base of their pots in the water. So far, this treatment has agreed well with them, as also with Borassus flabelliformis and Bismarckia nobilis, both near allies of Hyphæne.

SATYRIUMS.

After having been neglected for a considerable time, this genus of terrestrial Orchids is coming forward again—a fact which is due largely to the exertions of Mr. J. O'Brien, who has devoted much attention to the Satyrium and Disas. At the meeting of the Royal Horticultural Society, held on August 12, Messrs. Seeger & Tropp, The Nurseries, Lordship Lane, Dulwich, staged a boxful of finely-grown plants of S. carneum, probably the most handsome of the genus, and S. erectum, which has rich yellow flowers, and is represented in our illustration (fig. 76), taken from a photograph, by the more slender and darker-coloured spikes. The delicate pink-flesh colour of the flowers of S. carneum is very beautiful; and, as their cultivation is a matter of simplicity, it is a pity that they are not more generally grown. When the plants have lost all their leaves, they should be kept quite dry, and, towards the end of autumn, the tubers may be removed from the pots, and placed in a dry cool house till February, when they must be repotted, a light turfy loam, with leaf-mould, suiting them well. Place in a cool house, and, when the roots can be seen, water may be given; and, if the weather is favourable, they may be placed out in frames, keeping them well watered, and if during rains the lights are removed, the plants will be benefited.

BOOK NOTICE.

THE BOOK OF CHOICE FERNS.

Under this title, Mr. Upcott Gill, 170, Strand, is publishing in monthly parts, a book on Ferns, "written by one of the best authorities in England," who is too modest, it appears, or his publisher thinks so for him, to allow of his name being given. The prospectus is not exactly calculated to inspire confidence, though we can but hope its proud boast will be justified. When completed it will, we are told, "be at once the most accurate and the fullest in matters and valuable information, which has never before been published, of any work yet issued."

Five parts are before us; in the first the author breaks ground by explaining the scope of his work, and announcing his intention of adopting the nomenclature of Hooker and Baker's Synopsis, but of following an alphabetical arrangement, the very best of course, for an index, but one whose necessary incongruities unfit it for a text book. For decorative purposes the author divides Ferns into:—1, Tree Ferns; 2, gigantic non-arborescent Ferns! 3, small growing Ferns; 4, Ferns with variegated or tinted fronds; 5, variegated and crested Ferns; 6, gold and silver Ferns; 7, climbing, trailing, and drooping Ferns; 8, transparent or filmy Ferns; 9, viviparous or bulbil-bearing Ferns; and 10, curious Ferns. As Selaginellas are included, an eleventh chapter should have been added. To each of these sections is devoted a chapter in which the cultural details appropriate to each are given.

The alphabetical list comprises the name of each species, with a brief description, references to leading authorities, and, in many cases, interesting notes.

The signification of the names, and the mode of accentuation and of pronunciation are given at great length. To some, exception may be taken—*e.g.*, to "la-min-a'-rĭ-ŏ-i'-dēs," and still more to "El-aph-og-lŏs'-sum."

Indeed, in his endeavours to suit the taste of the non-botanical reader, the author's attempts to attain simplicity rather fail of their object. Laboured explanations needlessly encumber the text, and bring home to the reader at every paragraph the sense of his own ignorance. This is, with most of us, so common and painful an experience, that we do not need to be told of it at every turn. Such constant reminders as we encounter in this book will, we fear, irritate some classes of readers, and humiliate others. An author who wishes to be on good terms with his readers should show some tact and consideration for his readers' failings and feelings. Technical terms should not be used, unless necessary for the sake of clearness and precision. The full explanation of the terms it is necessary to use should be given in a glossary once for all, so as to avoid repetition, and illustrated by small diagrams to show at a glance what is meant. To illustrate our meaning, we take the following passage from p. 226:—"The fronds are . . . borne on stipes (stalks) . . . they are tripinnate (three times divided to the midrib) . . . and furnished with flexuous pinnæ (leafits bending in a zigzag manner). . . . The pinnules (leaflets) are of thin texture. . . . The lower segment of each pinnule is sessile (stalkless). The sori (spore-masses), &c."

Similar explanations are given in each case. When such elaborate details are given so frequently, they have a tendency to provoke the reader to inquire whether, as a matter-of-fact, the explanations are not as arbitrary and conventional as the terms they are supposed to explain. In the illustration we have given above, "stipes" is a singular noun translated by the use of a plural noun; "tripinnate" expresses a fact that cannot be questioned, and predicates nothing as to the cause that has produced the appearance; but "three times divided to the midrib" may be a popular statement, but it is certainly not a correct explanation of the process. The not very difficult word "flexuous" demands six words for its explanation. Surely the word pinnule is sufficiently intelligible to any one who cares to know, not to need translation into such a very un-English word as leafit. But if we pursue this style of criticism we shall be credited with the intention of disparaging what is really likely to be a very useful book. It is well got up nicely printed on good paper, and with numerous illustrations, and some coloured plates.

BOCKING PLACE, BRAINTREE.

Now that the fine gardens of Sydney Courtauld, Esq., have settled down after the alterations consequent on building the new mansion on a different site to that occupied by the old one, and the diversion of the road so as to include a larger portion of the estate in the pleasure grounds, to which, as at present arranged, some 20 acres are devoted. The advantages gained by the change are strikingly evident. From the residence, with its adjoining neat conservatory, the eye ranges over pleasant beds of gay flowers, not too numerous, but sufficient to embellish the wide expanse of lawn, studded with noble Conifers and other ornamental trees, which were large ones when the present proprietor was a boy. One gigantic tree it is difficult to find a name for; it resembles most Cedrus atlantica, but it has the growth more of a Lebanon, and yet bears some resemblance to a Deodar. Many of the Cedrus, Pines, and Spruces have attained gigantic proportions, while a Golden Queen Holly of perfect shape is over 20 feet in height; and a magnificent specimen of Araucaria imbricata contrasts well with the giant Beeches, Tulip trees, Oaks, and Elms, with which the garden is furnished. Following the winding shady walks which skirt the gardens, in a most sequestered spot, a novel feature is disclosed in a giant Pollard Oak, which is provided with steps to allow of ascent into its branches, where seats are placed sufficient to accommodate about twenty persons.

Continuing the walk round the gardens, we come to plantations of Conifers and American Maples, the beauties of whose autumn tints Mr. Courtauld admired so much during a journey in America, and which he resolved to obtain in his English garden. In another part the view is bounded by a fine bank of shrubs, having showy perennials planted in the foreground.

A neat glass structure covers a rockery planted very naturally with exotic Ferns on the one hand, and above is a trellis covered with Irish Ivy. "What an admirable arrangement!" one is inclined to say; and so it is, but it has its uses too, for it forms an effectual screen, shutting out all evidence of the engine of an electric light installation. Another innovation which promises to be a great attraction, is a ravine formed in the old sunken road when the new road was made at a greater distance. In this ravine, fresh soil was put, and our native Heaths and Ferns are being tried on the banks, and Lilies are blooming. Here also is a bog bed in which Cypripedium spectabile has been very fine, and the Irises are establishing well. At one part of it, too, a small lake was formed which is supplied with water by means of a ram, which also provides water for the fountain, as well as for the ornamental lake in the adjoining public garden, which garden, properly laid out, was given with its lodge and everything complete, as well as a sufficient sum of money for an endowment to meet the expenses connected therewith for ever, according to the inscription to be seen at the entrance to the garden, "By Sydney Courtauld and Sarah Lucy Courtauld, his wife." These gardens

prove the bond of unity existing between the proprietor and the people of his native place. They are capitally arranged in three divisions—one for games, and as a general playground for children; another for lawn-tennis, and similar games; and the third as a delightful garden, with handsome flowers and shrubs planted beside its undulating walks and ornamental lake—the whole an inestimable boon to the inhabitants of Braintree and Bocking, and one that is evidently appreciated.

In Mr. Courtauld's gardens, a covered walk, furnished with the climbing Roses of summer, and Clematis, is a noteworthy object, and numerous American plants bid fair to impart that amount of brightness to the garden which they always do where conditions of soil and drainage are favourable. It is noteworthy, too, that the Flame Nasturtium, Tropæolum speciosum, which grows luxuriantly at Mr. Courtauld's place in Scotland, has always refused to grow at Bocking, until it was planted in one shady nook under the house, which it is now running over to a height of 10 or 12 feet, and where it seems to be now fairly established.



Fig. 76.—Box of Cape terrestrial orchids as exhibited by Messrs. Sedger and Tropp. (see p. 382.)

The inmates of the glass-houses generally are in good order, and the Allamandas and Passifloras trailing on the roof are well furnished with bloom. The Cattleyas in the Orchid-houses are in fine condition, and in the matchless collection of Masdevallias there are even at this season many rare species in bloom. The Pitcher Plants are in great vigour, the specimen of Nepenthes Northiana being, perhaps, the largest plant, and having the largest pitchers of any in this country; and the N. Veitchii, when grown to perfection, as it is here, is a grand object.

THE PENTSTEMON.

The short note (p. 277) on this hardy autumn-flowering plant reminds me that it is in September, and later, that it is most valuable as a garden plant. It is something like half a century since the original species, from which our garden Pentstemons have been obtained, was introduced, P. Hartwegi, or, as it has also been termed, P. gentianoides. The original plant is figured in the *Botanical Register*, t. 3, 1839. The flowers are of a dark reddish-purple colour. It is stated to be a native of Mexico, "found by Humboldt and Bonpland in cold stations on the slope of the snow-capped mountain of Toluco, at the height of 10,500 feet above the sea." A year later (1839) it was figured in the *Botanical Magazine*, t. 3661, where its altitude is stated to be 11,500 feet. A few years later, in 1845, a distinct variety of it is figured in the *Botanical Register*, t. 16, under the name of P. gentianoides var. diaphana, and Dr. Lindley remarks, that this beautiful Gentian-like Pentstemon is now universally known in gardens, and it is stated to be nearly hardy. This species was propagated freely from seeds and cuttings, and had a tendency to vary from the first; and comparing the original species with those now flowering in our gardens, the family likeness is so strong, that one is bound to conclude that they are merely seedling varieties of the original species. It is worth a passing remark, that Mr. David Douglas travelled in North America about the years 1826—7 for the Royal Horticultural Society, and sent home from the region of the Rocky Mountains a number of beautiful species of Pentstemons, most of them were figured in the botanical works of the period; but few of them are in cultivation at the present time. Dr. Lindley carefully described the plants as they flowered in the gardens of the Society at Chiswick, their date of flowering, and native habitat. Thus, P. speciosus is said to grow 2 or 3 feet high, has sky-blue flowers varying to red; a native of the banks of the Spokan river in North-west America. P. glandulosus, with rose-coloured flowers, was found in the rocky channels of mountain torrents in the Rocky Mountains. P. triphyllus, on decomposed dry granite, or schistous rocks, on the Blue Mountains. P. compactus, a curious species, with small pale yellow flowers, produced in whorls on upright stems; found in mountainous Pine-woods, in the dry sandy soil between the Salmon river and the Kettle Falls in Columbia, 48° North latitude. P. Scouleri, a handsome species, with purple flowers, from the Kettle Falls of Columbia. P. acuminatus, said to exceed P. speciosus in beauty of colouring and neatness of appearance; a native of barren sandy plains of Columbia. P. glaucus, pale purple and white, from the Red River. P. pruinosus, found near the Priest's Rapid of the Columbia River, with blue flowers, which very often rival P. speciosus in the brillancy of its colouring, and exceeds it in neatness of appearance. P. attenuatus, a native of the mountains near Lewis and Clark's River, a species remarkable for the deep green of the leaves, and the delicate cream colour of the flowers. P. diffusus, reddish-purple flowers on well-branched stems, found abundantly at the mouth of the Columbia River. P. Richardsoni, P. ovatus, P. venustus, P. deustus, &c., were all introduced to the Chiswick Gardens from North America by Douglas, when he was employed by the Royal Horticultural Society. Many of them have doubtless gone out of cultivation, but the above is a small sample of the work done by the Society, when working in the direction of introducing new plants that were greatly needed. All the varieties named above are perfectly hardy, and must, at the time they were introduced, have been valuable additions to border plants.

Those who have collections of Pentstemons in their gardens, will observe how freely seeds are produced without any attempt at artificial fertilisation. Seedlings are easily produced, but if a long-continued bloom is expected, the seed-pods must be removed with the decayed flowers, the plants not being equal to the strain of producing seeds and flowers at the same time.

New varieties are produced from seeds, but no plant is more easily increased from cuttings, and these can usually be obtained in sufficient numbers during the months of September and October. The last-named month is early enough to take the cuttings, and they form roots in sandy soil during the winter if covered with hand-glasses. Plant them out in the spring—if in beds—at 18 inches apart; but they are also excellent as isolated specimens in the herbaceous border.

The Scotch florists, I am glad to know, are paying some attention to the raising of seedling varieties of these flowers. Messrs. Stuart & Mein, of Kelso, are doing a good work in this direction. I have grown a collection of their seedlings during the past season, and find amongst them many distinct and beautiful varieties; the most striking of them are the following:—Avalanche, white, externally flushed pink; Nobility, white, with an external suffusion of pale rosy-pink; James Douglas, pale rose, white centre, well-formed flowers; Maggie Kerr, rosy-red, distinct white throat; Alexander Brydon, purple, maroon blotches on lip, throat marked with streaks of purple-maroon; Lord Rosebery, purple, white centre; James Cocker, purple, with maroon centre; John Forbes, deep rosy-red, crimson-maroon centre; Mary Scott, deep pink, mouth blood-colour; General Gordon, rose, white centre; A. W. Ophie, pink, distinct deep crimson-red throat. *J. Douglas.*

THE APIARY.

DOUBLING STOCKS.

The lovely weather we are still having—at any rate, in my part of the country—has caused many to delay the final arrangement of hives for winter. But as we do not know how soon winter may be upon us, it ought not longer to be delayed. One of the burning questions to many a beekeeper is, How many stocks shall I keep? It cannot be too often said, that six good stocks are at any time better than twelve weak ones, and doubling stocks is very easy if certain essentials are attended to. One is, by putting the bees into a good temper, by so frightening them that they will stuff themselves with food; another is, to give them so much to do that they have no time to fight.

Suppose, for instance, you wish to mix two stocks together. If they are in frame-hives, draw two stocks closer together each day till they touch. Then puff smoke into both, and allow a few minutes for the bees to take in a supply of honey. The first condition of success will then be accomplished. Now take a little fine white flour in a dredger, and, un-

covering the frames of one hive, sprinkle the bees with the flour, and cover up again. Do the same with the second hive. Now open the hive from which you wish to remove the bees, and lift out the frames, one by one, and shake the bees—queen and all, if there is one—into the other hive. When all have been put in, remove the empty hive some distance off, and cover up the other hive, and leave it alone.

The bees will now be on the horns of a dilemma for some time, and will be much puzzled about matters. Seeing each other covered with flour, and not knowing friends from enemies, they will commence cleaning each other vigorously, the honey they have taken assisting them in their (at present) good temper. By the time matters are straight again, they will all be good friends. The two queens will fight it out as usual, and one will be left to reign; but, except that, hardly a bee besides will be killed, if ordinary care is taken. Bees are most difficult to unite when one of them is queenless, but even then they can be easily united by the above method. It is not yet too late for stocks to be united, but it should be done soon. *Agnes.*

Plant Notes.

STIGMAPHYLLUM CILIATUM.

We have grown this climber in the greenhouse and in the stove, and find that, all things considered, the cooler temperature is the more suitable one, the plant not growing quite so much to wood as it does in the stove, and the latter is sturdier and carries more flowers. It should occupy a light position near the glass, and it is advisable to plant it not far away from the hot-water pipes—not that heat is so much wanted as comparative dryness, especially in the dead of winter, when the plant is partially at rest, and when, perhaps, a low temperature prevails. Early in spring the shoots should be shortened back to strong eyes on the ripened wood, when, with more moisture, and the increasing warmth of the season, it grows rapidly. The young growths have a reddish tinge, and get slightly glaucous in time; the leaves are opposite, somewhat cordate, acuminate, the basal lobes being slightly oblique, and overlapping. The flowers looked at superficially remind one of Oncidium crispum; they are, however, borne on a long axillary peduncle, ending in an umbel of six or more beautiful yellow flowers; the petals are long, clawed, and fringed. It begins flowering in early summer, and lasts well into the autumn in the greenhouse; easily propagated from cuttings, either of young or old wood. *F. R.*

Bouvardia purity.

This may be regarded as the perfection of a white Bouvardia, and a perfect flower for florists' purposes. It was obtained by crossing B. Humboldtii corymbiflora and B. jasminoides, and the result has been the production of a variety with flowers 1½ inches across, having snow-white starry segments and a tube only an inch in length. Thus we have all the showy properties of B. Humboldtii corymbiflora but on a larger truss, and without the long tube which the florists had to wire before using. B. purity is also exquisitely fragrant. A small batch of it is in flower with Mr. H. B. May, at Dyson's Lane, Edmonton. *J. O'B.*

Phormium tenax, &c.

The pages of the *Gardeners' Chronicle* have of late contained several notices of the flowering of the New Zealand Flax in these islands. It may interest your readers to know that it flowers freely here each year. This year the flower-spikes of P. tenax are very strong, ranging in height from 10 to 15 feet. One attractive plant 10 feet in diameter of P. tenax variegata has eight flower-spikes, but it is not so strong in growth as the green-leaved variety. Our plants are growing by the hundred in various parts of the demesne, and all seem to flourish alike. A very striking plant that we have in flower at the present time is Eryngium pandanifolium, which has two flower-spikes, each 15 feet high. The flowers are not very attractive, but the plant is very noble looking. Our plants of Gunnera scabra are very strong in foliage this season, and are showing plenty of flower-heads; they are growing on the margin of the lake. Hitherto I have not been able to raise seedlings from our Gunneras. Is there a special treatment required to procure fertile seeds? The Phormiums come freely up from seed. *D. Crombie, Powers Court, co. Wicklow, Ireland.*

Calceolaria Pavonii.

A herbaceous species, differing considerably from the florists' strain of Calceolaria, which have usually in the matter of growth little else than a dense tuft of leaves; whereas in C. Pavonii, under liberal treatment, the stature of the plant is from 10 to 12 feet, rendering it a rather unsuitable subject for pot culture. However, 2 feet is about its height when restricted in a pot, but the better way is to grow it as a pillar or wall plant, and planted out in a border. Thus treated, it will reach the height first mentioned, developing stout shoots, which are well-clothed with large halbert-shaped perfoliate leaves. The inflorescence is an axillary cymose panicle, produced for about half the length of the growth; the flowers are of a rich yellow colour, somewhat resembling those of C. amplexicaulis, but larger. The calyx consists of four green deep spreading, acuminate, dentate hairy lobes; the upper lip of the corolla is small and inflexed; the lower lip is large, nearly orbicular, and folded against the upper, but not so closely as to exclude from view the reddish spots and the blotch of the interior. It is a native of the Andes of Peru, and was, we believe, originally introduced through Lucombe, Pince & Co. It flowers well into the autumn. *F. R.*

Plants and Their Culture.

Flowering Plants.—The winter and spring-flowering plants in frames and pits should be removed to warmer structures for blooming. Begonias will bloom for a long time if they have been specially prepared, and weak liquid manure afforded them once or twice a week, the temperature being kept at 55°; they should stand close to the glass, and by themselves. Bouvardias will also do better in the intermediate-house if the plants are pot-bound, but plants that have been lifted late should have cool treatment for a time; those which have been potted up for a time, or grown in pots, will be best for early bloom.

Poinsettias should be placed in a warmer house, or in Melon and Cucumber pits. We put all the above kinds of plants in such places, giving a pit to each, and regulating the heat according to their requirements. If the Poinsettias are kept in a cold frame to too late a date, they will lose many of their leaves. The old plants of Poinsettias will soon come into bloom if placed in a Pine stove, or other similar structure. Euphorbia jacquiniæflora will need the same treatment as Poinsettias, and to be sparingly watered as the days shorten. These plants often get lost by excessive moisture in the soil, just when growth is completed. Eranthemums, Peristrophe speciosa, Hebecliniums and Linums need a warmer temperature after this date, if they have been growing in cold frames. Eupatorium Weinmannianum and E. riparum do not require heat, a cool house suiting them best. Plenty of water and liquid-manure are required by these plants, which make a large mass of roots, and soon get dry when growing in pots. Salvias require a place close to the glass in a cool-house; the spring-flowering species should be well supplied with manure-water. Epiphyllums (Cactus) are invaluable for autumn bloom, and the intermediate-house is a good place for them when coming into bloom. Some should be grafted on the Periskia stock, and some struck from cuttings every year in the autumn. Thyrsacanthus rutilans is an effective plant to come in at this season, and one that does well in frames in summer; but it should now come into warmer quarters. Brown scale is a troublesome pest of this plant, and requires closely looking after. Gesneras, if potted up some time ago, will now be useful; the plants must not be syringed, or the velvety texture of their foliage will soon become spoilt. Thrips are often troublesome, and frequent light fumigation should be employed to get rid of them, and this should be done before the foliage gets advanced. Kalancho carnea is a useful autumn-blooming plant, but it is one that is much subject to thrips, if grown in a temperature higher than 50° to 55°. It is very free, and lasts a long time in bloom. The useful Aphelandras are best when grown in small pots for autumn bloom, and they then do well on shelves or any other place where they are well out of the way of much moisture when in bloom. Plenty of liquid manure should be afforded them as soon as the flower-spikes begin to form, and a rest in a cooler house than the stove when they go out of bloom, with just enough water to keep them from shrivelling. Lasandra macrantha is another good winter decorative plant that requires much the same kind of treatment as Begonias, and, when it is grown in small pots, it will bloom throughout the winter. *George Wythes, Syon House, Brentford.*

The Orchid Houses.

The Cool Houses.—All haste should be made to get the repotting and sponging of plants finished. In sponging the plants employ soft soap and water, and clean the young and the old growths. If the plants are kept in a clean state and growing strongly, the pseudobulbs will have the shining appearance indicative of good health. Oncidium macranthum, if now sending up its flower spikes, will not be injured in any way if repotted, should it be necessary to do so, care being taken to preserve all the roots, putting these close to the sides of the new pot. In doing this, I always place firmly a few crocks over the roots as I arrange them round the pot, so that they will not be injured by the pressure that is needed to make the peat and sphagnum moss quite firm. Disa grandiflora, now making growths, should neither now or at any other time, suffer from lack of moisture at the root, and its requirements will be but small for some few weeks longer. Some growers keep this Disa too cool, but as a fact it should not be kept in a temperature lower than 50°, else the tips of the leaves quickly become browned, and eventually die. Another sign of a too cool temperature is the damping of the bottom leaves of the Disa, which occurs close to the collar of the plant.

In arranging the Odontoglossum-house, I place Oncidium nubigenum, O. Phalænopsis, and O. cucullatum as close as possible to the roof; it may be remarked, that none of these plants do well if they are subjected to a great deal of artificial heat.

Calanthes.—These plants should be kept as dark as possible by placing a heavy shading over them, and this will assist to keep the foliage on the plants, and it is one of the essential matters connected with the perfect flowering of these plants; for if they lose their foliage before the flowers open, it will be at the expense of the size; the pseudobulbs will also shrivel more. The plants should be kept moist at the roots until the flower-spike has opened half its flowers, which will then be good both in size and colour. *A. G. Catt, Parkfield, Hallow.*

The Flower Garden.

The weather has been generally fine over the entire country, but a close watch must be kept, or injury to tender plants intended to be saved will occur. After this date, it is safest to take up the Pelargoniums of the tricolor and bicolor sections, and these may be potted singly or packed close together in boxes, and placed in a cool house or frame, and given a good watering, which will last them for a considerable time. All cuttings of bedding plants should now be placed under glass at once, or in a cold frame for a short time longer, with protection at hand in the shape of mats or litter in case of need. Remove decayed foliage frequently from cuttings or old plants taken up and potted, and keep moderately dry at the root. Should there still be a deficiency of rooted cuttings, the requisite number should be put in at once, and if kept in a house or frame with a little heat, they will soon make root The propagation of Calceolarias, Pansies, Violas

Phloxes, Pentstemons, and bedding Chrysanthemums, should now be completed. These should be struck in cold frames or under hand-lights, which should be kept close until the cuttings commence to make root, when air should be admitted in favourable weather by day and night.

Bulbs and Tubers.—The present is a favourable time for planting Crocuses, Snowdrops, Ranunculuses, Anemones, Narcissus, Lilium candidum, and Belladonna Lilies. The beds should be manured with well-decayed manure and deeply dug over. The Belladonna Lily, which is flowering most freely with us this season, should be planted at the base of a wall with a southern aspect, the warmth of the soil in such places causing this beautiful species to flower almost every season. When frosts and rough weather set in, their flowers are invaluable, and the plants will continue flowering till the end of the present month. Thorough cleanliness should prevail in the flower garden, and to keep it clean there must be daily picking over of the beds, and constant sweeping and rolling of the grass and walks.

Shrubberies.—The ground is in capital condition for the re-arranging, levelling, and re-laying lawns, and the formation of new grounds, the planting of Conifera or other evergreens, and such kinds of work should be pushed on with speed. *D. C. Powell, Powderham Castle, Kenton, Devon.*

Fruits Under Glass.

Peaches and Nectarines.—The trees in the early house, being now leafless, they should be unfastened from the trellis, and any small amount of pruning that may be required should be done, the trees being dressed with an insecticide, and re-arranged on the trellis. In pruning, it will not be desirable to cut away much wood at this pruning, but simply to remove useless shoots that may have escaped the knife at the last thinning, and shortening unripened shoots to a triple bud, the central one being pretty certain to be a wood-bud, otherwise to a wood-bud on well-ripened portions of the shoots; but shoots that are well ripened throughout their length should not be shortened at all, except it be to cause other shoots to push forth for furnishing the tree. I have an objection to having forward, large bloom-buds on Peach and Nectarine trees, as it is these that usually fall off, if any do, and I think this early development of buds, coupled with dryness at the roots at certain stages, is responsible for much bud-dropping, for if once these precocious buds experience a check, be it in temperature or otherwise, they soon commence to drop off. To avert this kind of loss, all the air possible should be afforded the trees. But it must be remembered that much ventilation causes rapid evaporation of moisture from the border, and that of itself is sufficient to cause the bud to fall, if water be not afforded the roots. Diluted liquid manure will be of great benefit to weakly trees; and if the borders have not been top-dressed as advised, the surface-soil may yet be removed right down to the roots without disturbing them, replacing it with a dressing of loam, in which a few crushed bones, soot, old mortar, and wood-ashes have been well incorporated, making it very firm as the work proceeds, provided the compost be not wet. Borders, rich in humus from heavy dressings of manure, should be freely limed, forking in the lime without disturbing the roots much. This refers to borders both outside and in. The outside border should be covered with a layer of leaves, and litter over these, to keep them in their place; and this covering will conserve the warmth in the soil, and throw off rains. As a dressing for these trees, I paint the old wood with Gishurst Compound, at the strength of 8 oz. to a gallon of water, and a handful of flowers-of-sulphur, made first into a paste, and then added to the former; a weaker solution is employed on the young shoots. Where red-spider is present, the trellis-work is carefully washed with petroleum, which never fails to clear it of these insects.

Later Peach-houses.—Carry out all the necessary lifting and transplanting before the leaves fall. It may be of use to remind beginners that a wet soil should not be employed for dressing Peach-borders, as any attempts made to give it firmness will only end in permanently spoiling it. Again, be careful not to put a lot of pot plants on the borders, the constant watering that the former require tending to sour and sodden the latter. Now is a good time to purchase the necessary trees.

Strawberries in Pots.—Autumn fruiters should now be housed, and some slight stimulus given them till the fruits show colour. Plants that were forced in the spring, shaken out, re-potted, and grown on afterwards, are excellent for autumn and early winter fruiting; or, if planted out and duly attended to, may be lifted at the beginning of October, potted, and brought on in a cold frame till re-established. Noble, Vicomtesse, and La Grosse Sucrée are good for this purpose, at least, hereabouts. The early batches of the latter kind, for spring-forcing, in 5-inch pots, now have plump, ripe crowns, and are going to rest, and should be plunged to the rims, outdoors, till wanted. Later successions should be moved occasionally, the drainage attended to, kept clear of weeds, and stood wide apart. *W. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

Root-Pruning of Fruit Trees.—This operation should take precedence of all others at this season. Where wide borders find place for the trees exclusively, a trench may be taken out piece-meal every year, some 7 or 8 feet from the stems, and in a semi-circular form; but if the trees are well-established, the solid mass inside the semi-circle should not be disturbed more than can be helped; on the contrary, only the roots found within the width of the trench should be shortened back. These roots ramify in the narrow strip of fresh loam, mortar-rubble, &c., which was placed in the trench in previous years. If this work be done yearly, we know exactly where the feeding roots are, and where to place the mulching, and where to afford water. No manure should be mixed with the soil, and all mulching materials should be cleared off before commencing to open the trench. If trees are treated in this manner, they rarely grow too strongly, and if at any time trees so treated have to be transplanted, it can be done without risk to the crop of the following year. Apricots require a sound calcareous loam, and a thicker mass of it than Peaches or Nectarines, and the drainage should be good; but there is no need to put concrete under the trees unless the subsoil be very moist. The treatment of Apricots has been quite changed during the past few years, and well-managed trees are now lifted the second year after planting, and their roots brought up near the surface, and laid out horizontally, and once they are laid in this manner, mulchings and waterings soon make the border a mass of surface roots; and then a trench thrown out annually will keep the roots from reaching the rich vegetable border. The Apricot is worked on the same kind of stock, as the Peach, and what suits the one, suits the other; but when we come to the shoots and branches, a widely different system of pruning becomes necessary. The Apricot, for years in succession, produces the bulk of its fruit from spurs, and these grow naturally or may be formed artificially, the former by disbudding, and the latter by pinching the shoots. When the young wood of the Apricot is well ripened, the fruit is finer and the quality better; but when the trees have filled their allotted space, the spurs, which should be kept close to the wall, have to be depended on for fruiting. Apricots produce a large number of leaves, and great care should always be taken to supply the trees in summer with plenty of water.

When old trees have become fruitless, but are otherwise sound and healthy, they may be lifted with advantage, relaying them carefully in fresh soil. In moving old-established trees, the border should be thoroughly moistened, otherwise the fibrous roots will be broken off during the operation of digging out. All of the strong old roots which have great length should be cut back before replanting, and fine loam spread over all the roots, well washing it in with water from a water-can, and when somewhat dried up, cover them up to the proper depth, and mulch with fresh stable litter. *A. Evans, Lythe Hill, Haslemere.*

The Kitchen Garden.

Beetroots.—These roots, being somewhat tender, should be taken up before frosts set in; and as large roots are not so good in colour or flavour as small ones, they should be put aside at lifting time. I prefer to store the roots in trenches, the roots keeping fresher and plumper than by other methods. Care must be taken not to injure the smaller roots, otherwise there is apt to be a loss of colour when cooked. The trench must be deep enough to bury the root, and the tops should not be cut off. Place the roots close together, the crowns beneath the soil, and make the soil firm about them. In this way they will keep fresh for months. A little Fern or litter may be thrown over the ground in severe weather. If pitting is adopted, the leaves should be carefully pulled or rubbed off, and the roots neatly stacked in some dry, cool corner, and clamped down.

Carrots, Salsafy, Scorzonera, &c., may also be treated in the same mode as Beet, but the root may be left in the ground for some time longer. Parsnips are also best when left in the ground during the winter, some slight protection being given them so that they may be dug up during hard frost. Very young Horn Carrots sown to supply small roots will be all the better if left undisturbed, protecting them later on with coal-ashes or leaf-mould, so that they can be dug up during frost.

Mushroom Beds in the Open.—Beds may now be made up with materials that have been turned and prepared as advised. The site for the beds should be well sheltered on the east and north side, and it is preferable to have the bed resting on a firm and somewhat elevated spot so that there shall be no danger of surface-water lodging about them and soddening the materials. Having chosen the place for a bed, mark out the size, and proceed to build it, making it as firm as possible as the work proceeds. The usual width for a bed is 4 feet at the base, and the height to the ridge 3 feet. When the bed is made, cover it over with a thick layer of long litter or mats till the maximum degree of heat has been reached, and it has declined to 85°, then insert the Mushroom spawn in pieces, 6 to 8 inches apart, all over the bed, and case up with the surrounding soil, if it be suitable, and can be made fine; and if this be dug out close round the bed it will be kept dry at the base. As soon as the bed is cased over with 2 inches of soil and beaten smooth, cover it with long litter. The subsequent treatment of the bed will consist, for a time, of a careful removal of the litter when too moist, replacing it with dry, and finally thatching it over with clean straight straw to the thickness of 10 inches. It is essential that the warmth be steady, and also that new spawn be used. *H. Markham, Mereworth Castle, Maidstone.*

PLANT PORTRAITS.

Asparagus Sprengeri, Regel, *Gartenflora*, September 15, 491.—A newly described species from West Africa.

Cineraria aurita, *Garden*, September 13.

Cymbidium eburneum, *Bullettino della Soc. Toscana di Orticultura*, September.

Datura sanguinea, *Westnik* (St. Petersburgh), September.

Early Tulips.—1, Lac van Rhein; 2, Double Murello; 3, Archduke of Austria. *Revue Horticole*, September 16.

Franciscea Hopeana and latifolia, *Westnik* (St. Petersburgh), September.

Loasa lateritia, *Revue de l'Horticulture Belge*, September, p. 193.

Pancratium illyricum, *Garden*, September 6.

Prunus alleghanensis, *Garden and Forest*, p. 429, 1890.

Pyrus arbutifolia, *Garden and Forest*. p. 417, 1890.

Rose Félicité Perpétue, *Revue de l'Horticulture Belge*, September.

Vriesia Gravisiana, Wittmack, in *Gartenflora*, September 15, 494.—A newly described species.

Great Nursery Sale in the North.—The closing days of last week witnessed the disposal by auction of the greater portion of the nursery stock, at the Forbesfield Nursery, near Aberdeen, by Messrs. Morrison Brothers. During the three days over 3000 lots were disposed of. Extensive purchases were made for Fyvie Castle, Udney Castle, Esslemont House, Aberlour House, Fasque House, &c., while the local nurserymen and others, from a great distance, made large purchases, as also did a number of local gentlemen. The prices from start to finish were considered very satisfactory, and the sale on the whole was a success.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

MONDAY, Oct. 6.—Fruiterers' Company's Exhibition of Hardy Fruits at the Guildhall, London (three days).

THURSDAY, Oct. 9.—Crystal Palace: Hardy Fruit (three days).

SALES.

MONDAY, Oct. 6.—Dutch Bulbs, and Roman Hyacinths, at Stevens' Rooms; and also at Protheroe & Morris' Rooms. Nursery Stock, at The Nurseries, Sunningdale, by Protheroe & Morris (six days.)

TUESDAY, Oct. 7.—Lilies, at Protheroe & Morris' Rooms. Nursery Stock, at the Wood Lane Nursery, Isleworth, by Protherce & Morris.

WEDNESDAY, Oct. 8.—Dutch Bulbs, Camellias, and Freesia refracta alba, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Greenhouse Plants and Glass Erections, at the Pine-apple Nursery, Maida Vale, N.W., by Protheroe & Morris (four days).

THURSDAY, Oct. 9.—Dutch Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, Oct. 10.—Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Oct. 11.—Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—52°.8.

Logs and the Telephone.

THERE is, in a way, a curious antithesis between a fog and a telephone, the one representing an obstacle to progress, the other a triumph of Nature, through man's ingenuity, over the difficulties imposed by distance, and it may be even over the obstruction caused by a moisture-laden atmosphere, polluted with suspended carbon, acid vapours, and other abominations. That fog is very injurious to the well-being of plants is beyond question, and we may expect to have that demonstrated in the course of a few weeks, for we are not now far from that period of the year when in London and other large towns the days are turned into nights. After a fog, a visit to any large plant-growing establishment will afford abundant evidence of its destructive influences, especially if it be one where Orchids and other tender plants are grown. But although its effects are so apparent, the exact cause is largely a matter of conjecture. To acquire a greater amount of certainty, the question has been taken in hand by the Scientific Committee of the Royal Horticultural Society, with the aid of a grant from the Government; and it is greatly to be hoped that gardeners and cultivators generally will do what lies in their power to lend a helping hand to the investigation, by supplying details of the effects of the fog on various plants at particular stages of their growth, as observed by them. The matter has also been considered in Manchester, where the Field Naturalists' Society has been endeavouring to extend the planting of trees in the city; but the difficulty of getting them to grow has, hitherto, proved to be even greater than it is in London, and the Plane, which does so well here, will not thrive in the more northern town. The Naturalists' Society held a meeting last Monday night in Manchester to consider the question of the effect of fog and smoke on plants. By the kindly aid of the National Telephone Company, a number of gentlemen in London were able to confer with their friends in Manchester in a manner which deserves to be recorded as the first instance of such a meeting being held in two places at once! Mr. Albert Anns, the Secretary of the Company, received the members at the London end, among those present being Mr. P. Hartog, Owens College; Colonel Mackenzie, Superintendent of Epping Forest; Dr. Charles Roberts, and Professor Meldola; and, on the proposal of Dr. Bailey, in Manchester, a London sub-committee was appointed to investigate the condition of the atmosphere during fogs. Dr. Bailey proposed to obtain analyses of the air at varying heights during the fog, with the idea of learning the proportions of carbonic acid gas and moisture present. Of course, as was suggested, the fog-cloud, or in towns, the ever-prevalent smoke, would cut off a considerable portion of the light requisite to the plant's health, but that other causes are at work is equally clear, for the shutting off of light from plants for a few hours, or even for a whole day, would hardly work such mischief as may be seen too often: and plants, such as Hollies, which having thick leathery leaves, do better in such districts than those with thinner foliage, which would rather point to the presence of some burning substance in the smoke, such as might be expected from the combustion of large quantities of coal. The resisting power of the plant is also greater, owing to the larger proportion of chlorophyll in such leaves.

After the business of the meeting was concluded, those present were entertained by telephonic communication with several theatres, the performances at the Savoy, in London, and the Princess's, at Manchester, being well heard in Cannon Street, E.C. The wire is not yet open to the public, but the test last Monday was quite satisfactory, and although the two sections of the Society had to speak over a length of more than 200 miles, resolutions proposed in London were seconded in Manchester, and the business was transacted without hindrance. What the future developments of meeting by telephone may be, cannot be estimated. It will not dispel material fog, it is true, but indirectly it may be the means of counteracting its effects.

The Guildhall Fruit Show.—This show of fruit, the arrangements for holding which are being carried out by the Fruiterers' Company, assisted by some of the leading fruit growers, promises to be of an extensive character, and in addition to the available space in the Guildhall required for staging purposes, the old Council Chamber, and several of the adjacent lobbies, will be utilised. For competitive purposes, the counties have been formed into sections—north, south-west, and south-east; thus, Apples from northern counties will not have to compete with others from different parts of the country. A large number of entries have already been received, and the promised exhibits from tenant-farmers and cottagers in the various zones will be looked forward to with some interest. No charge will be made for admission, but invitation cards will be issued instead, which may be obtained from the clerk to the Company, Mr. O. C. T. Eagleton, 46, Chancery Lane, W.C. The Lord Mayor and Sheriffs will open the exhibition on Monday next, the 6th inst., at 3 p.m., after the work of judging is completed. The arrangements of the show have been placed in the hands of Mr. Richard Dean, Ranelagh Road, Ealing.

The Late Mr. William Holmes.—At a meeting of the committee of the Birmingham and Midland Chrysanthemum Society held on the 27th ult., a vote of sympathy and condolence with Mrs. Holmes and family was carried unanimously; and the great loss the National Chrysanthemum Society, and horticulture generally, has sustained by the death of Mr. Holmes, was referred to. The Birmingham Chrysanthemum Society will hold its thirty-first exhibition in November next, and the committee and members generally are fully sensible of the great services the late William Holmes rendered in popularising the culture of Chrysanthemums in this country.

National Chrysanthemum Society.—A meeting of the general committee of the above Society took place at Anderton's Hotel, Fleet Street, on the 29th ult., Mr. R. Ballantine in the chair, a very large number of members being present. The Chairman formally opened the meeting by announcing the death of the late Hon. Secretary, Mr. W. Holmes, to whose devotion to the best interests of the Society he paid high testimony. He also moved the adoption of an address of condolence to Mrs. Holmes, which had been printed, and was subsequently signed by all the members present. Mr. Richard Dean was unanimously elected Hon. Secretary until the conclusion of the present financial year. Mr. Shoesmith was elected on the Floral Committee, and Mr. Moore on the General Committee, in the place of Mr. Swift, who has left London. It was resolved that a circular be sent to all the members and the affiliated Societies announcing the change in the secretaryship of the Society. The Wellington (New Zealand) Horticultural Society, and the Exmouth Gardeners' Mutual Improvement Society, were admitted to affiliation, and ten new members were elected, including one Fellow. Mr. C. Harman Payne reported on behalf of the Catalogue Committee, that the new Catalogue was in the hands of the printer, and he hoped it would soon be ready for issuing, and that he had incorporated with it a list of all books and pamphlets, of which he had knowledge, bearing upon the Chrysanthemum. It was unanimously resolved that a meeting of the friends of the late Mr. William Holmes be convened at the Royal Aquarium on October 15, at 4 p.m., to take into consideration the expediency of raising a memorial to his memory.—At a recent meeting of the Committee, the Centenary Sub-Committee brought up a report in reference to the Centenary Celebration, recommending some modifications of the course of procedure as set forth in the schedule of prizes, which was adopted. On the first day, November 11, there will be an opening ceremony at 1 p.m., by which hour the judging will be concluded, and the Conference will sit at 6 p.m. The second day, the 12th, will be devoted to the exhibition and general purposes. On Thursday the 13th, the Conference will sit at 2.30 p.m.; and the banquet will take place in St. Stephen's Hall, at 6 p.m., at which Lord Brooke, M.P., the President, will preside. On Friday the 14th, there will be a *conversazione* and an informal meeting of representatives of affiliated societies and others, the distribution of prizes, and closing ceremony. It is also arranged that there shall be a reception of representatives of affiliated societies and delegates by the committee on the opening day; and an address of welcome will be prepared and read—this will take place in St. Stephen's Hall. The Conference will take place in the library, Sir Edwin Saunders presiding. The Conference on the third day will also be held in the library, Sir Guyer Hunter presiding. The tickets for the banquet will be 5*s.* each, and ladies will be present. The report of the sub-committee was adopted, and twenty-seven new members were elected, including four



BERWICK, SHREWSBURY.

Fellows, making in all 712 paying members. Four societies were admitted to affiliation, making in all seventy-two in this relationship to the Society. A melancholy interest attaches to this meeting, as it was the last that was attended by the late Mr. William Holmes, Hon. Secretary.

Cactuses. — Are these plants coming into favour again? We have had lately separate treatises on them from Mr. Castle and from Mr. Watson, and now we find in the two last numbers of the *American Garden* a series of well-illustrated articles on them. In interest they yield to no plants; the flowers are often gorgeous. We can but rejoice over the successive appearance of particular groups of plants in the horticultural world; for, if we are really to know plants, their modes of growth, and the validity or otherwise of alleged distinctions between them, we must cultivate them.

"The Horticulturist's Rule-Book" is an American publication, compiled by Professor L. H. Bailey, and to be had in New York of the Garden Publishing Company. It is only recently that we have succeeded in obtaining a copy, in spite of various efforts. We regret this the more on inspection of the contents, as this is just the book which is needed at the right hand of all who are concerned in horticultural affairs. Certain chapters, of course, are suitable only for residents in the United States, but for the most part the book is as well adapted to the United Kingdom.

Clematis Stanleii.—We have been favoured with specimens of this plant recently figured in these columns (see p. 327). The illustration was taken from an early flower, and does scanty justice to the plant. The whole plant is covered with soft, hoary down; the leaves are divided bipinnately, the segments being narrowly lanceolate. The flowers are solitary, terminal, or in terminal 3-flowered cymes; the peduncles are stiff, erect, but curved at the top, so that the broadly bell-shaped flower is nodding; each flower measures about 2 inches across, and consists of four ovate segments, downy, like the leaves, and white flushed with pale lilac. It is a distinct species, in charming in its subdued coloration.

Gunnera scabra. — There are few nobler-looking plants than this and allied species. They require to be grown in stiff rich soil; if near to water so much the better. They form magnificent specimen plants, and the fruit spikes are almost as remarkable as the foliage. We are indebted to Mr. Herbert W. Taylor, of Barnet, for a photograph of a fine specimen growing in his grounds. Some of the leaves measured 7 feet across. We have already given illustrations of the plant from other sources.

The Literature of Horticulture.—Some attempts have been made at the conferences held at the Royal Horticultural Society, to illustrate the literature and iconography of the subjects under discussion; but this has only been partially and incompletely accomplished. By far the most complete and interesting was the collection got together at the Aquarium on the occasion of the Potato tercentenary, which was really a bibliographic display of the first order of importance. The conditions under which a flower show or a conference is held are, however, not favourable to a leisurely survey of books and pictures, and hence we venture to make the following suggestion to the Council of the Royal Horticultural Society, that they should, at and about the time of the conference, get together in the Lindley Library, and leave, for the inspection of the Fellows and visitors for a week or two, a collection of books, dried specimens, and plates, relating to any particular plants that may be the subject of discussion at the time. Let us take the tuberous Begonias or the Jackman race of Clematis, by way of illustration. These form two of the most remarkable triumphs of modern horticulture, and are almost, if not entirely, due to British skill and enterprise. They are discoveries as remarkable and as significant as any that the physiologist has worked out in the laboratory. Let us have, in due season, shows and conferences relating to these plants as usual, but let us also have, so far as possible, the exhibition of them prolonged beyond the day or two which the conference would occupy. Seeing what Mr. Ware and others did in the way of "permanent" displays at the Colonial Exhibition, there can be little difficulty in organising special shows of this character in connection with a collection of books, pictures, specimens, and other subjects relating to the flowers in question. When we get our Hall, which we hope is only a question of time, such exhibitions as we are advocating would, of course, be of more easy accomplishment, but in the meantime, it might be well to make the trial on a small scale next year in the Lindley Library, and thus secure to the Fellows the opportunity of seeing something of interest during the intervals between the meetings. If due publicity were given to the matter, visitors would be attracted, and the muster roll of Fellows would be augmented. Such suggestions, no doubt, demand men and necessitate outlay, but so does any business, and business men know that they often gain by indirect methods as much as they do by more direct procedures.

Essex Field Club. — The eleventh annual Fungus Foray of the Essex Field Club will be held on Friday and Saturday, October 10 and 11, in Hatfield Forest, near Great Hallingbury, a remnant of about 1000 acres of the great forest of Essex. The head-quarters of the meeting will be at Bishop's Stortford. Papers will be read, and an exhibition of fungi and other botanical specimens held, under the direction of Dr. M. C. Cooke and Mr. George Massee. Any of our readers wishing to attend, should communicate with Mr. W. Cole, Hon. Sec., Essex Field Club, Buckhurst Hill, Essex.

The United Horticultural Benefit and Provident Society.—The annual dinner of the above Society will, we understand, take place at the Cannon Street Hotel on October 23, at 5.30 p.m., when Mr. E. R. Cutler will preside.

The New Fruit and Vegetable Market.—We learn from the *City Press* that considerable progress is being made with the new Fruit and Vegetable Market in the Farringdon Road. The "first stone" will be laid by the Lord Mayor in about a month from the present date.

Messrs. Jackman's Clematis.—These plants, we are happy to find, retain all their popularity, and, in their way, no plants are more deserving. Looking recently through the immense stock at Messrs. Jackman's, at Woking, the cradle of the original, and the home of many of the later varieties, it was obvious that, in its way, the old C. Jackmanni× had not yet been improved upon. It is difficult to see how it could be. Gipsy Queen is noticeable for its deep violet colour; Mrs. Baron Veillard, a new kind, of French extraction, is a free bloomer, with reddish-lilac flowers, of a distinct shade of colour; it blooms in the autumn. The best white is a variety known as Mrs. George Jackman, the flowers of which almost fulfil the florist's ideal, and are of pure white. It flowers twice—once in early summer, and again in autumn, presumably from the old wood in the first instance, and from the new season's shoots in the other. This is a very interesting circumstance in relation to the ancestry of the plants, as we have had occasion to remark before. For general purposes, C. Henryi remains the best white, and it is accordingly in large demand, though not so ideally perfect as the last-named. C. lanuginosa candida is also a good white. Otto Frœbel, Lady Caroline Neville, Alexandra, Marie van Houtte, and Duchess of Edinburgh are all sorts in large demand. Magnifica is remarkable for its flowers, which have a lilac ground, traversed in the centre by a bright red central band. It is a very fine bloomer, very hardy, and in gardening phrase a good doer. Pot Roses are done remarkably well in this establishment, Maréchal Niel and other popular sorts making stout, healthy shoots 10 to 12 feet in length. When we saw them they were placed out-of-doors, prevented from being injured by the wind by wires, which gave the necessary protection in case of need, without interfering with the access of light and air.

Beccles, Suffolk.—A Chrysanthemum and Horticultural Society has been formed for Beccles and district, and its first show will take place early in November. Mr. L. Batters, of Gillingham, is the Chairman, and Mr. Crooks the Secretary.

A Hobby for Country Schoolmasters.—On Saturday afternoon, 27th ult., Mr. T. W. Ogilvie, Demonstrator of Natural History, Aberdeen University, delivered a lecture to the members of the Aberdeen branch of the Educational Institute of Scotland, on "The Fertilisation of Plants." Mr. Ogilvie, in opening his lecture, said, country teachers had an excellent opportunity of working out the flora and fauna of their respective districts, but he had observed with regret the extreme infrequency with which those opportunities were embraced, and he had chosen the subject of his lecture in the hope that he might induce some to take up such an interesting study as an antidote to the *ennui* with which country teachers who had not a hobby, must be afflicted.

New Hybrids of Streptocarpus.—Some flowers kindly sent by Messrs. J. Veitch & Sons, Chelsea, for our inspection, reveal some new beauties in this species of Gesneraceous plants. The first hybrid of which we have any record, was S. Greenii×, raised by Mr. Green, and figured in these columns on March 4, 1882. It was the result of crossing S. Rexii and S. Saundersii, and was of caulescent habit, with a corymb of pale lilac flowers. Mr. Watson, Kew, followed with hybrids from S. Dunnii, which has dull red flowers, and is the result of crossing S. Rexii and S. parviflora. The best of these were S. kewensis×, which sprung from S. Rexii fertilised with the pollen of S. Dunnii×; S. Watsoni× sprang from S. parviflora, fertilised with the same pollen. Other hybrids were raised by him which have fine-coloured flowers; and most, if not all, have strong foliage. Messrs. Veitch's hybrids have flowers of pleasing shades of purple, blue, lilac, and white, all of the coloured flowers having stripes in the throat of a darker colour than the corolla, which add much to the beauty of the flowers. The parentage of these hybrids was not communicated to us, but the shape, colour, and size of the blooms would point to parviflora or Saundersii. Now that the Streptocarpus has been taken in hand by Messrs. Veitch, we may expect to get some surprisingly beautiful hybrids, which, as the plants are easily cultivated in the intermediate or cool-house, in pots or planted out, will be a boon to gardeners, and possess great commercial value. S. kewensis × and S. Watsoni × were figured in our pages for August 20 and 27, 1887.

Chiswick Gardeners' Association. — The Committee are organising a concert in aid of the Gardeners' Orphan Fund, to take place on October 29 next, at the Vestry Hall, Chiswick.

BERWICK, SHREWSBURY.

(See Supplementary Sheet.)

In our issue for June 7, we gave an account of the fine gardens at this place, touching, as well as space would permit, on some of its principal features, and noticing some of the improvements which Mr. Alfred Gaut, the clever gardener to J. Watson, Esq., M.P., had there carried out. We now give a view of the mansion as seen from the terrace gardens. As will be seen, it is pleasantly situated, and commands fine views of the finest part of Shropshire, while the Severn runs in front of that portion of the gardens which is shown in our illustration.

The estate, once a possession of the ancient family

of the Bettons, was sold by Richard Betton to an ancestor of Lord Denbigh. *The County Seats of Shropshire*, in an exhaustive article, states that upon the death of his uncle, the Hon. Henry Wentworth Powys, in 1875, Lord Denbigh sold the estate for £192,100 to its present owner, who, by restoring the mansion, and making various improvements, must, in the earlier days of his possession of the property, have expended altogether £250,000. As a garden, Berwick enjoys not only peculiar natural advantages, but also those which accrue from its being an ancient residence where gardening, of some kind or other—and especially the planting of trees and shrubs—has been carried on for ages. Noteworthy, as the outcome of this, are the clumps of tall Rhododendrons, many of them 20 to 30 feet in height, and the magnificent Hollies, Portugal Laurels, Conifers, &c., alluded to in the article before-mentioned. Probably never before has Berwick possessed a mistress who has so much enthusiastic interest and taste in gardening matters as Mrs. Watson; and, if the estate bears in its fine timber and magnificent shrubs traces of a succession of skilful hands long since passed away, so will posterity admire the Japanese Maples, and other rare foliage and flowering shrubs, with which it has of late years been well enriched, and the many improvements still being carried out by its present owner. Noteworthy features of the gardens of Berwick are the variety and the profusion of climbing plants, some of which cover the recesses and pillars of the colonnade in the middle of the view.

The Bulb Garden.

COLCHICUM SIBTHORPII, *Baker*.

This species is by far the handsomest of the tesselated Colchicums, the flowers purple-lilac, and almost as large as those of C. speciosum. We are again indebted to the indefatigable Herr Max Leichtlin, of Baden-Baden, for the introduction of this acquisition, and who kindly sent bulbs to Kew, where they are now flowering. Although a comparatively old species, it does not appear to have been in cultivation hitherto; although, under the name of C. latifolium, it was figured in Sibthorp and Smith's, *Fl. Græc.*, t. 350, the figure being taken from a dried specimen, and although, doubtless, it was the same plant, the figure scarcely conveys a correct idea of the great beauty of the plant. The flowers are borne three to four on a spathe, the segments oblong, and forming a huge cup, as in C. speciosum, the lilac-purple of various tints being very rich. Mountains of Greece, &c.

C. Bivonæ, a Spanish species, which we saw in flower at Mr. Barr's Long Ditton nursery the other day, is a good companion to the C. Sibthorpii, though neither so handsome nor so free-flowering as that one. *D. D.*

Florists' Flowers.

THE HARDINESS OF CARNATIONS.

I do not think it possible to add much more to the discussion of this subject, to which Mr. Martin Smith has made a useful addition at p. 333. He has there recorded his own experience, which is useful as far as it goes. Mr. Smith has found, as others have also done, that seedlings, or layers from seedlings, grow much more strongly than named varieties purchased from the florists. It is a well-known fact, that a large proportion of Carnations and Picotees, whether they be selfs, fancies, or the florist's type, will degenerate in a few years if grown year after year in the same garden or district in the South. I have had to deal with Carnations and Picotees in Scotland and the North of England many years ago, and in the colder districts their constitution certainly does seem stronger than in the South. I stated at p. 244 how successful were the working-men of the North of England in growing the finer varieties of Carnations and Picotees; and, as further evidence of the adaptability of the climate of the North of England for the culture of these plants, I sent a number of the best varieties to a gardener who resides in one of the bleakest districts of the North, Mr. Robert Elliot, gardener at Harbottle Castle, near Rothbury, in Northumberland. About five years ago, some of these had quite begun to wane in vigour with us; but they started into new life, as it were, in their northern home with a vigour almost beyond belief, and some of them were of the more delicate constitutioned pink and purple-bizarred class. The layers Mr. Elliot sent back to me after two years' growth in the North, were as strong again as they were with me, and the leaves of a much deeper green colour. I have stated already that the best flowers are produced from plants grown all the year round in the open borders. Many growers cultivate their plants in pots when the blooms are wanted for exhibition, but they do not grow the plants under glass. They do best in the open air, and the object of placing them under glass is to protect the blooms from rain, &c., when they are wanted for exhibition. I hope to be able to save a small quantity of seeds this year from the choice exhibition varieties. Should I be successful, I will ask Mr. Smith to be good enough to accept a hundred or two of them, and I will guarantee that the plants produced from those seeds will be as vigorous as any plants Mr. Smith has in his garden. We are all learners in this field of Flora's domain, and the more we learn, the greater seems to be the work still left us to accomplish. *J. Douglas.*

Campbell's Seedling Carnations.

Mr. M. Campbell, florist, High Blantyre, N.B., is in the front rank of Northern florists who give their attention to the raising of Carnations and Picotees. This is the impression left on my mind by a visit to his place a short time ago, and his record of success as a competitor at shows, both in England and Scotland, for some time past, supports this impression. His greatest achievement, at least the one attracting most attention this year—as it did last year when first brought under notice at the shows—is Mrs. Muir, white self, of which he has many hundreds planted out. The blooms, as seen on the exhibition tables, are all that could be desired in a Carnation of this class, large, full, with good substance of petal and purity of colour. But one has to see the habit of a purely decorative or border Carnation in order to be satisfied regarding its fitness for border purposes. In this respect Mrs. Muir is very satisfactory. It is a seedling from the well-known Redbraes Picotee, and has all the vigour of constitution, and freedom of growth and flowering of the parent.

Among seedlings not yet in commerce, the following, selected from many hundreds of capital varieties, struck me as being notably superior:—Mrs. Laing, deep rose self, of good size and substance; Reggie A. Millar, deep scarlet self, finely serrated edge; Rachel, fancy, maroon-crimson and purple-rose; Jessie Millar, fine pink self, serrated edge; Miss Nessie, deeper shade of pink than last-named, with larger flowers; Agnes Young, deep rose-pink—a very pretty self; Miss Wilson, light scarlet self; G. C. Murray, bright rosy-scarlet self; Mrs. G. C. Murray, bright rose; Minnie Merton, bright scarlet self; Mungo, a beautiful purple-flake; Mrs. J. W. Jack, a fine rose flake; Purple Prince, a grand deep purple self; James Brewster, a pink and purple bizarre; Archie Dougal, a heavy-edged purple Picotee, very large; J. W. Jack, intense scarlet self, of very dwarf compact habit, yet free-blooming; Dr. Grainger, a very fine scarlet flake.

A remarkable point about all these and others of Mr. Campbell's strain of Carnations, is their splendid constitution and great "grass" producing quality. It is rare to get first-class varieties of [old] Carnations combined with really robust constitution. Mr. Campbell's aim in selecting his breeders, as well as their progeny, is to introduce greater robustness into the finer classes of florists' Carnations, and it has only to be said that he is succeeding well in his object. *W. S.*

Trees and Shrubs.

SCIADOPITYS VERTICILLATA.

Messrs. Veitch obligingly send us cones of the Umbrella tree of Japan, grown at Coombe Wood. The great drawback to this singular tree is its slowness of growth; but we hear that when grown in peat its growth is much more rapid. At all times it has a striking and distinct appearance. It was figured in our columns in 1861, 1862, 1883, and 1884.

Tulip Tree at Drummorie.

We are indebted to C. T. C. Grant, Esq., of Kilgraston, Perthshire, for a photograph of a fine Tulip Tree growing on his estate. It was planted by a gardener named Donaldson upwards of 180 years ago. At present it measures about 60 feet in height, the trunk being unbranched to about 12 feet. The spread of the branches is 30 feet. It has recently flowered. The date of introduction of the Tulip Tree is not known, but it is stated by Loudon to have been cultivated by Bishop Compton at Fulham in 1688. The first that flowered in England was that at Peterborough House, Fulham.

So long ago as 1838, Loudon records the height of the Tulip tree at Syon as 76 feet, and fine trees still exist there. Other records give 70 feet. In Scotland, at Hopeton House, two trees are recorded (in 1838) as having been eighty-six years planted, and as having reached a height of 60 feet. We have no very recent records of the height of the tree. Its flowers, which are produced in most years, but not in all, in the South, have the structure of those o a Magnolia. They are of a greenish colour, striped with red, presenting superficially a resemblance to the Tulip both in form and colour.

Fruit Register.

NAPOLEON PEAR.

We are indebted to Mr. Macers of the Gardens Chymoroah, Marazion, Cornwall, for a photograph showing a Pear of this variety which has brought to perfection no fewer than 1140 fruits. It is a trained tree 8 feet high, planted about twelve years. The photograph is, unfortunately, unsuitable for reproduction, but it bears out our correspondent's assertion. Probably, the fruit would have been of finer quality had thinning been more freely resorted to. The tree is about 50 feet from the cliff, exposed to the Atlantic gales from the south-west.

ALPHONSE KARR.

The death of the author of the *Voyage autour de mon Jardin*, is an event, which, though from the fulness of time, not unexpected, leaves the world a loser. Alphonse Karr was a brilliant writer, a master of playful sarcasm that left no rankling sore, a wielder of satire that amused rather than hurt the victim. He began life as a politician and a journalist. If he was not successful in the former capacity, he was eminently so in the latter. The Paris *Figaro* was edited by him, and his was the hand that moulded it in its present shape. The second Empire practically, if not directly, muzzled him, and thenceforth he took to commercial horticulture near Nice, and distributed Roses and Violets rather than epigrams. He contributed occasionally to the horticultural press; but his contributions, as was natural, were more valuable for their literary flavour than for any practical teaching. He was of German extraction, but his wit and manner were French to the core. He was born in Paris in 1808, published his *Voyage autour de mon Jardin* in 1845, retired to Nice after the revolution of 1848, and died on Tuesday last in his eighty-third year. The *Voyage* is the work by which Alphonse Karr is best known in this country, and is the one which the critics say will longest hold the attention

of posterity. We may appropriately refer to what we have said once before as to this book, of which, by the way, we were forcibly reminded on listening recently at Chiswick, to the address of another literary gardener Mr. R. D. Blackmore. The writer of the "*Voyage*" sets out by lamenting in somewhat envious tones the good fortune of one of his friends, who was about starting for a lengthened trip in foreign lands, with a view of studying their features, their people, their products, their mode of Government, and the like. Scarcely, however, has the author set foot in his own garden than his despondency and envy vanish. His garden to him a kingdom is, and he goes on in gossiping mood to describe its inhabitants and their manners and customs, and finally makes out a very good case for himself as against his trave'-seeking friend. In the most pleasant and agreeable of strains, he discourses about plants, and especially about insects, and shows how one need not set foot beyond the limits of one's own domain to realise as much pleasure as can be obtained from foreign travel. The good-natured fun directed against the *savans* and their pedantic terminology, and against the florists with their narrow views of what constitutes beauty, must be read to be appreciated. No extract would suffice to convey an idea of their good-humoured banter. But M. Karr was no more able than other scoffers to propose a better system, and the *savans* may well retort that while their phraseology is intelligible enough to those who care to learn, his own are of no value save to the reader of light literature, and are of no service even to the *dilettante*, who very likely wishes to know what he is reading about, and to compare it with what he sees around him. All of us who read Molière can laugh with him at the doctors, and appreciate his raillery at their expense, but we are glad enough, nevertheless, to avail ourselves of their services in case of need. So, likewise, the *savans* and the "florists" can hardly fail to enjoy the laugh with M. Karr, and, more than that, they would be ready to mend their ways, and adopt any suggestion which would be likely to improve matters; but on these points M. Karr (like Mr. Ruskin, who indulges in similar diatribes) is silent.

Home Correspondence.

MUSHROOMS.—The season has now arrived for making the beds for autumn and early winter bearing. To obtain success, it is essential that suitable material for the Mushroom-bed and good spawn should be at command, the locality of the bed is not very important if an equable temperature can be obtained; consequently we see or read of good Mushrooms being grown in very curious situations. A mean temperature of 55° to 60° appears to be the most suitable, combined with a moderately moist atmosphere. It is my duty to keep up a daily supply of Mushrooms for about eight months, consequently it is necessary that I have a sufficient supply, and I never keep a bed lingering on after it has produced its principal crop, but clear it out and make a new one. The preparation of the manure is a very essential point, the object being to induce a gentle fermentation and sweetening; a good amount of the short litter should be retained in the manure, and after it has lain in a heap, and been turned over several times, the bed should be made and trodden moderately firm to a depth of about 16 inches. The spawn should be inserted when the temperature of the bed is about 80°, and Mushrooms will appear in about a month or six weeks later. After a long trial of various kinds, I find that New Milltrack is the best for my purpose. I have used it since February, 1888. *Edward Gilman, Ingestre.*

CHRYSANTHEMUM QUESTIONS AND ANSWERS.—In applying sulphate of ammonia to Chrysanthemums, how much should be added to each gallon of water, and how often should it be used? Is it necessary or desirable to use other stimulants at the same time, and at what stage of the flower should it be discontinued? Why do incurved varieties, such as the Queen, reflex instead of incurve? I always suffer from damp, and I am very anxious to avoid it as much as possible. Is it wise to put on all the ventilation possible, with plenty of fire-heat? Should the top lights be left open at night, or the front ones, or both? If you will kindly give me your advice in your next issue, I shall be obliged. *Constant Reader.* [Sulphate of ammonia applied to the plants, under proper conditions, is a valuable stimulant, none more so, in my opinion, for heightening the colour of the blooms, rendering the petals firm and the foliage a dark-green colour. Applied injudiciously, it is most injurious. Never should sulphate of ammonia be given to plants which are not well furnished with active roots. The cultivator should make himself certain on this point first, by turning two or three plants out of their pots to see, and if they are not well rooted, pure water only should be given. If the pots are full of roots, dissolve one tablespoonful of sulphate of ammonia in 4 gallons of weak liquid manure, and apply it to the plants once a week. After two doses, use the same quantity in 3 gallons of water. If the plants were pale in colour, an alteration will soon be visible. Some growers sprinkle the ammonia on the surface of the soil and water it in, but this is dangerous to the surface-roots. If the plants are vigorous in growth, a sprinkle of Clay's fertiliser or Thomson's Vine manure once a fortnight on the surface of the pots, and watered in, will be beneficial to the plants, in addition to the ammonia, applying the latter midway between the times of application of the sulphate of ammonia. The advantage of the two manures named is, that they can be used in wet weather when the plants do not need artificial watering. In addition to the manures named, a dose or two of soot-water will be an advantage to the plants. When the blooms are



The Late ALPHONSE KARR.

three-parts expanded, all stimulants should be stopped, giving nothing but clear water. The chief reason why such varieties of the incurved section as those belonging to the "Queen" family reflex their petals instead of incurving them properly is, that the buds were "taken" too early for these special kinds. If the plants are very strong in growth, and the flower-buds which form, say, the first week in August, then such blooms scarcely ever incurve properly in the southern counties of England. Even a fortnight later than the date named will produce ill-shaped blossoms if the plants are strong in growth, the wood immature, the plants having been highly fed, will produce these objectionable flowers. To have Chrysanthemums of the incurved section in a perfect state of development, it is absolutely necessary that the wood should be mature, and the buds selected at the proper time. The damping of the blooms is a very troublesome evil to contend with, even to the most experienced of growers, when the weather is unfavourable—warm, foggy, and damp weather being the worst at a time when the flowers are unfolding their petals; it is generally admitted, though, that excess in feeding the plants is the main cause of the mischief. [It is due to a mildew fungus. Ed.]. Abundance of ventilation should be given to the plants when first housed, and also when the blooms are developing, but in the latter case direct draughts of air should be avoided. In dull weather, the hot-water pipes should be kept warm, ventilation admitted at the top of the house at all times—of course, more so in the daytime than at night, and also a little air admitted through the front part of the house, but avoiding a direct draught, especially in cold and windy weather. *E. Molyneux.*]

PAPRIKA.—The allusion made to Pimientos in a recent issue of the *Gardeners' Chronicle*, reminds me that the same articles of consumption are in common use in Hungary and south-eastern Europe generally. In conjunction with beef, veal, and fowl, cut into ½-inch cubes, and thin slices of bacon-fat and onions, they form the easily concocted nutritious dish known in the first-named country as Gullasch, *i.e.*, horseman's food. To make this dish, the Pimiento fruit, one of only middling pungency, is gathered when ripe, dried in the sun, and ground in a mill into a fine powder. It is best ground when wanted, as there is a loss of flavour when it is ground and stored for any length of time. The following is a good recipe for making a beef Gullasch:—Take 2 lb. fillet, cut into dice, lay a ¼ of a lb. of the fat of bacon, and as much of sliced Onion in the saucepan, the beef above that, and just cover it with water; soup is better, and enough vinegar to make it slightly acid, together with a pinch of salt. Let the whole simmer till the beef is tender; then take out the latter, and let the contents boil for ten minutes. Strain through a sieve, put the liquor and the beef again into the saucepan, add half a tablespoonful of Paprika powder, and cook for five minutes. Those persons who like a warmer dish, may use a tablespoonful of the powder. *Poszony.*

THE ROYAL HORTICULTURAL SOCIETY.—In putting forward the following question, I may be stirring up a matter which has already been discussed by the authorities of the Royal Horticultural Society, and decided in the negative. The question is this. Would it not be well to advertise the fortnightly meetings of the Royal Horticultural Society much more widely than is at present done? First, of the good it would do. It would be the means, if judiciously carried out, of drawing a certainly larger number of people to the Drill Hall. We will presume that all amateurs who are enthusiasts about horticulture are aware of the existence of the Society, of the place in which its meetings are held, and when they are held; some are probably Fellows, and occasionally put in an appearance, but there are very many real lovers of flowers who know nothing whatever of the Royal Horticultural Society, and certainly nothing of the Drill Hall, Westminster. And besides these classes, there are those people (and they are numberless, as witness the continuous flow of visitors to all London exhibitions and places of interest) who are but waiting to be told where to go, and where to spend their holiday hours and loose cash; but they must be told. Now, no one doubts but that a botanical or floral exhibition is a delightful and ennobling means of filling up the spare hours of the wealthy, and of relaxing the strained energies of the busy man. It needs no demonstration, therefore, that it would be a good thing for the public. Then about the Society. I should imagine that if carried out as economically as possible, but so as to reach the eyes of all classes who have a shilling to spend, judicious advertising would increase the funds of the Society; this would be a good thing for botanical research generally, and an additional encouragement to horticulture in England. The encouragement afforded by the Society is now great, and is, without doubt, felt throughout the country; but it might be greater still. Then, as regards the exhibitors, especially trade exhibitors. The more people are induced to attend the meetings, the more exhibits will be got together, for naturally, when nurserymen take their well-grown, their novel, or their meritorious exhibits to the meetings, they do it simply to add to their reputation and spread their name further, either by obtaining reports in the papers of the award of medals or certificates, or through the number of people who are come to inspect and take notes of their exhibits. And these meetings differ from the ordinary flower show, in that at a flower show each tries to outdo his neighbour in producing well-grown stuff; but here not only do people bring old things well-grown, but they are ever endeavouring to originate or introduce some fresh kind superior to the old. These meetings are an incentive to these growers in this direction, but the latter will not come if the reporters and the public stay away; and they will stay at home also, growing the old, old things over and over again. Surely, then, just a short notice in each of the large London dailies a day or so beforehand, and a few posters (such as those we had on the occasion of the Temple Show) at some of the London railway stations, would not be

amiss. The public would be certain to flock in, thus reimbursing the Society; and as a result of the daily paper advertisements, the reporters also to keep the thing going. I almost daily meet amateur horticulturists who are totally in the dark as to whether there is such a body in existence, and as to the whereabouts of its meetings. If the Scottish Drill Hall were one of the meanest dwellings in the neighbourhood of Timbuctoo, it could scarcely be less talked of. *Adolesenex.*

SUNFLOWERS AND BEES—Is it generally admitted that the single Sunflower has a great deal to do with the discoloration of honeycomb? Years ago, when bee-keeping, more or less, was a specialty here, I noticed that when we grew some of the large single-flowered species, the honey was very dark, and by way of experiment we grew more Sunflowers the following year, and the honey was correspondingly darker in colour. As a matter of course, we discontinued growing these Sunflowers, and subsequently had the best of honey. This year a lot of Russian Giant Sunflower was planted in close proximity to the bees, and again the fact that dark honey follows the planting of the Sunflower was exemplified in a most lamentable manner, for the first lot of honey taken was almost black, and consequently of little worth. *G. B. Claydon, Holbecks Park.*

THE CRACKING OF MELONS.—I have read the remarks on the above subject that have appeared in these columns of late, and I should suppose that there is something beside ordinary culture to bring about the cracking of the fruits. I have grown about 120 Melons this year, and have not had any cracked fruits, and my methods are the ordinary ones. Loam is the soil employed, and the plants are assisted with manure whilst the fruits are swelling; after it is seen that the fruit has begun to ripen, water is withheld from the roots, and syringing is stopped, but all available spaces about the house or pit and round about the fruits are kept damped down, and the ventilation is good. When the fruit is colouring, the lights are closed in the afternoon for about two hours, and then a small amount of ventilation is afforded, shutting up again in the morning for an hour or two, and then opening the ventilators again in the usual way. All the Melon plants are treated alike, and we have grown Sutton's Triumph, which is a free setter, of good flavour; Benham Beauty, Hero of Lockinge, the Countess, Read's Scarlet Flesh, and Golden Perfection, and V.C., a new one. I saw some Melon plants in the early summer which consisted chiefly of Golden Perfection, which were cracked so badly as to have been useless; and from what I remember to have noted, the house was a great deal too damp, and the plants fruiting in too rich a soil, if one might judge by the immense size of the fruits. I do not care to see such huge fruits, as they are generally deficient in flavour. *W. A. Cook.*

RASPBERRIES.—If we do not have a big crop of Raspberries next year, it will not be for lack of canes. I very much doubt whether anyone has ever seen them taller, and, perhaps, also stouter, than they are now, and only more ripening weather is needed to ensure that they are fertile. September has given us some three weeks of the very finest ripening weather possible; were it continued till the end of the month, the result would be invaluable. Even but a week's fine warm weather at this time of the year is of inestimable benefit, and to few things more, perhaps, than to Raspberry canes. Small canes soon ripen themselves, but those of some 8 to 9 feet require a good deal of hardening. All good gardeners who have regard for the needs of the new canes, have cut out all the old ones, and allowed sun and wind to play freely about the plantations. Out in the fields, where Raspberries are grown in immense breadths, because the soil is not so deeply worked as in gardens, and is not so highly fed, the canes are of moderate growth, but are also very stiff; those can usually secure their full share of sun and air, and are of sheer necessity cut hard back in the winter to the fully ripened wood. In gardens, the canes are often left of considerable height, therefore full ripening is needful. It is very doubtful whether there is much gain attached to such long canes, but perhaps the season of fruiting is on them somewhat more prolonged. That we shall have a heavy crop of fruit next season seems certain, as late spring frosts, if they come, do not materially affect Raspberries. As to sorts, although not so very numerous, still we have enough, whether we grow Fastolf, Red Antwerp, Carter's Prolific, Northumberland Fillbasket, Baumforth's Seedling, Lord Beaconsfield, or the more recently-introduced Superlative; and, if well cultivated, there will be no lack of rich fruit. *A. D.*



Fig. 78.—Calochortus Madrensis.

PEAR CITRON DES CARMES — Mr. Ward says at p. 329 that "perhaps I have not planted the trees in a sunny position, or a south wall, in well-drained soil." The trees in question are not planted on a south wall, but in good well-drained soil on a west wall, an aspect that gets some of our best Pears—at least, this is the case here. I have elicited the opinion of different individuals, nurserymen and others, regarding this variety of Pear, and no one has given me a very good account of it. It does not do to pay much regard to fruit catalogues, for it is seldom that we find any therein that are not good or excellent. Citron des Carmes may be of passable flavour in some places, but not generally. Mr. Ward refers to Rood Aston Park, but there are a good many different kinds of soils between us and that place; in fact, there are many different soils on this estate. Other varieties of Pears do well with us, and I should be glad to see Mr. Ward any time this autumn, and show them to him. *W. A. Cook, Compton Bassett Gardens.*

LAPAGERIA ROSEA AND L. ALBA. — These two beautiful greenhouse climbers I saw recently growing to perfection in J. E. Vanner, Esq.'s, garden, Camden Wood, Chislehurst, and for finely-developed masses of flowers I have not seen their equal. Mr. Barnard, the gardener, told me that he grows them in peat alone, and keeps them dryish during the winter months. *J. C.*

FROGS.—The question raised by "W. H. S." in your issue of Sept. 20, as to the possibility of frogs making their dinners off green Peas, will surely meet with emphatic denial from some naturalist competent to answer with authority. Meanwhile, it is to be hoped for the sake of his garden, that "W. H. S." will stay the war of extermination he appears to have declared against the frogs in it. I am reminded of an incident which occurred last spring near Mentone, in the south of France. On the edge of a hillside vineyard, four or five boys were at play. They had killed a fine lizard of some very large species, and transfixed it on a stick, and were evidently immensely amused with it. I made them bring it near to show me, and then did my best to stop their fun, explaining to them as well as I could the cruelty of their conduct and the wrong they had done to this beautiful creature. I made them mark the green lustre of its skin, the brilliant turquoise of its mangled throat. I tried to get them to comprehend that they and it were fellow creatures, since *le bon Dieu* who made them had made the lizard also. I tried to show them that they had no right for their idle sport to destroy the creature's happy, innocent, life. But there the biggest of the boys interfered with my sermon. He brightened up, and asserted eagerly that their action was righteous. In his heat, he forgot his best school French, and declared that the lizard was *très mal a'bête*, that it robbed his father's vineyard, that it would devour in one night a whole great basketful of Grapes, "*Grand que cela!*" making a circle of his two outstretched arms. True, he had never caught it in the act of gathering the Grapes, nor had any one else whom he had ever known beheld the lizard at work. It was found among the Vines, and that was sufficient evidence. I left these young rascals unconvinced of their iniquity, though perhaps a little ashamed of having massacred the beautiful lizard; and I have recalled the scene only because it seems to bear some relation to the fable of the frogs and Green Peas. It is well known, however, that frogs, in common with lizards and toads, feed solely on living prey. It is essential that the object move, be it ever so slightly, before the agile tongue makes the fatal dart. Frogs will swallow slugs in quantities. I have read that so

greedy are they for this dainty, that they will even forego their mid-day sleep in order to gain more time to gorge themselves where shell-less snails are plenty. It is also said that at one time they were imported from France to swell the stock of English frogs, so valuable was their presence in our country deemed. If "W. H. S." will take the trouble to examine a frog's mouth, he will see if it seems possible to him that the creature could with it break a Pea-pod from the stem, and open it in order to swallow the contents. *E. V. B., September* 25. [Preposterous. Ed.]

SEQUOIA GIGANTEA.—At Fairlawn this Conifer grows into fine healthy specimens. A short distance from the mansion I noticed a very fine specimen, about thirty years old, which was planted by Mr. Ross, and which has reached the height of nearly 60 feet. There is no doubt there are many higher Sequoias to be found in this country, but it is a question, if there be many that present a more healthy and robust appearance. *H. Markham.*

ERYNGIUM GLACIALE.—In the interesting article recently published by the *Gardeners' Chronicle* on M. Boissier's garden at Valleyres, reference is made to this species of Eryngo as existing probably in no other collection. I do not think the plant in question is by any means so rare as the writer supposes. I have cultivated it for some years, and distributed it, having originally acquired the seeds of a German firm, who no doubt supplied them to some, if not many, others. It is certainly a very distinct little species, growing barely 3 inches high, with tiny flabellate spiny foliage of a greyish tint, and diminutive heads of flowers, remarkable chiefly for the contrast they afford to the larger heads of the taller and better-known members of the genus. *W. T., Ipswich.*

THE TREATMENT OF PEARS AND APPLES.—At the close of the hardy fruit season, it is well to compare notes of various kinds of fruits new and old. Of Pears, it cannot be said that the trees are fruitless, although some are in that condition, but a great number of the fruits are cracked, spotted with fungus, or have blemishes of one kind or another which do not make for good keeping. If there are trees which have fruit so blemished every year, and the roots are in good order and not too deep in the soil, they should be marked for grafting with other varieties; but let trees which are unhealthy and aged be dug up, and plant others which are known to suit the soil and district. Some varieties of Apples are as little adapted for certain soils and districts as Pears, and these require to be treated in like manner. Canker is the Apple's great foe, particularly in light soils, or where water is stagnant in the soil. In such soils there is no need to give up the culture of the Apple, but the trees planted should be on dwarfing stocks, and grown as cordons, bushes, &c. When this is done, the roots may be fed with sound loam and manure, because they are less in extent and bulk than those of standards, and if the trees give good returns for a dozen years, that is sufficient. *A. Evans, Lythe Hill, Haslemere.*

CALOCHORTUS MADRENSIS.

[Fig. 78.]

Calochortus madrensis was discovered by Mr. C. G. Pringle in 1887, on the Pine plains at the base of the Sierra Madre Mountains in Northern Mexico, and was named and described by Dr. Sereno Watson in the fifteenth fascicle of his *Contributions to American Botany*, p. 283. It has a small, globose, fibrous-coated bulb, a slender stem about a span long, linear leaves, and oblong sepals, nearly as long as the obovate-cuneate orange-yellow petals, which have a very obscure glandular nectary, and a band of orange-coloured hairs above the base. The capsule is linear, varying in length from 1 to 1½ inch. The drawing was made from a plant that flowered at Kew this summer. It belongs, like the three other Mexican species, to the sub-genus Cyclobothra of Sweet, in which the sepals are much less distinctly different from the petals in shape and colouring than in the typical Californian Calochorti. They furnish a link of transition between the extreme Calochorti and the other genera of Tulipeæ, of which Fritillaria comes nearest. *J. G. Baker.*

The Weather.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature: Above (+) or below (−) the Mean for the week ending Sept. 27.	Accumulated: Above 42° for the Week.	Accumulated: Below 42°, for the Week.	Accumulated: Above 42°, difference from Mean since Jan. 1, 1890.	Accumulated: Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall: More (+) or less (−) than Mean for Week.	Rainfall: No. of Rainy Days since Jan. 1, 1890.	Rainfall: Total fall since Jan. 1, 1890.	Bright Sun: Percentage of possible Duration for the week.	Bright Sun: Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	4 +	88	0	+ 154	— 73	2 —	190	35.9	17	25
2	5 +	96	0	— 6	— 59	1	160	22.2	20	30
3	1 +	106	0	+ 61	— 93	2 —	137	18.1	33	30
4	4 +	114	0	— 28	— 39	5 —	138	17.7	39	38
5	3 +	105	0	— 54	— 28	3 —	133	16.8	32	33
6	4 +	120	0	— 33	— 68	2 —	132	20.7	33	35
7	5 +	104	0	+ 16	— 73	1 —	164	35.3	17	32
8	3 +	107	0	+ 46	— 81	6 —	154	23.9	20	30
9	2 +	107	0	— 60	+ 11	7 —	156	27.0	24	36
10	3 +	95	0	+ 18	— 56	0 av.	181	25.3	10	30
11	2 +	105	0	+ 20	— 15	5 —	171	29.7	21	33
12	0 av.	113	0	+ 10	— 22	5 —	153	23.9	36	41

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending September 27, is furnished from the Meteorological Office:—

"The *weather* has been very dull, with frequent rain, over Ireland and Scotland; over England, however, after being unsettled, with rain and thunderstorms during the earlier days of the week, it became fine and bright generally.

"The *temperature* has just equalled the mean in the 'Channel Islands,' but in all districts it has been above, the excess having ranged from 2° in 'England, S.W.,' and 'Ireland, S.,' to 5° in the west and east of Scotland. The highest of the maxima were registered either on the 26th or 27th, when the thermometer rose to between 65° and 72° in Scotland, from 69° to 72° in Ireland, and from 68° to 79° over England. The lowest of the minima, which were recorded on rather irregular dates, varied from 39° in 'Ireland, N.,' and 41° in the 'Midland Counties,' to 48° in 'England, N.W.,' and 49° in the 'Channel Islands.'

"The *rainfall* has been equal to the mean in 'Ireland, N.,' but less in all other parts of the kingdom.

"*Bright sunshine* shows a still further decrease; over Ireland, Scotland, and all the western parts of England it has been very deficient, the percentage of the possible duration having ranged from 10 to 23; over southern, central, and eastern England the percentage has ranged from 32 to 39."

Markets.

COVENT GARDEN, October 2.

Market shows scarcely any alteration from the previous quotations. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	7 0	Peaches, dozen	1 0	8 0
Cobs, Kent, 100 lb.	50 0	—	Pine-apples, St. Michael, each	2 0	6 0
Grapes, lb.	0 9	2 9	Plums, ½-sieve	7 0	11 0
Lemons, per case	20 0	10 0			
Melons, each	0 6	2 0			

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, each	0 4	0 6	Mushrooms, punnet	2 0	—
Beans, French, lb.	0 4	—	Mustard and Cress, punnet	0 4	—
Beet, red, per dozen	1 0	2 0	Onions, per bunch	0 5	—
Carrots, per bunch	0 6	—	Peas, per quart	1 0	—
Cauliflowers, each	0 3	—	Parsley, per bunch	0 4	—
Celery, per bundle	1 6	2 0	Shallots, per lb.	0 0	—
Cucumbers, each	0 4	0 6	Spinach, per bushel	2 0	—
Endive, per dozen	2 0	—	Tomatos, per lb.	0 9	—
Herbs, per bunch	0 4	—	Turnips, per bunch, new	0 4	—
Lettuces, per dozen	1 6	—			

Potatos.—Arrivals still very heavy, and only a very limited demand, and that only for best samples, viz., Snowdrops, 85*s.* to 90*s.*; Hebrons, 70*s.* to 80*s.*; Imperators, 80*s.* to 85*s.*; Magnums, 60*s.* to 70*s. J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Ferns, in var., doz	4 0	18 0
Aspidistra, doz.	18 0	42 0	Ficus elastica, each	1 6	7 0
— speci. plants, each	7 6	10 6	Foliage plants, various, each	0	10 0
Asters, per doz.	4 0	9 0	Fuchsia, per doz.	3 0	6 0
Begonias, per doz.	4 0	6 0	Heliotrope, per doz.	4 0	6 0
Bouvardias, p. doz.	9 0	18 0	Hydrangeas, doz.	6 0	18 0
Chrsanthem., p. doz.	4 0	18 0	Liliums, various, per dozen	9 0	18 0
Coleus, per dozen	2 0	6 0	Marguerites, doz.	6 0	12 0
Cyperus, per dozen	4 0	12 0	Mignonette, per doz.	3 0	6 0
Dracæna terminalis, per dozen	30 0	60 0	Palms in variety, each	2 6	21 0
— viridis, per doz.	12 0	24 0	Pelargoniums, scarlet, per dozen	3 0	6 0
Euonymus, in var., per dozen	6 0	18 0	— per doz.	6 0	12 0
Evergreens, in var., per dozen	6 0	24 0	Solanums, per doz.	9 0	15 0
Ericas, various, doz.	8 0	18 0			

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Mignonette, 12 bun.	1 0	3 0
Asters, 12 bunches	3 0	8 0	Pelargoniums, scarlet, 12 spr.	0 3	0 6
— French, bunch	1 0	1 6	— dozen sprays	0 4	0 9
Bouvardias, per bun.	0 6	1 0	Primulas, double, 12 sprays	0 6	1 0
Calla æthiopica, 12 bl.	2 0	5 0	Poppies, various, doz. bunches	1 0	2 0
Carnations, 12 blms.	1 0	2 0	Pyrethrum, 12 bun.	2 0	4 0
— 12 bunches	4 0	6 0	Roses, Tea, per doz.	0 6	1 6
Chrysanth., 12 bun.	3 0	6 0	— coloured, dozen	1 0	1 6
— 12 blooms	1 0	3 0	— red, per 12 bun.	2 0	6 0
Cornflower, 12 bun.	1 6	3 0	— Safrano, dozen	1 0	2 0
Dahlias, 12 bun.	2 0	4 0	— outdoor, 12 bun.	1 0	3 0
Eucharis, per dozen	2 0	4 0	Stephanotis, 12 spr.	1 6	3 0
Gardenias, 12 blooms	2 0	4 0	Sultan, 12 bunches	3 0	4 0
Gladiolus, 12 bun.	6 0	12 0	Tuberoses, 12 blms.	0 3	0 6
Heliotropes, 12 spr.	0 6	1 0	Violets, 12 bun.	0 9	2 0
Lilium, var., 12 bl.	0 6	4 0	— Parme, Fr., bun.	2 6	3 6
Maiden Hair Fern, do	4 0	9 0	— dark, Fr., bun.	1 0	1 6
Marguerites, 12 bun.	3 0	6 0			
Michaelmas Daisy, 12 bun.	1 0	8 0			

Orchid-bloom in variety. Not over plentiful.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending September 27 and for the corresponding period in last year:—1890, Wheat, 31*s.* 6*d.*; Barley, 29*s.* 9*d.*; Oats, 17*s.* 8*d.* 1889, Wheat, 29*s.* 1*d.*; Barley, 29*s.*; Oats, 16*s.* 11*d.*

POTATOS.

Borough and Spitalfields: *September* 30.—Quotations:—Hebrons, 60*s.* to 90*s.*; Regents, 50*s.* to 70*s.*; Early Rose, 50*s.* to 60*s.*; Magnums, 60*s.* to 75*s.*; Imperators, 55*s.* to 80*s.* per ton.

Spitalfields: *October* 1. — Quotations: — Magnums, 45*s.* to 65*s.*; Regents, 45*s.* to 60*s.*; Imperators, 40*s.* to 70*s.*; and Hebrons, 40*s.* to 60*s.* per ton.

Enquiries.

"*He that questioneth much shall learn much.*"—Bacon.

Bee-food.—Can any of our correspondents inform "A. B." if Mertensia alpina, a Boraginaceous plant from the Rocky Mountains, is of use as bee-food?

Notices to Correspondents.

American Blight: *W. C.* See Answers to Correspondents in our last issue.

Books: *T. G. O.* Obtain the *Handybook of the Flower Garden*, by D. Thomson (Blackwood & Sons, London and Edinburgh).—*J. A. O. A Book About Roses*, by the Rev. Dean Hole, is published by W. Blackwood & Sons, Edinburgh and London.

Carnations: *P. F. A.* What you send are the abortive flowers of the Wheat-Ear Carnation. It always produces an increased number of bracts, and does not flower properly.

Damping of Blooms of Chrysanthemums: *G. S.* It is a result of an attack of a species of mould-fungus that is more noticeable in large, overfed plants, with distended tissues, than in more naturally-grown ones. Damp favours its growth; therefore, keep the floors, staging, &c., as dry as possible, and use the hot-water apparatus to dry the air of the house, giving ample, but not excessive, ventilation. Dusting with flowers-of-sulphur might be tried as a further remedy.

Dracænas: *Foreman.* A diseased condition probably arising from imperfect ventilation and a too humid atmosphere. This variety having so little green matter in it is particularly liable to it.

Fungi: *A. C. F.* 1 and 3, Coniophora centrifuga, mostly in barren mycelium condition; 2 and 4, strands of mycelium of Agaricus melleus, formerly known as Rhizomorpha. — *C. W. D.* Spumaria alba, a very common Myrogaster, creeping over anything that comes in its way; it does no harm to the plants it creeps over.—*C. Steele.* Pleurotus acerosus, not edible; it probably grows from buried wood.

Grapes: *E. J. M.* The Bowood Muscat is the Muscat of Alexandria, and can therefore be shown in competition as that variety. It was thought at one time to be another variety, but the Chiswick trials dispelled that opinion. The name Bowood Muscat should be expunged.

Grapes: *W. J. W.* Your Grapes are attacked by the Vine-moth, Tortrix angustiorana, described in "Vines and Vine Culture," and figured in the last number of the *Gardeners' Chronicle*. There is no known remedy, except catching them and destroying them.

Greenhouse Fittings: *Inventor.* Apply at the Patent Office, Chancery Lane. The expense of taking out a patent is not great. Avoid agents.

Lapageria rosea: *F. S. & Co.* A good flower, but there are several better.

Mulberry Tree: *Young Gardener.* If the branch lays on the ground, it will in time take root, and the earlier if it be sunk 6 inches into the soil, and covered up with soil at the point of juncture with the earth. If not badly splintered, it might be possible to support the branch with a Y-shaped prop, and iron bands. Stakes, 2 inches of diameter, of Mulberry, take root if put into the soil to the depth of 1 foot or more.

Names of Fruits: *W. Bell.* Your Grape is Black Hamburgh; the want of flavour is owing to some bad condition of the plant.—*L. B. G.* 1, not known; 2, King of the Pippins; 3, old English Codlin; 4, Cockle's Pippin; 5, Cluster Golden Pippin; 6, Catshead.—*C. H. C.* 1, Sturmer Pippin; 2, Court of Wick.—*Lymington.* Your Pear is Duchesse d'Angoulême, a variety requiring a warmer situation; not suited for standard.—*A. B.* 1, Gravenstein; 2, Duchess of Oldenburg; 3, Hollandbury; 4, Beauty of Kent. — *Molkte.* We do not recognise the Apple from the specimen sent.—*George Phillips.* 1, Duchess of Oldenburg; 2, Ecklinville seedling; 3, Golden Noble; 4, unknown; 5, Baumann's Red Winter Reinette; 6, Beauty of Kent.—*J. H.* 1, Glou Morçeau; 2, Beurré Diel; 3, Beurré Sterckmans; 5, Hacon's Incomparable; 6, General Todtleben.—*W. Hopwood.* 1, quite decayed; 2, Round Winter Nonsuch; 4, Yellow Bellefleur.—*H. M.* Apple Lord Grosvenor.

Names of Plants: *R. M.* Carthamnus tinctorius. —*Alpha.* The Silver Fir (Abies pectinata); the Orach (Atriplex hortensis).—*T. G.* Apparently the Norway Maple (Acer platanoides).—*F. K.* A Stapelia, of which we will give you the name next week. Not a Cactus, but an Asclepiad.—*C. P.* Phygelius capensis.—*W. J. S.* Vanda tricolor.—*C. L. B.* 1, Cattleya Forbesii; 2, Aspidium coriaceum; 3, Lastrea frondosa—fruits next week. —*W. S. Z.* Montbretia crocosmæflora.—*H. S. A.* 1, Lastrea aristata variegata; 2, Davallia canariensis.—*W. Higgie.* Rodriguesia secunda.—*C. S. S.* 1, Tecoma (Bignonia) jasminoides; 2, Kalosanthes coccinea.—*W. R.* Polygonum orientale.—*G. Paul.* —Sedium spurium; S. s. album.

Old Pear Tree: *R. H. B.* If the tree be a very old one, grafting the branches will do no good; on the contrary, if the tree is less than fifteen years old, perhaps carefully lifting and replanting it in fresh loamy soil may restore the tree to health. If the tree is young and healthy, but the variety is not liked, cut off the branches at 6 inches from the stem at grafting time, and graft with any good variety. The grafts should be taken a month or two before they are made use of, and buried in soil to nearly their entire depth in a cool place.

Oakleaf Galls: *Oaks.* The growth is due to the attacks of a gall-mite (Neuroterus lenticularis). It is commonly called Oak-spangles. (Fig. 79.)



Fig. 79.—Oak-spangles.

Leaf-miner: *J. E. G.* Apply soot or soot-water over the foliage. The attacks are seldom after this time of year; but all badly-infested leaves should be burnt, not thrown aside for the maggot to escape and pass the winter as a chrysalis in the



Fig. 80.—Leaf-miner.

earth, to be a plague next year. Where the damage is small, squeezing the insect in the leaf between finger and thumb is sufficient to kill it. (Fig. 80.)

Pelargonium: *G. P.* We can see no evidence of a cross.

Pine-apples: *R. W.* The pit being 72 feet long, and only thirty fruits being required in a year, it admits of being divided into two divisions—a fruiting-pit of 30 feet long, and a pit of 42 feet for bringing on succession plants. The heating arrangements are good enough as proposed for succession Pines, but there should be one-third more pipes in the other portion, and the plunging-pit at the back of the structure will do very well. It would be advisable to grow Black Jamaica with the others you name. Suckers may be rooted in dung frames. It is no advantage to grow kinds that swarm with suckers.

Plants for Walls: *G. S.* For the south wall, a pink Tea Rose, deliciously scented, and a good bloomer, is Catherine Mermet; the hybrid Tea, Cheshunt Hybrid, might also find a place. Plant Camellias on the wall of the cool Peach-house.

Plants not Flowering in a Corridor: *W. S.* That plants will not flower well under a roof of Hartley's rolled plate-glass, and with no direct sunlight after 1 p.m., is not a matter for surprise; but the rapid dropping of the flowers from plants placed in the corridor, is perhaps traceable to an escape of gas, as may also be the yellow colour of the foliage.

Seedling Cactus Dahlia: *Hy. C. & Sons.* One of the most pleasing colours we have ever seen in Cactus Dahlias, and not too large, or coarse. Worth increasing.

Spraying with Sulphate of Copper: *M. H.* 1 lb. of sulphate to 50 gallons of water.

Strawberry Growing: *R. A. Taylor.* Make your front wall flower by 1 foot, and put up staging for the pots, so that none of them is further from the roof-glass than 2 feet. No expensive front lights are needed, only "hit-and-miss" ventilators; and roof-ventilation must be liberally afforded. Strawberry culture, if you do not know anything about it, has plenty of pitfalls for the amateur, and occasional talks with some good gardener would serve you better than books, which often puzzle the non-professional reader. A good manual is *Fruit Culture Under Glass*, by D. Thomson (Blackwood & Sons).

The Big Elm Tree at Rotherwas, Hereford: *P. M. C.* The old tree is figured at p. 1394 of Loudon's *Arboretum and Fruticetum.* It is stated to have been 125 feet high; and the tree appears from the figure to have had two stems of equal height, and one shorter stem, or limb. The point of branching appears to have been about 8 or 9 feet from the ground.

Weeds on Lawn, &c.: *E. M.* 1. Dig the weeds up with all their roots now; fill in the holes made by the weeding-spud with some loam; make the same quite firm; scatter fine lawn-grasses over the spots, and scratch them in, finally patting the surface, so as to embed the seeds in the soil. 2. Watson lawn sand. 3. The best dressing for a lawn in bad condition is loam, decayed farmyard manure well incorporated and screened; and if it be mossy, a navvy barrow-load of wood-ashes, finely sifted, may be evenly scattered over each rod of its surface. The wood-ash dressing may be applied twice or thrice in the growing season, if moss is present in large quantities. The other dressing may be put on in winter or spring—preferably the former; seeds may be raked in with a spring dressing. Do not put on surface-soil of any kind, as it usually abounds in the seeds of weeds. 4. Moss-litter is of value for the manurial properties of dung and urine that it has absorbed. After laying on the ground for a month, the rough remains of the moss-litter must be raked off the lawn. Use it in winter and early spring, before there is any growth perceptible. If it has been long in the stable, employ three box-barrow loads per rod.

Communications Received.—F. K.—E. L. H.—R. V. & Son —E. H. —F. Geeson.—W. H. Cox.—R. M. (next week.) —H. H. D'O.—P. I. I.—G. J. O.—W. S. M.—H. M.—G. B. C. —T. W.—J. B.—T. R.—A. B.—J. H —E. W.—J. J. W.— W. H. Y.—A. D.—H. J. G.—Wild Rose.—W. H. C.—J. J.— J. T. B.—J. L.—W. Thompson.—J. C.—L. d'L.—J. H.

Specimens, Drawings, or Photographs Received.—L. L., Brussels. —Baron F. v. M., Melbourne. —E. H. W., Scarborough.—J. B. C., Petersfield.—G. P.—J. T. B.—H. C.

DIED, on the 29th ult., Walter Darkin, of Messrs. Laughton & Co., 145, Queen Victoria Street, E.C.

—— Mr. James Hotham, late fruit foreman to Earl Brownlow, Belton House, Grantham, where he has been for the past three-and-a-half years.

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20—Messrs. WM PAUL and SON, Waltham Cross	3	3	0
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26—*Per* SHIRLEY HIBBERD :—			
Dr. KELLOCK, Stamford Hill...	1	1	0
SAMUEL BARLOW, Esq., Castle, Manchester	10	10	0
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Sept.			
3—Mr. GEORGE MONRO, Covent Garden, W.C.	2	2	0
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8—Mr. W. M. BAILLIE, The Gardens, Luton Hoo Park, Luton	1	1	0
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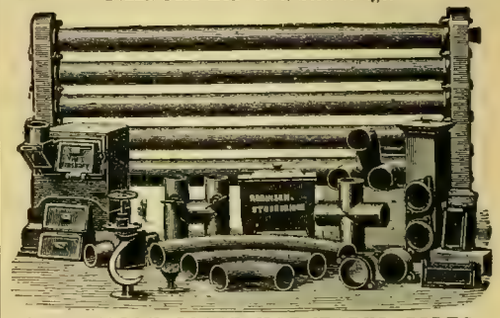
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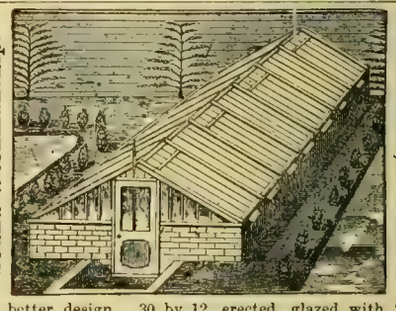
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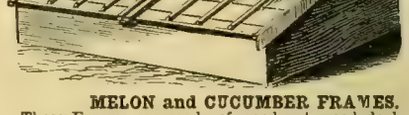
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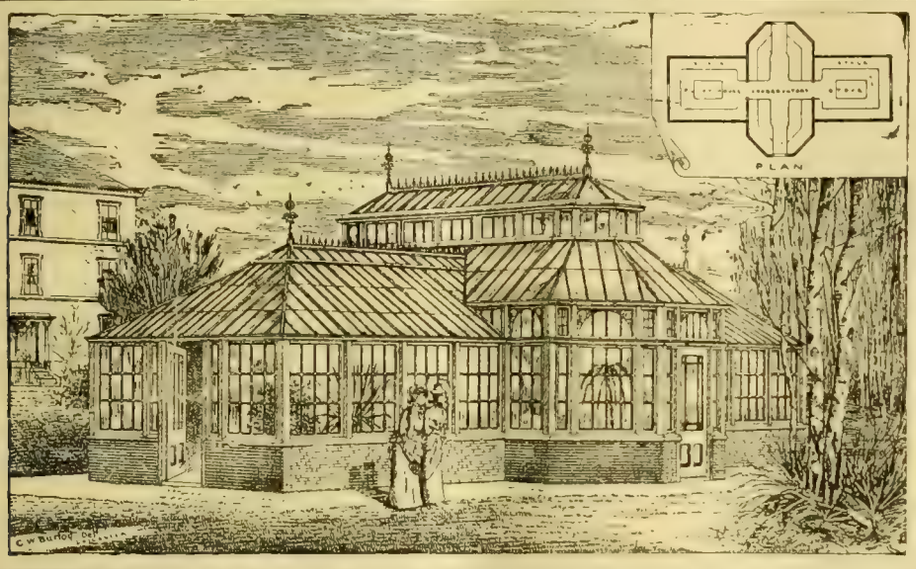
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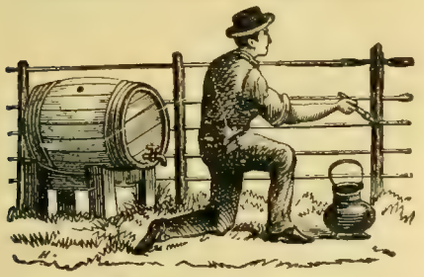
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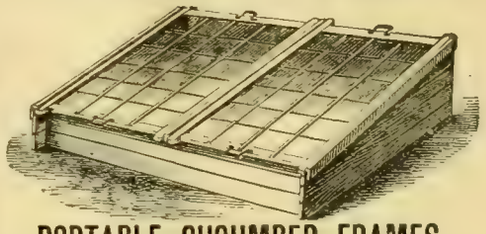


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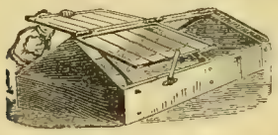
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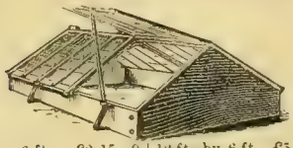
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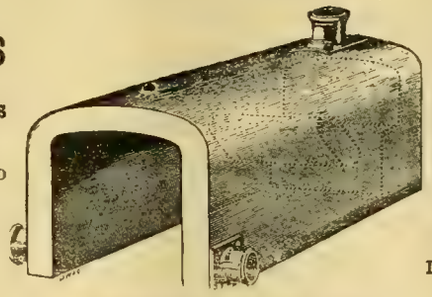
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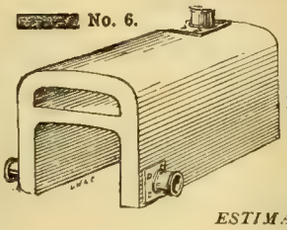
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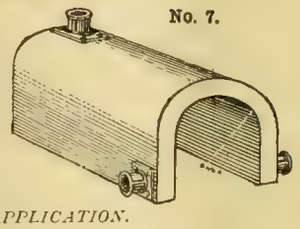
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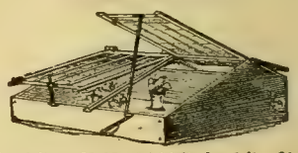
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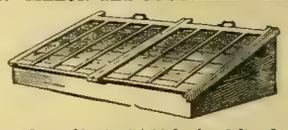
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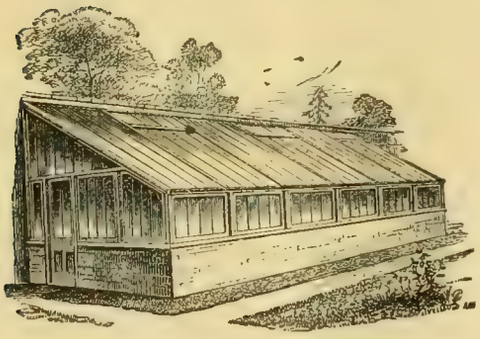


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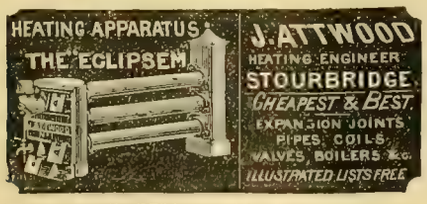


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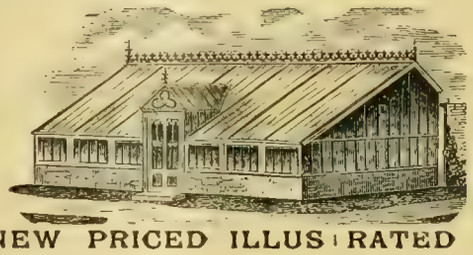
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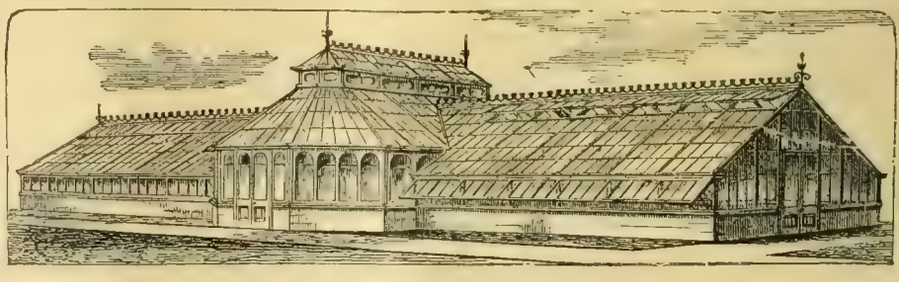
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WANTED, CHOICE FLOWERS of all kinds, for our Shop in Regent Street. Good prices given. Private Gardeners are solicited to correspond.
HOOPER AND CO. (Limited), Covent Garden, W.C.

WANTED TO BUY (for cash), large Plants, suitable for a Winter Garden. ARALIAS, PALMS, DRACÆNAS, PHORMIUMS, TREE FERNS, ACACIA RICEANA, Greenhouse RHODODENDRONS, &c.—Send particulars to Mr. JOHN CARVILL, 83, St. John's Road, S.E.

WANTED, CALCEOLARIA CUTTINGS. Good stuff of Golden Gem and Aurea floribunda. Sample and price per 100, to
H. TITE, Nurseryman, Hampton-on-Thames.

WANTED, 3000 GENISTAS, in 60's or thumb pots. State price.
NORRIS AND SON, Pickford Lane Nursery, Bexley Heath.

WANTED for delivery in autumn, at Norwich, 10,000 HAZEL, 3 to 4 feet, and 10,000 ALDERS, 3 to 4 feet; stout and well rooted. Samples and prices to—
J. JEFFREY, Estate Office, Langley Park, Norwich; Buckenham Station, Great Eastern Railway.

WANTED, strong POT VINES, which have just ripened a crop of fruit. FUCHSIAS, Minnie Banks, King of the Fuchsias, Mrs. E. Bennett, Beauty of Kent, Crown Prince of Prussia; old Stools from beds. Henry Jacoby GERANIUM. GESNERAS in variety. TYDEAS in variety. ACHIMENES, longiflora alba, Margretta, Harry Williams.
H. CANNELL AND SONS, Swanley, Kent.

NOTICE.—Several thousand feet of HORTICULTURAL GLASS, 21-oz., REQUIRED, lowest prices, carriage paid. Please quote to
FREDK. A. WHITE, Royal Nurseries, Bournemouth.

GARDENERS' CHRONICLE, 1862 to 1877, WANTED TO BUY.
Address, G. MILLER, 8, Montagu Place, W.C.

SUTTON'S BULBS. — The best of the season.
"The one hundred Hyacinths I had from your firm are now in bloom, and they are splendid. They win the admiration of all who see them."—Mr. J. BUSSELL, Gardener to Mrs. P. Thursby, Pelham.

SUTTON'S HYACINTHS.—100 named HYACINTHS, in 50 of the best sorts, price 70s.

SUTTON'S BULBS.—GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING. (All Bulbs, value 5s. and upwards, Carriage Free.)

CHOICE FLOWERS AND CHOICE FRUIT.
Buyers of the above will secure in all cases the finest quality at the lowest prices, by applying to
HOOPER'S Flower and Fruit Agency, Covent Garden, W.C.
Consignments of either disposed of on the best market terms, and remittances made immediately. Correspondence invited.

NEW WHITE CARNATION, "Mrs. Muir;" strong, healthy plants, now ready, 1s. 6d. each, 15s. per dozen, £5 per 100; also CARNATIONS and PICOTEES in all the different classes, 6s. per dozen; my own selection.—M. CAMPBELL, Florist, High Blantyre, N.B.

KENTIA SEEDS.—Just arrived in good germinating condition, Seeds of Kentia Belmoreana and Kentia Forsteriana. Price per hundred and per thousand on application to
WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

NARCISSUS, Double White, price £1 per bushel; sample 50, post-free, for 2s. Cash with order.
J. J. CLARK, Goldstone Farm, Brighton.

SHOW and FANCY PANSIES, in Cuttings or Rooted Plants, of all the leading varieties, now ready for sending out.—M. CAMPBELL, Florist, High Blantyre, N.B.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

Prize Cob Filberts.

MR. COOPER, F.R.H.S. (late of Calcot Gardens), is the largest grower in the kingdom of Prize Cob Filbert Trees for Sale. Descriptive and Price LISTS on application to Mr. COOPER, Western Elms, Reading, Berks.

SEAKALE.—Splendid strong forcing. Samples and prices on application.
HARRISON AND SONS, Nurserymen, Leicester.

LAXTON'S STRAWBERRIES. NOBLE, good all round; WHITE KNIGHT, ALBERT, COMMANDER, and LATEST OF ALL. Sturdy growers, and recommended for high flavour.
Price LIST of all best sorts, from—
THOMAS LAXTON, Seed Grower, Bedford.

Strawberries, in 3½-inch pots.

FRANCIS R. KINGHORN offers very strong Plants of all the leading sorts, "La Grosse Sucrée," "Noble," "Latest of All," "Loxford Hall," &c. LIST on application.—Sheen Nurseries, Richmond, Surrey.

Plums and Damsons.

MESSRS. FLETCHER BROS. have a large quantity of the above, Standards and Half-standards.
Ottershaw Nursery, Chertsey, Surrey.

ASPARAGUS PLUMOSUS NANUS, Seedlings, 50s. per 100; in 60-pots, 75s. per 100; in 48-pots, £7 10s. per 100.
COCOS WEDDELIANA, Seedlings, 10s. per 100; thumbs, 50s. per 100; 60-pots, £5 per 100; 48-pots, £2 10s. per 100.
WILLIAM ICETON, Nurseryman and Florist, Putney Park Lane, Putney, S.W.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Dutch Bulbs.
GREAT UNRESERVED SALES.
Four times Weekly.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, all received direct for Unreserved Sale, and lotted to suit the Trade and Private Buyers.
On view morning of Sale, and Catalogues had.

Horsell, near Woking.
SALE of exceptionally well-grown NURSERY STOCK, by order of Mr. R. Collyer, in consequence of the expiration of lease.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Cart House Lane Nursery, Horsell, near Woking (1½ mile from Woking Station, S.W.R.), on MONDAY NEXT, October 13, and two following days, at 12 o'Clock precisely each day, a large quantity of well-grown NURSERY STOCK, comprising 8500 English Yews, beautifully furnished trees—probably one of the best lots in the trade; thousands of Laurels, 1 to 5 feet, in variety; 1000 hybrid and ponticum Rhododendrons, 2000 green and variegated Hollies, 600 specimen Border Shrubs, thousands of Ornamental and Forest Trees, 5000 Apples and Plums.
Particular attention is called to this important Sale, the whole of the Stock being unusually well-grown, and in splendid condition for removal.
May be viewed any day prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Plumstead.
ABSOLUTE CLEARANCE SALE, by order of Mrs. H. Baker, the Land being required immediately for Building Purposes.
Important to the Trade.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Plumstead Nursery, Plumstead, Kent, on MONDAY and TUESDAY NEXT, October 13 and 14, at 12 o'Clock each day, absolutely without reserve, 20,000 PALMS, in 48 and 60-pots, consisting of Kentias, Latanias, Seaforthias, Cocos, and Arecas; 8000 FERNS, in 48 and 60-pots, comprising Adiantum cuneatum and formosum, Pteris in variety, and others; 1000 AZALEAS, amongst them many fine specimens of Fielder's White, invaluable for cutting; large White CAMELLIAS, 1000 Epiphyllums, 3000 Chrysanthemums, 4000 Marguerites and Pelargoniums; 14 GREENHOUSES, 2 PITS, 4000 feet 4-inch Hot-water PIPING, 1500 feet 3-inch PIPING; capital Market VAN, nearly new, in splendid condition; Open VAN, CART, and other effects.
May be viewed two days prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next, 13 000 Lilium auratum and other LILIES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, October 14, at half-past 12 o'Clock precisely, 13,000 LILIUM AURATUM received direct; 10,000 L. LONGIFLORUM, 2000 L. SPECIOSUM RUBRUM and ALBUM, also a portion of the extensive collection of Finest-grown LILIES, from Mr. W. Gordon, of Twickenham, including L. Humboldtii, L. Washingtonianum, L. umbellatum, and L. elegans. Choice Japanese IRIS, and various HARDY BULBS.
On view morning of Sale, and Catalogues had.

Tuesday Next.
13,000 LILIUM AURATUM,
10,000 ,, LONGIFLORUM,
2,000 ,, SPECIOSUM RUBRUM and ALBUM.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on TUESDAY NEXT.
On view morning of Sale, and Catalogues had.

Hollamby's Nurseries, Groombridge,
Tunbridge Wells.
GREAT UNRESERVED SALE of valuable NURSERY STOCK recently transplanted and carefully prepared for removal.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, on TUESDAY and WEDNESDAY NEXT, October 14 and 15, at 12 o'Clock precisely each day, the valuable NURSERY STOCK, comprising enormous quantities of Coniferæ, ornamental, deciduous, and other Shrubs, Standard, Dwarf and Climbing Roses, 90,000 Larch and Scotch Firs, Ash, and Spanish Chestnuts, 20,000 Cupressus Lawsoniana and Thuia Lobbi, 20 000 Quick, 10,000 Rhododendrons, 8,000 Portugal and other Laurels, 3 000 Hardy Climbers, established in pots.
The Stock may be viewed any day (Sunday excepted), prior to the Sale. Catalogues may be had at the Nurseries; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, E.C.

Wednesday Next.
SPIRÆA JAPONICA, AZALEAS, and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, October 15, at half-past 11 o'Clock to the minute, 300 AZALEA INDICA, and other Plants from the Continent; 5000 SPIRÆA JAPONICA, in splendid condition; DUTCH BULBS; a fine selection of NARCISSUS from a private grower; HARDY BULBS, &c.
On view morning of Sale, and Catalogues had.

Brixton, S.W.
SALE of well-grown NURSERY STOCK and GREENHOUSE PLANTS, by order of Messrs. Ponsford & Son.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Loughborough Park Nursery, Brixton, S.W., on THURSDAY NEXT, October 16, at 12 o'Clock precisely, a portion of the healthy GENERAL NURSERY STOCK, comprising 7 00 Golden and Green Euonymus, 1200 Cupressus, Thuias, 2500 Aucubas, 500 extra-fine smooth-leaved Hollies, 2000 Laurels, 3500 oval-leaved Privet, 1000 standard and young Mulberries, large quantities of standard Forest and Ornamental Trees, thousands of Hardy Climbers, 5000 Ferns, 500 Ornamental Palms, and numerous other stock.
May be viewed prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.; and Leytonstone, E.

Friday Next, October 17.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 17, at half-past 12 o'Clock precisely, 250 lots of ESTABLISHED ORCHIDS, and about 100 established plants of CYPRIPEDIUM GODEFROYÆ from various growers; also an importation of 150 DENDROBIUM BIGIBBUM, just received in splendid condition, and from the locality whence came the dark varieties sold in flower in 1888, which the collector says is very scarce; together with an importation of BURMESE ORCHIDS. A thousand Established ALEXANDRAS, unflowered; also a quantity of ORCHIDS in Flower.
On view morning of Sale, and Catalogues had.

American Nurseries, Leytonstone.
Highly important four days unreserved Sale of beautifully-grown NURSERY STOCK; land required for Building.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, adjoining the Railway Station (where goods may be transmitted to any part of Great Britain), on MONDAY, October 20, and three following days, at 12 o'Clock punctually, the First Portion of the thriving and healthy young NURSERY STOCK, including about 50,000 Evergreen and Coniferæ Shrubs, in choice variety, 1 to 2 feet; 5000 fine Border Shrubs, 7000 named and ponticum Rhododendrons, 5000 Azaleas, 14,000 Ornamental and Forest Trees, 10,000 Standard and other Roses, a large quantity of selected Fruit Trees, Irish Ivies, and other hardy Climbers.
May be viewed any day (Sunday excepted) prior to Sale. Catalogues had on the Premises, and of the Auctioneers 67 and 68, Cheapside, E.C.; and Leytonstone, E.
The Second Sale of Outdoor NURSERY STOCK will take place on the Premises, on MONDAY, November 17, and following days.

Maresfield, Sussex.
IMPORTANT CLEARANCE SALE of valuable NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Piltdown Nurseries, Maresfield, near Uckfield, 2½ miles from Uckfield Station, L.B. & S.C.R., on TUESDAY, October 21, at 12 o'Clock to the minute, by order of Louisa, Lady Shelley, of Maresfield Park, the last portion of the well-grown NURSERY STOCK, including choice Border Shrubs, Thousands of Evergreens and Conifera Shrubs, 12,000 Standard and Dwarf Roses, finest varieties in cultivation; large quantities of Common Laurel, 1200 clean grown Apples, Gooseberries, and Currants, Thousands of Quick and Spanish Chestnuts, and various other stock.
May be viewed one week prior to the Sale. Catalogues had of Mr. BOOTH, on the Premises; of Mr. SANDFORD, the Estate Office, Maresfield; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Catford.
ABSOLUTE CLEARANCE SALE, without reserve. By order of the Shortlands and Nunhead Railway Co.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, forming part of the Nursery (lately in the occupation of Mr. John Laing), Southend Park, 15 minutes' from Catford and Lower Sydenham Stations (S.E.R.), on TUESDAY, October 21, at 12 o'Clock precisely, the well-grown NURSERY STOCK, comprising Evergreen and Coniferæ Shrubs, including several thousands of fine healthy Aucubas, Laurels, Privet, &c., several thousands of Ornamental and Forest Trees, also a choice variety of selected Fruit Trees, and Currants, and numerous other Stock.
May be viewed any day prior to the Sale. Catalogues had of the Engineer, at No. 2, Ravenscourt Park; of Messrs. VIGERS, 4, Frederick's Place, Old Jewry, E.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

East Dulwich.—Wednesday, October 22, 1890.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Seeger & Tropp, to SELL by AUCTION, on their Premises, at East Dulwich, on WEDNESDAY, October 22, commencing at half-past 12 o'Clock precisely, a large quantity of RARE and CHOICE WELL-GROWN HEALTHY ORCHIDS, many of which will be in bud or flower. Full List of Names will be found in the *Gardeners' Chronicle* for October 4.
The Sale will also include large importations of BRAZILIAN and MEXICAN ORCHIDS in best possible condition, and a great number of established plants in bud or flower.
Messrs. Seeger & Tropp's Orchid Nurseries are within 5 minutes' walk of East Dulwich Railway Station (L. B. and S. C. Ry.), and frequent trains run from London Bridge and Victoria. Plants will be on view the day previous and morning of Sale, and Catalogues obtained on the Premises; also of the Auctioneers, at their Central Sale Rooms, 67 and 68, Cheapside, E.C.

Cliffe, near Rochester.
Adjoining the Cliffe Railway Station, South Eastern Railway.
Without Reserve.
GREAT ANNUAL SALE of FRUIT TREES.
Important to Nurserymen, Market Gardeners, Fruit Farmers and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Perry Hill, Cliffe, near Rochester and Gravesend, adjoining the Cliffe Railway Station, S. E. Ry., on MONDAY, October 27, at 12 o'Clock precisely, by order of Mr. W. Horne, 85,000 FRUIT TREES, comprising 35,000 Standards Half-standard, and Maiden Apples, Pears, Plums, and Cherries; 30,000 Baldwin Black Currants, 5000 Raby Red Currants, 15,000 Gooseberries, 30,000 Raspberry Canes, 72,000 Strawberry plants, including 50,000 Laxton's Noble, 20,000 Sir Joseph Paxton, 2000 plants in 6-inch pots for forcing; 20,000 Connover's Colossal ASPARAGUS, one year; 6000 LIGUSTRUM OVALIFOLIUM, Evergreen Privet, 1 to 3 feet; 50,000 Myatt's Early Spring CABBAGE plants.
May be viewed one week prior to the Sale. Catalogues can be had of Mr. Horne, on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Canterbury.—Expiration of Lease.
Clearance Sale of the first portion of the Healthy and Thriving NURSERY STOCK, by order of Mr. J. Kennett.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, St. Martin's Nursery, Sturry, Canterbury, 1½ miles from Sturry Station, on WEDNESDAY, October 22, at 12 o'Clock sharp, without reserve, the first portion of the beautifully-grown NURSERY STOCK, in capital condition for removal, comprising 3000 Coniferæ and Border Shrubs, 3000 Fruit Trees, best named sorts; 46,000 Forest Trees, 3000 Gooseberries and Currants, and various other Stock. Mr. Kennett will undertake to carefully lift goods and convey to the Railway station at the mere cost of labour incurred.
May be viewed prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Northampton.
CLEARANCE SALE.—UNRESERVED SALE of NURSERY STOCK, by order of Messrs. Denton & Blunden.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Bedford Road Nurseries, Northampton, 20 minutes from London and North-Western Railway (Castle), and 10 minutes from Midland Railway Station, on THURSDAY, October 23, at 12 o'clock precisely, a portion of the well-grown NURSERY STOCK, comprising 2100 Limes, 4000 Wych Elms, 2400 Box, 15,750 Quick, 1800 Poplars, Maples and Sycamores, 3500 Pinus austriaca, 4500 Spruce Firs, 2400 Common Laurels, 4700 Gooseberries and Currants, Standard Pears, Irish and other Ivies, and other Stock.
May be viewed two weeks prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Every Thursday.—Dutch Bulbs.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY NEXT, and every THURSDAY throughout the season, at half-past 11 o'Clock A.M., large consignments of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland; also Roman HYACINTHS and Paper White NARCISSUS. Lotted to suit all buyers.
On view morning of Sale, and Catalogues had.
On WEDNESDAY and FRIDAY EVENINGS, at half-past 5 o'Clock, SALES of Choice CUT FLOWERS. Entries invited.
Nursery Stock Sales conducted and Valuations made.
Auction Rooms and Offices, 6, Phillips Street, Birmingham.

Dutch Bulbs.—Dutch Bulbs.
SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots to suit all buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving weekly from well-known farms in Holland.
On view mornings of Sale, and Catalogues had.

Wednesday Next.
300 fine plants of AZALEA INDICA, well set with buds, just received from Ghent.

MR. J. C. STEVENS will include the above in his SALE of BULBS by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY NEXT, October 15.
On view morning of Sale, and Catalogues had.

Thursday Next, October 16.
VALUABLE ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 16, valuable and well-grown ORCHIDS, the property of a Gentleman who is leaving his Residence. Amongst which will be found fine examples of the following CHOICE ORCHIDS:—

CATTLEYA SKINNERII ALBA.
,, EXONIENSIS.
Dendrobium Falconerii, very fine specimen.
Epidendrum brassavola, very fine specimen.
LÆLIA PURPURATA ALBA, fine plant.
EPIDENDRUM WALLISII, strong plant.
ODONTOGLOSSUM EXCELLENS.
,, Edwardii.
Oncidium Læmatochilum,
Aërides crassifolium.
Cattleya labiata Warnerii, fine specimen.
,, Bowringiana, fine specimen, in sheath.
,, Mendelii, fine specimen.
,, imperialis, fine specimen.
,, Dowiana, fine specimen.
,, Lawrenceana, fine specimen.
,, Trianæ virginalis, very fine plant.
Odontoglossum tripudians, fine specimen.
DENDROBUM SPLENDIDISSIMUM.
LÆLIA ANCEPS DAWSONII, splendid plant.
Lycaste Skinneri alba.
Miltonia Clowesii, grand specimen.
Aërides Dayana.
Vanda teres alba.
Cœlogyne pandurata.
,, cristata alba, very fine plant.
Pescatorea cerina, grand specimen.
Cymbidium Hookeriana.
Oncidium splendidum, very fine plant.
Odontoglossum Humeana.
Dendrochilum Cobbiana, grand specimen.
Odontoglossum vexillarium rubellum.
LÆLIA ELEGANS PRASIATA, grand specimen, and fine variety.
ONCIDIUM INCURVUM ALBUM.
Odontoglossum Uro-Skinnerii, fine specimen.
Oncidium macranthum, very fine plant.
Lycaste Barringtonæ.
And many choice hybrid Cypripediums and other valuable Orchids.

On view morning of Sale, and Catalogues had.

Thursday Next, October 16.
IMPORTANT SALE of IMPORTED and ESTABLISHED ORCHIDS.
Vanda Sanderiana
Cypripedium Rothschildianum.

MR. J. C. STEVENS has received instructions from Mr. F. Sander, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 16, at half-past 12 o'Clock precisely, the finest lot of VANDA SANDERIANA ever imported. The plants were brought home by the Collector, Mr. Micholitz, and under his personal care and attention they arrived in marvellous condition. Many large masses are amongst them, some with 8 growths, and all are green and healthy. Vanda Sanderiana is perhaps the finest Orchid yet discovered. It is very free-flowering, frequently bearing 8 to 10 flowers on a spike, and often producing 2 or more spikes. It is figured in *Reichenbachia*, vol. ii., p. 29.

Cypripedium Rothschildianum.
A very fine lot of this interesting and beautiful Cypripede; the plants are green and healthy, and are as good as established. This species is very scarce in its native habitat, and it is not likely that any more will be offered.

Cypripedium Haynoldianum.
In wonderful health and condition.

Aerides Lawrenceana.
A fine lot of this grand Aërides. This is, without doubt, the most beautiful of the genus. It produces spikes of a foot or more in length, and the individual flowers are very large.

Angræcum fastuosum.
Also a NEW ANGRÆCUM, not yet flowered in Europe. It is in the way of A. Ellisii, but far superior to that splendid species.

Aerides quinquevulnerum.
A fine healthy lot; many fine varieties will be found amongst them.

Cypripedium insigne.
These come from quite a new district, and will probably be productive of many startling novelties.

Cypripedium species.
Apparently in the way of Dayana, but coming from a district far from where Dayana is found.

Also Vanda teres, Cymbidium eburneum, Saccolabium guttatum, and other IMPORTED ORCHIDS. Also will be included some valuable ESTABLISHED ORCHIDS:—
The new SARCOPODIUM GODSEFFIANUM, which obtained First-class Certificate, Royal Horticultural Society.
CATTLEYA O'BRIENANA.
COCHLIODA VULCANICA.
CYPRIPEDIUM BOISSERIANUM.
,, KLOTZSCHIANUM.
DENDROBIUM NOBILE SANDERIANUM, fine plant.
LYCASTE LEUCANTHA.
PHALÆNOPSIS MICHOLITZII.
The new MASDEVALLIA HYBRIDA COURTAULDIANA.
RENANTHERA STORIEI.
SPATHOGLOTTIS AUREA.
VANDA NIEMANNII.
DENDROBIUM STATTERIANUM, fine plants, in full bloom.
,, FORMOSUM GIGANTEUM, fine plants, in full bloom.
,, UNDULATUM.
EPIDENDRUM CORDIFERUM (atropurpureum section).
,, MYRIANTHUM, very rare.
LÆLIA EYERMANIANA.
,, GOULDIANA.
SACCOLABIUM HENDERSONIANUM.
TRICHOPILIA SOBRALLÆFLORA, &c., &c., &c.
On view morning of Sale, and Catalogues had.

Thursday Next.
1500 fine Bulbs of LILIUM AURATUM, and 1400 L. LONGIFLORUM, just received direct from Japan in extra fine order.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 16.
On view morning of Sale, and Catalogues had.

Thursday Next.
CATTLEYA DOWIANA CHRYSOTOXA.

MR. J. C. STEVENS will include in his SALE by AUCTION, by order of Mr. F. Sander, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, October 16, a fine batch of established plants of CATTLEYA DOWIANA CHRYSOTOXA. This beautiful form was introduced by us from Columbia, and is as free growing and as free flowering as Dowiana is difficult and stubborn. C. Dowiana which comes from Costa Rica is very hard to grow, and very difficult to flower; in fact, after being imported for a few years, the plants produce smaller and smaller bulbs and no flowers, and gradually perish. It is quite different with the variety Chrysotoxa, which grows and flowers freely, coming from quite a different country, where it blooms twice a year, and whereas Dowiana is dull in colour of flower, Chrysotoxa is most brilliant; and again Dowiana hardly ever varies, while out of Chrysotoxa come such lovely forms as Massaiana, Statteriana Heines variety, Hardyana, and others have flowered.
On view morning of Sale, and Catalogues had.

Thursday, October 23.
The COLLECTION of ORCHIDS formed by the late J. W. Wooler Esq., of Almora Hall, Near Darlington.

MR. J. C. STEVENS has received instructions from the Executors of the late J. W. Wooler, Esq., to SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 23, at half-past 12 o'Clock precisely, his COLLECTION of ESTABLISHED ORCHIDS, comprising:—

Vanda Wightii.
Cypripedium Spicerianum.
,, Stonei.
Cattleya Gigas Sanderiana.
Cœlogyne cristata maxima.
Odontoglossum uro Skinneri.
,, polyxanthum. [flora.
Cattleya Mendelii Grandi-
Cattleya Mossiæ aurea
,, Massiana Hardyana, Heines var.
Cypripedium Druryii.
,, Insigne Maulei.
Odonto. Alexandræ giganteum
,, Blandum.
Oncidium Macranthum, &c.

On view morning of Sale, and Catalogues had.

Dorking, Surrey.
To Gentlemen, Nurserymen, Gardeners, and others.
ANNUAL SALE of SURPLUS STOCK, at the Dorking Nurseries, five minutes' walk from the Dorking Station, L. B. & S. C. Ry., and Box Hill Station, S. E. Ry.

MESSRS. WHITE AND SONS will SELL by AUCTION, on the Premises, as above, on TUESDAY and WEDNESDAY NEXT, October 14 and 15, at 12 o'Clock precisely, under instructions from Messrs. Ivery & Son, a great variety of thriving young NURSERY STOCK (in first-rate condition for transplanting, nearly all having been moved during the last two years), including Aucubas, 1 to 2 ft.; Box Hollies, Portugal Laurels, Golden and Common Yews, 2 to 4 ft.; Lauristinus, and other flowering Shrubs; Thujas of sorts, Abies Douglassi, Thujopsis, Retinosporas and Cupressus of sorts, 2 to 6 ft.; Pinus and Piceas in varieties, Spruce and other Firs of various heights, Cedars, Junipers, Araucarias &c., and thousands of Common Laurels, 2 to 5 ft. A choice lot of Plants in borders, comprising handsome specimens of most of the above, with standard Acer variegata, Thorns of sorts, Catalpas, Chestnuts, &c.; also a quantity of ornamental trees such as Planes, Limes, Birch, Poplars, &c., and Standard and Pyramid Apples and Pears, choice Chrysanthemums in pots, and large and small specimens of Camellias.

Catalogues may be obtained at the Inns and Hotels in the neighbourhood, at the place of Sale, and of the Auctioneers, Land Agents, and Valuers, High Street, Dorking, and on Fridays at Leatherhead.

Castle Nursery, Norwood Road, West Norwood, S.E.
FOURTEENTH ANNUAL SALE of choice Established ORCHIDS and STOVE and GREENHOUSE PLANTS.

MR. H. J. BROMLEY is instructed by Mr. H. James, to SELL by AUCTION, on the Premises, Castle Nursery, West Norwood, on WEDNESDAY NEXT, October 15, at 11 o'Clock precisely, a large and important collection of beautifully-grown ESTABLISHED ORCHIDS, clean healthy plants, including Odontoglossums and Dendrobiums, namely: Odontoglossum Pescatorei, Alexandræ, tripudians, constrictum, cordatum, macranthum in spike, Dendrobium nobile, roblius, Ainsworthii, and many others; specimen Cypripedium insigne, C. Lawrenceanum; Lælias and Cattleyas, comprising Lælia anceps, Cattleya Trianæ fine plants, Mossiæ, and Mendelii; Masdevallias, specimen Stove and Greenhouse plants in variety, consisting of Azaleas, Foliage Plants, Ferns, Chrysanthemums, Ivies, Passifloras, Vines, &c.

May be viewed two days prior to the Sale. Catalogues may be had on the premises, and of the Auctioneer at his offices, near the Railway Station, West Norwood, and at Forest Hill.

Wavertree Nurseries, near Liverpool.

MR. WM. HALSALL respectfully announces that he has been favoured with instructions from the executors of the late Messrs. S. & T. Davies, to SELL by AUCTION, at the above Nurseries, on WEDNESDAY and THURSDAY NEXT, October 15 and 16, at 12 o'Clock each day, the first portion of the General Stock of Hardy SHRUBS, IVIES, VIRGINIA CREEPERS, FRUIT and FOREST TREES, CAMELLIAS, AZALEAS, and other ORNAMENTAL PLANTS.

Catalogues may be had seven days prior to the Sale on application at the Nurseries; or to the Auctioneer, Church Street, Prescot.

Mile End Nurseries, near Stockport.
IMPORTANT UNRESERVED CLEARANCE SALE of exceedingly fine and well grown NURSERY STOCK, of most useful sorts and sizes, suitable for General Planting and the Trade, in grand condition for moving (the whole must positively be disposed of during the next two months), and which comprises 502,000 Thorn-quicks, two to six years' growth; 30,600 Ovalifolium Privet, 74,500 Forest and Ornamental Trees, Flowering Thorns, and Fruit Trees; 37,800 Rhododendrons, good bushes; 7,400 Aucubas, 1½ to 3 feet; 36,000 Evergreens, Fancy Hollies, Flowering Shrubs, Roses, and Conifers, such as Cupressus Lawsoniana, all sizes to 12 feet; English, Irish, and Golden Yews, Retinospora pisifera, R. obtusa, R. plumosa aurea, thousands of Pinus cembra, handsome Pyramidal Specimens of Green, Fancy, Gold, and Silver Hollies, from 3 feet to 9 feet; together with the General Working Plant of Cart Horses, Implements, &c.

MESSRS. ARTINGSTALL AND HIND respectfully notify the receipt of peremptory instructions from the Executors of the late Mr. Henry Carrington, to SELL by AUCTION, on OCTOBER 15, 16, and 17, commencing each day at 12 o'Clock, at the Mile End Nurseries, Manchester Road, near Stockport, and again on October 29 and following days until the whole is cleared, the valuable NURSERY STOCK. Situate ten minutes' walk from Davenport station and twenty minutes' walk from Stockport station. Trams between Hazel Grove and Stockport pass the place of Sale every half hour.

May be inspected any weekday from nine to five o'Clock. For Catalogues apply to the Auctioneers, 45, Princess Street, Manchester.

Thorne, near Doncaster.
ABSOLUTE CLEARANCE SALE.

MR. A. S. GLASIER has received instructions from the Executrix of the late Mr. Francis Casson, to SELL by AUCTION, on THURSDAY NEXT, October 16, at half-past 12 o'Clock precisely, without the slightest reserve, the WHOLE OF THE STOCK now growing at the Nursery, about three miles from Thorne Station. The stock consists mainly of seedling Rhododendrons from 1 to 6 feet in height (about 6000), a few named varieties of various sizes, and Ornamental Shrubs, of various kinds, mainly of large size.

Catalogues may be had ten days previous to date of sale, on application to JAMES SERVANT, of Thorne, who will show the lots by a pointment. The shrubs will be staked out in Lots suitable for Large and Small Purchasers, and are all well grown on peat soil.

Conveyances will meet the trains at Thorne Station on the morning of Sale.

FOR IMMEDIATE DISPOSAL, a FLORIST and SEED BUSINESS. Sole reason, ill health. Six-roomed House, six Greenhouses in good condition, well heated Pits and Frames. Stock in Trade and all Fixtures. Shop well fitted. Lease sixteen years. To be Sold at a great sacrifice. Genuine, and a good opening for a Fruit Business.
Apply to R. HOLLOWAY, Florist, 87, Dulwich Road, Herne Hill, S.E.

FOR SALE, a NURSERYMAN and FLORIST'S BUSINESS, six Greenhouses, Sheds, Frames, Dwelling House, &c.; about seventeen years' lease unexpired. Rent £52. Stock, Fixtures, and Goodwill must be sold at once, on account of bad health; no reasonable offer refused.
R. M., Grove Road Nursery, Woodford, Essex.

SEED and BULB TRADE.—An Old-established Firm are prepared to DISPOSE OF HALF SHARE in a growing SEED and BULB BUSINESS, now being carried on in connection with one of the largest Nurseries in the Kingdom, and situated in an Agricultural City in the West of England. Under proper management the existing business could be extensively developed, and prove most lucrative. Only those need apply who have had at least several years experience, and competent to undertake the Management of this Department, and whose character will bear strict investigation.
Apply, giving full particulars, to B. C., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

LAND for HORTICULTURISTS.
TO BE LET, on specially favourable long leases.
TO BE SOLD, on liberal system of deferred payments.
TO BE SOLD forthwith, 3-4ths price remaining at 4 per cent.
Excellent for soil, water, and railway.
Apply to Mr. F. J. CULLIS, F.G.S., Marling Park Estate, Hampton-on-Thames.

WELL ESTABLISHED FRUITERER'S and GREENGROCER'S BUSINESS, in centre of busy market, S.W., doing about £1,500 per year, all ready money, no Sunday trade, long lease at low rental. Price £150 for goodwill, lease, 2 vans, horse, trade utensils, &c.; part could remain.—Apply, FRUIT, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO LET, a compact FRUIT or PLANT GROWING NURSERY. About 500 feet run of Span-roof Houses, well heated, all nearly new, with House on premises, and about ½ acre of Land; 10 miles from Covent Garden.
Apply, Y. Z., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO LET, an Old-established NURSERY, near Leeds. Long Lease; good Trade Connection; Immediate Possession. Ill health cause of leaving.
Apply H. T., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Cornwall.
TO BE LET, by Tender, with immediate possession, for a term of fourteen years from Michaelmas last, all that Tenement known as PONJOU, situate in the Parish of Gulval, and within 2 miles of Penzance, in the occupation of Mr. R. H. Thomas and Mrs. R. D. Thomas, consisting of a substantial Dwelling-house and Outbuildings, with 8 a. 2 r. 25 p. of Orchards, and 33 a. 2 r. 28 p. of Land. There are 14 Span-roof Glasshouses, each 100 feet long, which are supplied with Hot-water Pipes, 2 Rochefort Boilers, each 15 feet long, and 2 Gold Medal Boilers, each 6 feet long. There is also 1 Glasshouse 40 feet long.
The conditions for Letting can be known on application to Mr. CHARLES READ, Public Buildings, Penzance, to whom Tenders should be sent on or before the 23rd inst.
Dated October 8, 1890.

DITCHAM AND CO., 49, Queen's Road Peckham, S.E., HORTICULTURAL and GENERAL BUILDERS. Rustic Summer-houses, and all kinds of Rustic Work. Designs to Order. Experienced men sent to any part.

Landscape Gardening.
MR. ARTHUR M. KETTLEWELL, LANDSCAPE GARDENER, having great experience in all matters pertaining to the artistic arrangement or re-arrangement of Grounds, IS READY TO UNDERTAKE the Designing and Laying out of Private or Public Gardens, Parks, Cemeteries, &c. Send for his Manual on the "Art of Landscape Gardening," excellently reviewed by nearly all the leading Gardening Papers, post-free, 7*d*.
Address, Titley House, Titley (R.S.O.), Herefordshire.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

NEW DESCRIPTIVE PRICED CATALOGUE
Post-free on application to
THE VINEYARD AND NURSERIES,
GARSTON, near LIVERPOOL.

50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high, 15*s*. to £10 per 100, free on rail.
J. J. CLARK, Goldstone Farm, Brighton.

LOVEL'S YORKSHIRE STRAWBERRIES.
Good plants of Thury, Paxton, President, Noble, and others, 100, 3*s*. 6*d*.; 500, 15*s*.; 1000, 25*s*.; all carriage paid. Sample dozen, 6*d*. Descriptive LIST free.
W. LOVEL AND SON, Strawberry Growers, Driffield.

RASPBERRY CANES.—250,000 of the famous Fastolf variety for Sale. Price 25*s*. per 1000. In lots of 20,000 at 20*s*. per 1000, free on rail, Wisbech.
MANAGER, Osborne House Farm, Wisbech.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE IS HEREBY GIVEN, that an addition will be made to the Pension List of this Institution in January next. All persons desirous of becoming Candidates will be required to send in their applications to the Committee on or before the 8th day of NOVEMBER NEXT, after which day they cannot be received. Preference will be given to those Applicants or their Widows who have been on the Books of the Institution as Subscribers for Fifteen clear Years. Should there not be enough of these Applicants to fill the Vacancies, then the cases of those applicants who have not subscribed so long or not at all will be considered. By order,

EDWD. R. CUTLER, Sec.

50, Parliament Street, London, S.W.—Oct. 7, 1890.

P.S.—Printed Forms, together with full information, can be obtained from the Secretary.

To Nurserymen, Builders, Local Boards, Vestries, and others who intend planting Trees and Shrubs this season.

ROBERT NEAL, The Nurseries, Trinity Road, Wandsworth, S.W., begs to offer an extensive stock of FOREST and ORNAMENTAL TREES, SHRUBS, ROSES, GRAPE VINES, FRUIT TREES, CLIMBING PLANTS, &c., which being grown in the neighbourhood of London, are especially suitable for town planting. Also a large stock of extra fine SEAKALE and RHUBARB for forcing, sample and price of Seakale sent by post if desired; descriptive CATALOGUE free.

EVERGREEN HEDGES.—THUJA LOBBII and broad-leaved PRIVET, 2 to 6 feet. Price LIST free.

WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

CŒLOGYNE CRISTATA.—The Chatsworth and other varieties, well grown, with bloom spikes, and very cheap.—Trustees late J. STEVENSON, Timperley, Cheshire.

GLOBE ARTICHOKES.—10,000 extra strong Plants, 32*s.* per 100, or 4*s.* 6*d.* per dozen; Cash with order.

J. E. HAMER, Station Nurseries, Whitchurch, Salop.

Dutch, Cape, and Exotic Bulbs.

ANT. ROOZEN AND SON'S CATALOGUE for 1890, containing details of their immense Collections of New, Rare, and Fine Bulbs and Plants (94 pages in English) is now ready, and will, as usual, be sent, post-free, on application to their Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.; or themselves direct at Overveen, near Haarlem, Holland.

N.B.—No connection with any other firm of the same name.

FOR SALE.—FOR SALE.

2 Half Specimen CROTONS Victoria,
1 Half Specimen CROTON Veitchii.
1 Fine Plant CYCAS REVOLUTA.
2 Large PALMS, Chamærops excelsa.

W. DANCE, The Gardens, Gosfield Hall, Halstead, Essex.

HARDY AZALEAS.—A selection of the most beautiful, many of which were raised in this Nursery, well furnished plants, covered with buds, from 1½ to 3 feet high.

AZALEA MOLLIS.—Very fine plants up to 2½ feet, well budded.

AZALEA OCCIDENTALIS × MOLLIS.—White, with lemon blotch—very beautiful, offered for the first time.

ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

FOR SALE, Twelve large STEPHANOTIS, clean and healthy. Can be bought cheap.—For particulars, apply to Mr. WHILLANS, Blenheim Gardens, Woodstock.

FRUIT TREES of all kinds, Wholesale and Retail. Price LIST free.

WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

MARIE LOUISE VIOLETS. Strong Plants, full of Buds, 16*s.* per 100.

EASTY, Prospect Nursery, Sudbury, Suffolk.

LAXTON'S "NOBLE" STRAWBERRY PLANTS, 30,000, at 25*s.* per 1000.

Apply, WM. CHAMBERS, Southfleet, Gravesend.

FERNS! FERNS!! FERNS!!!—Trade offer. Great Annual Sale of Surplus Stock; 100,000, in 25 sorts, Greenhouse and Stove, Pteris, Adiantums, Polypodiums, Cyrtomiums, Polystichums, &c.; 30,000 Pteris cretica cristata, fine bushy stuff, soon make 48 if potted at once; 10,000 Adiantum cuneatum, bushy stuff, all at 12*s.* per 100; store Ferns, variety, 6*s.* per 100, 50*s.* per 1000. Packed free, cash with order.

J. SMITH, The London Fern Nursery, Loughboro' Road, S.W.

SPECIAL OFFER of FERNS for CASH.—Extra strong, in thumbs, for immediate Potting, in the following varieties:—Pteris cretica, tremula, cretica cristata, alba lineata, hastata, serrulata, cristata compacta, and Doryopteris palmata. Also a fine lot in 48's, Pteris cretica, cretica cristata, serrulata cristata compacta, Polypodium, Dicksonia antarctica, and Aralia Sieboldi. Price for thumbs per 100 or 1000, and 48's per 100 on application. Inspection invited by

R. PENGELLY, Dyson's Lane, Upper Edmonton.

Rhododendrons cheaper than ever.

Over 30 Acres for Sale.

ISAAC MATTHEWS AND SON have to offer over 100,000 White, 100,000 Scarlet, in variety. Plants fit for immediate forcing. The above are all freely set with bloom buds, and are in the most healthy condition. We also have a very extensive stock of HYBRID and PONTACOMS from Seed, and can be had in all sizes, varying from 6 inches up to 4 feet, in any quantity. HOLLIES, AUCUBAS, YEWS, CONIFERS, THORN QUICK, Scotch SPRUCE, LARCH, ELM, ASH, ALDER, BIRCH, and all other General Nursery Stock in abundance. For Price LIST, &c., apply to—

ISAAC MATTHEWS AND SON, The Nurseries, Milton, Stoke-on-Trent. Our Nursery is very extensive, and the Stock good.

ESTABLISHED 1837.

MESSRS. THOMAS CRIPPS & SON

RESPECTFULLY invite the inspection of intending planters to their very extensive general Nursery Stock, which comprises every description of SPECIMEN TREES, CONIFERS, HARDY SHRUBS, ROSES, CLEMATIS, FRUIT TREES, &c.

The Nurseries are within half a mile of the South-Eastern Railway, and quarter of a mile from the London, Brighton, & South Coast Railway Stations.

TUNBRIDGE WELLS NURSERIES, KENT.

PRIMULA ROSEA, for Spring Bedding, in quantity. The finest of all the Himalayan Primulas. For Special Price per 100 or 1000, address—

F. E., Messrs. Street, 30, Cornhill, London, E.C.

BARR'S AUTUMN CATALOGUES, free on application.

BULBS OF FINEST QUALITY for all seasons, including many rare and beautiful Bulbs and Tubers.

DAFFODIL CATALOGUE, contains the only complete collection of these beautiful hardy spring flowers, with a List of cheap and showy sorts for large plantings.

PLANT CATALOGUE, describing the best Hardy Herbaceous Perennials for Borders, Rockwork, and Cutting.

BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

BULBS and LILIES. Compare—Compare—Compare. All English growth. Sound and true.

LILIUMS Chalcedonicum (Scarlet Turk Cap), large roots, 6*s.* per dozen; Yellow (Martagon), Turk Cap, 2*s.* 6*d.* per dozen; Purple (Martagon), Turk Cap, 1*s.* 6*d.* per dozen; candidum (White Madonna), 1*s.* 3*d.* per dozen; tigrinum, or Tiger Lily, 1*s.* 9*d.* per dozen; Croceum, Orange, fine, 2*s.* 6*d.* per dozen; Crown Imperials, Red and Yellow, 3*s.* per dozen; umbellatum, very fine, 3*s.* 6*d.* per dozen.

NARCISSI.—Pheasant Eye, 1*s.* 3*d.* per 100, 8*s.* per 1000; Daffodils, Double, 1*s.* 10*d.* per 100, 17*s.* 6*d.* per 1000; Daffodils, Single, 1*s.* 3*d.* per 100, 8*s.* per 1000; Golden Spur, 33*s.* per 100; Leedsi, 8*s.* per 100; Rugilobus, 8*s.* per 100; Orange Phœnix, 10*s.* per 100; Sir Watkin, 1*s.* 6*d.* each, £5 per 100; Maximus, 6*d.* each, 5*s.* per doz.; Horsfieldii, 8*d.* each, 7*s.* per dozen.

SNOWDROPS, ACONITES, BETHLEHEM STARS, Spanish IRIS (mixed), Blue SCILLAS, Lent LILIES, LILY OF THE VALLEY, CROCUSES, all 1*s.* 6*d.* per 100; NARCISSUS bifiorus, Incomparabilis, Double White and mixed sorts, 2*s.* per 100; TULIPS—Single or Double, English and Gold Cup IRISES, 4*s.* per 100; HYACINTHS, Single, Double, or mixed, 2*s.* per dozen; HEMEROCALLIS, Apricot or Yellow, 2*s.* 6*d.* per dozen; Christmas ROSES, 1*s.* 6*d.* each clump; HEPATICAS, 6*d.* each clump; &c., &c. We pay all carriage.

D'ALCORN AND CO., Spalding.

SPECIAL TRADE OFFERS. Terms nett cash. Packing free.

WHITE ROMAN HYACINTHS, 7*s.* per 100; 4½ to 6 inches, 65*s.* per 1000.

PAPER-WHITE NARCISSUS, 3*s.* 6*d.* per 100; 23*s.* per 1000.

DOUBLE ROMAN NARCISSUS, 3*s.* 6*d.* per 100; 23*s.* per 1000.

LILIUM HARRISII, 5 to 7 inches round, 4*s.* 6*d.* per dozen; 28*s.* per 100.

HYACINTHS, 1st size, named sorts, equal quantities of each colour, 17*s.* per 100; 160*s.* per 1000.

KENTIA FOSTERIANA, fine fresh seeds, 7*s.* per 100; 55*s.* per 1000. Just arrived in fine condition.

NOTE.—Special cut prices, for cash. Cases and packing free.

W. H. HUDSON (of Tottenham), Wholesale Importer of Bulbs, Plants, and Seeds, 199, High Road, Kilburn, London.

Address for telegrams, "AURATUMS, London."

N.B.—An importation of AFRICAN TUBEROSES expected shortly.

SCARLET CARNATION "Al. Alegatière."—A most handsome free flowering Tree Carnation, of sturdy compact habit, and bearing in great profusion well-formed brilliant scarlet flowers of great substance.

FINE STRONG PLANTS, covered with buds, in different stages, now ready to pot up for Winter-flowering in Greenhouse. Special cheap offer. 50*s.* per 100, 7*s.* 6*d.* per dozen.

Samples may be seen at 12, King Street.

BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

Fruit Trees a Specialty.

STRAWBERRIES.—One of the best collections in the Trade, including Noble and other new sorts, and the best for Garden or Market. Descriptive LIST free.

FRUIT TREES of all sorts. CATALOGUES free. Full Descriptive LIST, giving much valuable information, 6*d.*

JOHN WATKINS, Fruit Tree Grower, Pomona Farm Nurseries, Withington, Hereford.

Bulbs.

E. H. KRELAGE AND SON, the King's NURSERYMEN, SEEDSMEN and FLORISTS, Haarlem (Holland), have published their General CATALOGUES of Dutch and other Bulbs, which will be sent post-free on prepaid application to their address direct. These Catalogues are No. 446 (410, 430). Dutch Flower-roots, and 405 with Supplements 435 and 451, Miscellaneous Bulbous and Tuberous-rooted Plants.

BULBS—BULBS—BULBS.—Our stock of Dutch Bulbs is quite ready for inspection. Customers at liberty to come and select for themselves at the—

NEW HAARLEM BULB WAREHOUSES,
34, Mansell Street, Aldgate, City, London.
Proprietors—MICHAEL RAINS AND CO.
Reg. Tel. Address—"BIOTICUS, London." Established 1856.
CATALOGUE on application.
Named HYACINTHS, 2*s.* 6*d.* per doz. 1st size Bulbs of any sort.

BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1*s.*, 2*s.* 6*d.*, 5*s.* 6*d.*, and 10*s.* 6*d.* each, or 1 cwt. Bags, sealed, 13*s.* By all Seedsmen, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

BROWN FIBROUS PEAT for ORCHIDS, 31*s.* 6*d.* per Ton, or 12*6s.* per Truck of 4 tons; Bags, 5*s.* each; 10 Bags, 45*s.*

BROWN and BLACK FIBROUS PEAT, 25*s.* per Ton, or £5 per Truck of 4 Tons; Bags, 5*s.* each; 10 Bags, 45*s.*

PEAT, for forming Rhododendron, Bog, and American Plant Beds, 21*s.* per Ton, or £4 4*s.* per Truck of 4 tons.

THOMAS WALKER, Tekels, Camberley, Surrey.

THE "STOTT" HORTICULTURAL SPECIALTIES.

Patent DISTRIBUTOR,

Patent SPRAYER, Patent SYRINGE,

Insecticide KILLMRIGHT, Fertilizer FEEDMRIGHT.

PRICE LISTS AND TESTIMONIALS ON APPLICATION.

THE "STOTT" FERTILIZER AND INSECTICIDE DISTRIBUTOR CO. (Limited), BARTON HOUSE, MANCHESTER.

For Green and Black Fly, American Blight, Camellia Scale, Red Spider, Mealy Bug, Brown and White Scale, Worms, Wood Lice, &c.

"PICRENA," THE UNIVERSAL INSECTICIDE.

SAFE—ECONOMICAL—EFFECTUAL.

15, PRINCES STREET, EDINBURGH, *July* 15, 1887.—"Dear Sirs, I have thoroughly tested a sample of a new Insecticide which you were so good to send me. At the rate of 1 oz. to a gallon of water at a temperature of 95°, I find it kills Green Fly immediately. Double this strength, or 2 oz. to a gallon at 120°, seals the fate of Scale of all sorts in a few seconds; while 3 oz. to gallon at same temperature effectually dissolves Mealy Bug, and so far as I have yet observed, without the slightest injury to leaf or flower, and it is withal a most agreeable compound to work with. All our insect remedies are applied through common syringe, or garden engine, a much severer test of efficiency than when applied by hand-washing or spray.—I remain, dear sirs, yours truly. (Signed) A. MACKENZIE," of Messrs. Methven & Sons.

Victoria and Paradise Nurseries, Upper Holloway, London, *January* 7, 1888. "GENTLEMEN—I have given your Insecticide, 'Picrena,' a good trial in competition with many others. I am pleased to say that I have found it to be more effectual in destroying Mealy Bug and other insects than anything we have ever used. It ought to command a good sale. (Signed) B. S. WILLIAMS."

Sold by Chemists, Nurserymen, and Florists,

in Bottles at 1*s.* 6*d.*, 2*s.* 6*d.*, and 3*s.* 6*d.*; in Tins (1 and 2 gallons), 10*s.* 6*d.* and 20*s.* each; in quantities of 5 gallons and upwards, 9*s.* per gallon.

Prepared only by

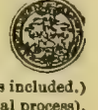
DUNCAN, FLOCKHART & CO., Chemists to the Queen, Edinburgh.

May be had from B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London; and from WILLIAM EDWARDS AND SON, 157, Queen Victoria Street, London.



GARDEN REQUISITES.

TWO PRIZE MEDALS.



Quality, THE BEST in the Market. (All sacks included.)

COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* 4*d.* each; 10 sacks, 12*s.* 6*d.*; 15 sacks, 17*s.* 6*d.*, 20 sacks, 20*s.*; 25 sacks, 24*s.*; 30 sacks, 27*s.*; 40 sacks, 35*s.*; 50 sacks, 40*s.*; Truck-load, loose, free on rail, 30*s.*

GENUINE ORCHID PEAT, 8*s.* 6*d.* per sack; 5 sacks, 40*s.*; BEST BROWN FIBROUS PEAT, 5*s.* per sack; 5 for 22*s.* 6*d.* BLACK FIBROUS PEAT, 4*s.* 6*d.* per sack; 5 for 20*s.* COARSE SILVER SAND, 1*s.* 6*d.* per bushel; 14*s.* half ton; 24*s.* per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1*s.* per bushel. Tobacco Paper, 1*s.* per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, Shell Shingle, Charcoal, Mushroom Spawn, and Russia Mats.

GARDEN NETTING, 2 yards wide, 1½*d.*, or 100 yards, 10*s.*; 4 yards wide, 3*d.*, or 100 yards, 20*s.* SCRIM CANVAS, 1 yard wide, 3*d.*, 2 yards, 6*d.* per yard. TIFFANY, 38 in. wide, in 20 yard pieces, 3*s.* 6*d.* per piece.

BAMBOO CANES, 3 feet 10 in., 3*s.* 6*d.*, 5*s.*, and 7*s.* per 100; extra long, 5*s.* per dozen.

DAHLIA STAKES, and all kinds of Flower Sticks, Cheapest in the Market. Marquees, Tents, Flags, and all kinds of Garden Tools and Sundries.

Terms strictly Cash with order. Price LIST on application from

CHUBB, ROUND & CO., West Ferry Road, Millwall London, E. *Bankers—Smith, Payne, & Smiths.*

THOMAS GREEN & SON, LIMITED,

SMITHFIELD IRONWORKS, LEEDS, AND SURREY WORKS, BLACKFRIARS ROAD, LONDON, S.E.,

HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered and Tubular

HOT-WATER BOILERS,

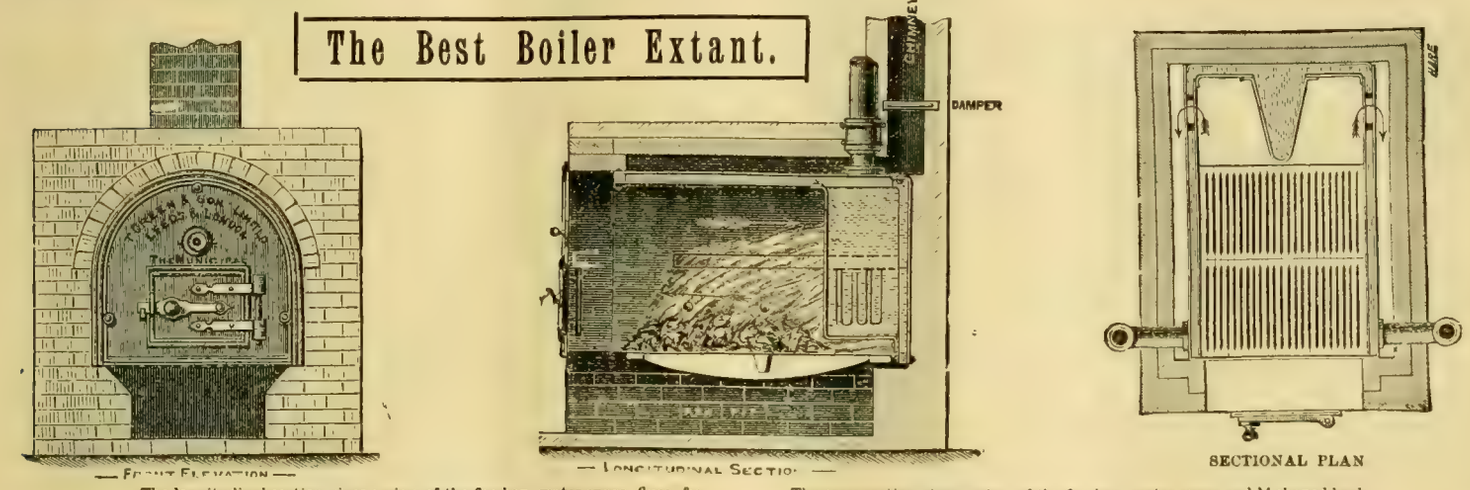
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The front elevation shows it set in *brickwork, which is necessary for this class of boiler.*

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MB 1	3 ft.	2 in.	long	by 2 ft.	0 in.	wide	by 2 ft.	0 in.	deep	Calculated to heat 4-in. piping as follows:—	1000 ft.	Price	£15	0	0
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MB 4	6	6	,,	by 3	0	,,	by 3	0	,,		4000	,,	60	0	0
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TESTIMONIALS.

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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 11, 1890.

RENEWING VINE BORDERS.

AT this season of the year it is often necessary to ask ourselves the question, "What shall we do to get greater vigour into our Grape Vines?" for it is not always advisable to dig up the Vines after, say, fifteen or twenty years of cropping, in order to plant young ones. True, one cannot, as a rule, get very large bunches from Vines which are old; but there is no doubt, I think, that Grapes from old Vines have the best flavour. Even in cases where Vines have not been well managed, they can be brought into a healthy state by winter pruning and judicious course of summer treatment. I was recently asked to advise as to the treatment to be pursued in a case where the Vines had much degenerated. It was a large and well-constructed vinery, built for the purpose of growing Grapes for market. The Vines were twenty years old, but the Grapes grown annually did not pay for the labour of attending to the Vines, and were sold for 6*d.* a pound in the London market. The reason for the Vines failing was apparent to me at a glance, as I saw them when the Grapes were ripe. The canes had been trained up too close together, and were at irregular distances, some of them being 18 inches apart, a few more than this, and others at lesser distances. By errors in management at the beginning, many of them had broken irregularly, and the laterals had not been well trained during the summer. In this case nothing needed to be done to the border, it consisting of good soil, which had been mulched with rotten manure. The system of pruning pursued was simply to cut off the young wood closely back to the spurs, and three or four laterals were allowed to grow where one only should have been. There was a poor crop on the badly-matured wood which had not been pruned to a

good bud, as is commonly the case. I pointed out what I thought were the errors in the management of the Vines; and this season the Grapes have sold for 1*s.* 6*d.* per pound, instead of 6*d.*, as before. Many persons suppose that if they can get a gardener to prune their Vines it will be all right, and that success or failure depends upon the way in which they have been pruned; but all good gardeners know that this is not so. The principal aim in Grape culture is the production of good, well-ripened shoots—a result arrived at by thinning out the laterals, in order that the leaves on those that are retained may have space enough in which to develop, and be freely exposed to direct sunlight. The rods should be 3 feet apart—not less, and the lateral shoots at about 18 inches apart on the rods; and when the laterals have grown to a length of two joints and leaves beyond the bunch, to pinch out their points, and when Vines are well grown, each lateral will show one to three bunches. It is essential that all but the best-formed and largest bunch be removed as soon as it is discernible; and when the bunches are large, one bunch to a lateral is too heavy a crop for most Vines to bear. Future management will consist in pinching out with finger and thumb all laterals that may push forth, and not to let them grow until a knife has to be used, and the prunings amount to barrow-loads.

A farmer called upon me recently, to say that his Grapes had not coloured well, and he thinking that they had not sun enough, had stripped off nearly half the leaves to let in the light upon them, and in doing this, the most important leaves near the base of the laterals were sacrificed. He was surprised when I told him that the Black Hamburgh Grape coloured best when it was shaded by its leaves, and that the leaves he had pulled off should have been carefully preserved on the Vines, as it was part of their function to aid in forming the buds for the following season's crop. I have often had to deal with Vines that have been almost ruined by bad management and badly-drained borders. The worst case I ever knew, was one in which the border had been turned into a shrubbery containing Aucubas. The leaves and the bunches of Grapes were badly mildewed, no care whatever having been taken for some years to keep them healthy. Other vineries were being erected, and, anxious to see what results would follow the renewal of the border, I cleared off all the shrubs, and carefully removed the soil to a depth of 2 feet 6 inches, preserving as many of the straggling bare roots as was possible—of feeding roots there were none. All the roots were, when re-planted, kept near to the surface, and plenty of fibrous loam of good quality, and enriched with rotten manure and crushed bones, was placed under and over them. Steps had been taken to make the drainage satisfactory. The Vine rods were thoroughly cleaned, and afterwards painted over with a mixture of sulphur, soft soap, and tobacco-water. The next season would, I expected, be devoted by the Vines to the formation of bearing wood only; but a few bunches appeared, and these were allowed to remain. The berries ripened well, because neither mildew nor red-spider were allowed to appear, or to remain if they did appear; and ample space was allowed for the development of the young wood, which ripened well. These Vines bore freely for many years afterwards, and the Grapes were of very fine flavour.

Practical gardeners are well aware of the tendency of Vine roots to penetrate the soil to great depths, especially when it is light and loose; and, in making use of manure, it should be of such a nature as will encourage the roots to remain near the surface, and bone-dust is as well adapted for this purpose as any, but it must be in the form of dust, not the refuse from lathes, where vegetable ivory is turned into fancy articles. I fear some of the so-called bone-dust is nothing more than dust from vegetable-ivory, a worthless, and perhaps dangerous, material. Did anyone ever observe Grapes to shank when the Vines had their roots close to the surface? I cannot call to mind one instance of their doing so; but I have found that they will shank when many of the roots are deep in the soil. When I lived at Loxford Hall, we had six vineries, built in various modes, and the soil being light, the roots would descend to a great depth, instead of forming a network of fibrous roots, as we wished, near to the surface. We had shanking of the berries after a time, and my plan to counteract this malady was to lift the roots of one vinery at a time, the inside border one season, and the outside one the next. In this way the Vines did not receive much of a check, and such as it was, they more than recovered with the aid of the mass of fibrous roots made during the following season. The above-mentioned experiments seem to prove that, when Vines get out of order, it is usually because their roots are allowed to get too deep in the soil; also that, from the very first year of planting, the young Vines should be so treated that their roots may be kept near the surface. They should be spread, when planted, at not more than 6 inches deep, and a light dressing of manure put over the border directly they are planted, so that a uniform temperature is maintained in the soil; and it is even more desirable to mulch when old Vines are replanted in new borders. *J. Douglas.*

New or Noteworthy Plants.

CYPRIPEDIUM × H. BALLANTINE, *n. hyb.**

This neat and elegant little hybrid was raised by Mr. Seden, in the establishment of Messrs. James Veitch & Sons, from Cypripedium purpuratum fertilised with the pollen of C. Fairieanum. As might be expected from the parentage, the plant is dwarf and compact, the leaves about intermediate in shape, bright green, with rather faint darker tesselations. The dorsal sepal is about intermediate in shape, rather inclining towards C. purpuratum, while the purple longitudinal lines extend almost to the base, as in that species, with the transverse reticulations of C. Fairieanum in addition. The petals also resemble those of the seed parent in shape, the dots of that species also extend nearer to the apex in the hybrid, gradually passing into lines on a light purplish ground. The lip also resembles that of the same species, though without the keel. The staminode is intermediate in shape, with the central tooth much shorter than in C. Fairieanum. It is a very promising hybrid, and will probably become as much appreciated as are others with blood of the last-named species in them. A plant was exhibited at the meeting of the Royal Horticultural Society on August 26 last. *R. A. Rolfe, Herbarium, Kew.*

BARBACENIA SQUAMATA.

This present plant (fig 81) is a Barbacenia, probably identical with B. squamata of Paxton, figured by Sir Wm. Hooker, in the *Botanical Magazine*, t. 4136. It has an elongated slender woody stem, rough with the persistent bases of fallen leaves; linear leaves of firm texture, minutely prickly on the edge and keel, and reddish-brown flowers. The drawing was made from a plant that flowered in the T house at Kew this summer. The species was discovered by William Lobb in 1841 on the Organ Mountains in South Brazil, and sent home by him to Messrs. Veitch, of Exeter. Barbacenia is nearly allied to Vellozia, but differs by having more or less of a tube above the ovary. About twenty species are known, all of which inhabit Tropical South America. The stamens vary in the genus, as in Vellozia, from six to eighteen. When they are isimerous there is a quadrate process at the base of the anther, and when they are numerous they are united in six bundles. Barbacenia and Vellozia are placed by Bentham and Hooker as a tribe of Amaryllideæ. Their affinity is closest with Hypoxis. *J. G. Baker, Herbarium, Kew.*

* *Cypripedium* × *H. Ballantine*, n. hyb.—Dorsal sepal broadly roundish-ovate, apiculate, 1¾ inch diameter, white, with about thirteen dark purple nerves, which pass into pale green at the extreme base, and a number of somewhat oblique connecting nervelets. Petals oblong, straight, divaricate, 2 inches long by ¾ inch broad, ciliate, pallid below, light purplish on margins and apical half, with eight rows of dark purple dots below, which pass into lines on upper half. Lip much like C. purpuratum in shape, light purple-brown in front, with darker nerves, pale greenish behind. Staminode tricuspidate, with roundish outline, the central tooth very short, the outer pair broadly falcate, acute, and much longer, palest whitish-green, with rather numerous dark green reticulations, shortly-hairy.

Manure for the Garden.

A capital little essay on the use of nitrate of soda for manure, and the best mode of its employment, has just issued from the able pen of Mr. Joseph Harris, M.S., of New York, of which we will give some extracts, specially written for gardeners.

Farmers and gardeners sometimes express surprise that agricultural chemists talk so much about nitrogen. When it is known, however, that of all the organic matter of plants and manures—in other words, all the matter which is driven off by burning—the only element of any direct value as plant-food is nitrogen, it will be readily seen that nitrogen is entitled to even greater attention than it at present receives.

Gardeners and fruit-growers fully recognise the value of stable and farmyard manure. In a ton of ordinary manure, containing 75 per cent. of water, there is 1275 lb. of organic matter and 225 lb. of ash. Except for its mechanical and indirect benefit to the soil, all the manurial value of this quantity of organic matter is due to the nitrogen which it contains. Is it any wonder, therefore, that we hear so much about nitrogen?

Nitrate of Soda for Onions.

An average crop of Onions removes from the soil about the same amount of nitrogen as an average crop of Turnips; but a crop of Onions will often sell for three, or four, or five times as much as the latter.

On Mr. Harris' farm, Onions are extensively grown, and he finds it necessary to make the land exceedingly rich, especially in nitrogen and phosphates. And of all manures for producing a large crop of Onions, nothing equals nitrate of soda.

When this manure was first used, 250 lb. per acre were sown early in the spring, before drilling-in the Onion seed, with 500 lb. per acre of superphosphate. As soon as the young plants appeared, it was the custom to go through them with the hoe to break the crust and kill the weeds, and then sow 250 lb. more of nitrate. In two or three weeks, another 250 lb. per acre was sown. The effects were found to be astonishing; no amount of ordinary manure that could be worked into the soil the first season would produce so great a growth. Latterly it has been thought quite as well to sow the nitrate broadcast all at once, about the time the seed is sown.

Why is it Found Necessary to Use so much Manure in the Garden?

Reference has been made to the great benefit derived from the use of nitrate of soda on Onions. There is a common opinion that the longer Onions are grown, year after year, on the same land, in market gardening, the better will be the crop. Enormous quantities of dung are applied every year. This supplies nitrogen, phosphoric acid, potash, and other ingredients of plant-food far in excess of the amount removed with the crop. And yet it is found necessary to furnish a heavy dressing of manure every year; and if this be not done the crop is poor and unprofitable.

The same is true of early Cabbages and early Cauliflowers. It is found necessary to use enormous quantities of manure for these crops—far in excess of the plant-food removed in the crop. Gardeners

who make a specialty of growing large areas of early Cabbage, find it almost impossible to make the land rich enough the first year; they find that the second or third crop, grown and manured every year on the same land, is better and earlier than the first crop.

An experienced American gardener recommends the application every year of 75 to 80 tons of stable-manure per acre for early Cabbage, and 10 tons per acre for late Cabbage. This 75 tons of manure contains 820 lb. of nitrogen, or as much nitrogen as 5100 lb. of commercial nitrate of soda probably contains.

Ten thousand early Cabbage per acre, weighing 5 lb. each is a good crop.

These Cabbage (25 tons per acre), contains 120 lb. of nitrogen, equal to 750 lb. of nitrate of soda. In other words, gardeners use nearly 7 lb. of nitrogen in the form of manure to get back 1 lb. of nitrogen in the crop.

It is now known that the nitrogen in the organic matters of the soil or manure is slowly converted into nitric acid by the growth of a minute organism, apparently a micro-coccus. This micro-coccus cannot grow if the soil be too cold, or too wet, or too dry, or in the absence of lime or an alkali.

As a general rule, there is no lack of lime in the



Fig. 81.—Barbacenia squamata: flowers reddish-brown. (see p. 408.)

soil, and the other conditions necessary for the conversion of the nitrogen into nitric acid, are warm weather, and a moist porous soil.

In the early spring the soil is too wet and too cold for the change to take place; we must wait for warm weather. But the gardener, who grows for sale, does not want to wait; he makes his profits largely from his "early" crops. Guided only by experience and tradition, he fills his land with manure, and even then he gets only a moderate crop the first year. He puts on 75 tons more manure the next year, and gets a better crop; and another 75 tons the next year, and gets a still better crop. The nitrogen of the soil, or of roots and plants, or dung, is retained in the soil in a comparatively inert condition. As it is slowly converted into nitric acid during warm weather, the plants take it up and grow rapidly. Unfortunately, however, if we have no plants growing in the autumn, and there is much nitric acid left unused in the soil, the rains of winter and early spring wash out a large proportion of it, and it sinks into the subsoil.

How, then, is the market gardener to get the nitric acid absolutely necessary for the growth of his early plants? He gets it, as before stated, from an excessive and continuous use of stable manure, and even then he fails to get it in sufficient quantity. One thousand pounds of nitrate of soda will furnish more nitrogen to the plants early in the spring than the gardener can get from 75 or 100 tons of well-rotted stable-manure. The stable manure will furnish nitric acid for his later crops; but for his early crops, the gardener who fails to use nitrate of soda, is said to be blind to his own interests.

The same remarks apply with equal force to Celery plants. For several years, the writer has grown over a million Celery plants a year. By the use of an enormous amount of rich manure, he was able to grow good outdoor Celery plants.

Eight years ago, he used nitrate of soda cautiously as a top-dressing, and the effect was most satisfactory. The next year, having more confidence, the nitrate was sown with the seed, another dressing was given after the plants came up, and twice afterwards an application was made during rain. Instead of finding it difficult as before to get the plants early enough for the Celery growers, who set them out, they were ready three weeks before the usual time of transplanting.

At the four applications, about 1600 lb. of nitrate of soda per acre was used, and this would probably furnish more nitric acid to the plants than they could get from 500 tons of stable-manure, provided it had been possible to have worked such a quantity into the soil. It was said that never were finer plants grown; and compared with the increased value of the plants, the cost of the nitrate is stated not to be worth taking into consideration.

The next year the same treatment afforded equally good results, though it was noticed that on part of the land where Celery plants had been grown the previous year, and followed afterwards by a crop of late Cucumbers for pickles, and the land again sown to Celery in the spring without manure, the plants were not so good as when dung, as well as nitrate, was used.

It is now the aim to dung the land in the autumn, and use nitrate of soda in the spring. In other words, nitrate of soda is not used as a substitute for dung, but as a highly prized and invaluable addition. *J. J. Willis, Harpenden.*

(To be continued.)

Plane Trees in London Thoroughfares.—The Metropolitan Public Gardens Association has offered £100 each to twenty metropolitan vestries and district boards, to be expended in planting Plane trees in suitable public thoroughfares in each district, on condition that the local authorities agree to maintain the trees when planted, replacing such as may die. The Association is willing to do the planting itself should any vestry so prefer. The chief requisites for success are thoroughfares of sufficient width, say not less than 40 feet, plenty of good soil to each tree, and the avoidance of gas-mains as far as possible. The object of the Association in making the present offer is to encourage local authorities to take up the work for themselves.

DISEASE OF ORCHIDS.

Cladosporium orchidearum.—During the last two or three years, a new disease has appeared upon the foliage and pseudobulbs of Orchids, caused by the attack of a fungus closely allied to the Cladosporium of Tomatos, and named C. orchidearum. It attacks various genera of Orchids, as Catasetum, Calanthe, and Phalænopsis, and in bad cases causes the host plants to put on an extremely bad and semi-rotten appearance; in fact, the new comer is much more destructive than any other fungus occurring upon members of the Orchid family.

The Cladosporium of Orchids at first grows entirely within the substance of the leaf, and at length emerges in tufts through the stomata, or organs of transpiration (A, fig. 82). In later stages of growth, the fungus becomes superficial. The fruiting tufts or threads of the Orchid Cladosporium are sparingly branched, and carry pale olivaceous, usually septate spores, as shown enlarged 400 diameters at B B, fig. 82. It is remarkable how destructive the members of the genus Cladosporium have become in Britain during the last few years; the best known instance is, perhaps, the attack made upon the Tomato, but the Carnation, the Ornithogalum, and other plants, have in some positions been extensively destroyed. I have visited greenhouses this summer where nearly every plant was infested with a Cladosporium; and the attacks have not been confined to the plants themselves, for the wooden shelves and window-frames were sometimes thickly covered with a healthy Cladosporium. In one instance a greenhouse had been newly painted inside; the paint killed several of the plants, which were afterwards placed in the greenhouse, but the paint itself, instead of remaining stone colour, as it was when first laid on, soon became of a dull olive tint, from a profuse growth of Cladosporium upon its surface. How many of the species of Cladosporium are distinct, it is difficult to say. My own impression is, that not more than one so-called species in twenty of micro-fungi is really distinct. One species seems to produce many varieties, and each variety appears to be made a variety by mere temporary surrounding circumstances.

The illustration, fig. 82, is drawn from Nature, from examples of Phalænopsis sent during the last week or two to the *Gardeners' Chronicle* office for examination. The upper part of the engraving shows the under-surface of a fragment of leaf with the disease blotches, natural size. The lower part of engraving is an illustration of a fragment of leaf membrane with the fungus growing from the stomata, enlarged 400 diameters. *Worthington G. Smith, Dunstable.*

STREPTOCARPUS HYBRIDS.

The hybrid Streptocarpi raised at Kew during the last five years, are likely to prove the forerunners of a useful race of garden plants. It may, therefore, be worth while to set down now the exact parentage of these hybrids, with their progeny up to the present time.

In 1884, seeds of a new species of Streptocarpus were received at Kew from Mr. E. G. Dunn, of Cape Town, who had obtained them from the Transvaal. The plants raised from them flowered in 1886, and were named by Sir Joseph Hooker as S. Dunnii. In the same year a figure of this species was published in the *Botanical Magazine*, t. 6903, where it is called "a magnificent plant, quite the monarch of its beautiful genus." It is characterised by an enormous leaf, which sprawls along the ground, and develops from its short petiole sheaf-like panicles of flowers. These are as large as a medium-sized Pentstemon, and coloured bright brick-red. The colour was quite new to the genus, all the other known species having bluish or white flowers. Here, then, was promising material to work upon, with a view to obtaining a race of free-flowering, ornamental Streptocarpus. We, therefore, crossed it with S. Rexii and S. parviflorus.

S. Rexii is an old garden plant, which is often known as S. biflorus and S. floribundus. It was introduced to Kew from the Cape by Bowie about sixty years ago, who found it on the estate of a Mr. George Rex, after whom it was named by Lindley, and figured in *Bot. Reg.*, t. 1173. In the *Bot. Mag.*, t. 3005, it is figured as Didymocarpus Rexii. It is one of the easiest of plants to grow; it flowers abundantly, and it requires no more heat than is afforded by an ordinary greenhouse.

S. parviflora was introduced by Mr. Lynch, Curator of the Cambridge Botanical Gardens, and flowered in June, 1882, when it was figured in the *Bot. Mag.* It has tufted leaves similar to S. Rexii, and many-flowered scapes, the flowers rather small, white, with a few faint streaks of yellow and purple on the lower segments of the corolla. The name of this plant has since been altered to S. lutea.

By crossing S. Dunnii with S. Rexii, the hybrid named Kewensis was obtained. It has two or three large green leaves and numerous six to eight-flowered panicles of Foxglove-like flowers, fully 2 inches long by 1½ inch in diameter, and coloured bright mauve-purple, with streaks of a darker shade in the throat. It is figured in the *Gardeners' Chronicle* for 1887, ii., p. 215.

S. Watsoni was the result of crossing S. Dunnii with S. parviflora. It has slightly narrower leaves than S. kewensis, and taller panicles crowded with flowers, which are 1½ inch long, and coloured a bright rosy-crimson, with white and brownish-purple streaks in the throat. This is the most ornamental of all Streptocarpi. When well treated, each plant will bear a hundred or more flowers in a season, and it is not unusual for forty or fifty flowers to be open at one time. It is perfectly at home in an ordinary conservatory, as is shown by its behaviour in the winter garden at Kew, where it is planted as a fringe to the Rhododendron beds, and has been an attraction all the summer. It is perennial, and does not appear to wear out as do most of the Streptocarpi.

In 1887 these two hybrids were crossed again with their parents, and with each other; in fact, all the combinations possible were tried. The result was, a host of seedlings of considerable variety, both in the size, colour, and form of the flowers, many of them being decidedly pretty. They attracted a good deal of attention in the Succulent-house at Kew, and amongst their admirers were the Messrs. Veitch who applied for, and obtained a selection of, some twenty of the most distinct, including S. Watsoni and S. kewensis. These have been crossed again by the clever Mr. Heal, and their progeny were what were noted in the *Gardeners' Chronicle* last week (p. 387). I saw the seedlings in Messrs. Veitch's nursery a few days ago, and noted some most delightful kinds amongst them.

S. Watsoni is remarkable in being, so far as I know, invariably sterile when fertilised with its own pollen. It is also the only one with red flowers. It is easily propagated from leaf-cuttings, and it can at any time be obtained by crossing S. Dunnii with S. parviflora. The seedlings show a little variety in the shade of colour and size of the flowers, otherwise they are all alike.

In the unnamed crosses raised both at Kew and by Messrs. Veitch, the colours vary from pure white to white with crimson streaks, or black-purple blotches; others are of a uniform rich purple; others are purple with white and brown streaks, whilst a few are of almost clear blue. The leaves of many of the latest seedlings are more of the character of S. Rexii, and therefore more convenient for pot-culture than the large-leaved, somewhat one-sided, earlier seedlings. This is the only drawback to the pot-culture of S. Dunnii, S. kewensis, and S. Watsoni.

Last year we had plants in flower of S. Saundersii. This species was introduced from Natal in 1860, and figured in *Bot. Mag.*, t. 5251. It has an enormous leaf, as large as that of S. Dunnii, but broader, and resting quite flat upon the ground. It produces numerous erect many-flowered panicles, fully 18 inches high, the flowers narrow-tubed, rather small,

and coloured pale purplish-blue. Some of the plants grown last year at Kew had each a leaf of 18 inches across, and 2½ feet long. This species thrives in a greenhouse, and seeds freely under cultivation. A number of crosses were made last year between it and the species, hybrids and crosses, above named. Their progeny flowered this year, and many of them show considerable promise. They all, however, have the ungainly foliage of the big-leaved kinds. A bunch of the flowers from them was shown a few weeks ago at one of the meetings of the Royal Horticultural Society.

So far we have failed to cross S. polyanthus with any other species or variety, and have not got any results from attempts made to cross the caulescent species such as S. Kirkii, with the acaulescent or Rexii type. The name S. kewensis is proposed for the whole race of hybrids and seedlings which have originated at Kew, thereby following the lead of M. Lemoine in the naming of his Gladioli hybrids, Nanceanus, &c. There are already numerous unnamed seedlings of Streptocarpus which are pretty enough and distinct enough to deserve a name, but it ought to be an English one, such as for instance S. kewensis, "Blue King," "Purity," &c.

Before the introduction of S. Dunnii, several hybrids were raised at Kew by crossing S. Rexii with S. parviflora. One of these was named S. Rexii var. multiflorus, from its being like the old S. Rexii in every character except its four or six-flowered scapes. A second was called White Pet, and had white flowers intermediate in size and form between the two parents; another had flowers as large as S. Rexii, but pure white; this was named S. Rexii alba, and was recently shown at the Drill Hall. *W. Watson, Kew.*

Plant Notes.

LASIANDRA MACRANTHA.

This beautiful plant is not often met with in private gardens, and, where its culture is attempted, the plant does not always succeed. The finest specimen that I have seen is growing at Hyams, near Bagshot, where it is trained on the back wall of a lean-to house, having a northern aspect, and which is devoted to Ferns and cool Orchids. It is planted out in a mixture of peat, loam, and sand, and grows and flowers very freely. Mr. Page, the gardener, only keeps a temperature of 45° to 50° in winter in this house, and this appears to suit the plant exactly, but it is much cooler than most people keep it. The house and its numerous occupants are all scrupulously clean and tidy, and very little sunshine ever reaches it.

Solanum jasminoides.

This plant is often seen growing in greenhouses and conservatories, where it flowers well as a rule, and its white flowers are useful for cutting. In warm positions, outdoors, it is one of the prettiest climbers we have. A plant of it is growing at Hyams, near Bagshot, on a brick wall, looking very pretty indeed; there is also a nice plant on the south front of the house at Gunners, an adjoining estate. The soil is sandy, warm, and well drained, and this will partly account for the success that there attends its cultivation. *W. H. Divers, Ketton Hall, Stamford.*

Schubertia grandiflora.

This is one of the best climbing plants introduced of recent years, and although it is often grown as a stove plant, it is quite as good, if not better, when grown in the greenhouse. It is evidently nearly related to the old Physianthus albens, but is certainly a much finer plant, the flowers being more than twice as large as those, with greater substance in them, and also possessing longer stalks, which make it more useful in a cut state; indeed, with the exception of being short-tubed, the flower is much like in form a gigantic bloom of Stephanotis. It is closely related to that plant, as well as to Physianthus; but botanists tell us that both Physianthus and Schubertia should be included in the genus Araujia. The plant is of easy culture, and flowers freely, even when young; indeed, plants struck from cuttings put in now, and kept in a growing temperature throughout the winter will, if planted out in spring, flower freely towards the end of summer and autumn in the greenhouse. It should have as much light and air as possible, and, if it can be kept clean without syringing, all the better. The plant has a rather brownish appearance, owing to the rusty-coloured hairs with which it is clothed. *F. R.*

ACCLIMATISATION IN INDIA.

I have been reading with some interest the correspondence that has lately been going on in your columns on the above-named subject, and as I have been extensively engaged in the cultivation and acclimatisation of culinary vegetables in Northern India, during the past eleven years, I venture to send you a record of my experience with vegetables in particular, and also some notes in general on various changes observed in other crops and plants introduced here from more temperate climes, for the information of those of your readers who are interested in the subject.



Fig. 82.—Under side of orchid leaf attacked by Cladosporium orchidearum.

The vegetable farm attached to this garden contains an area of 53 acres, most of which is cropped twice a year with vegetables. In summer, large breadths of ground are occupied by various species and varieties of Cucurbitaceæ, Egg Plant, table varieties of Indian Corn, &c., all grown for the production of seed for the supply of the regimental gardens of British troops, and for sale to the general public. In autumn, these summer crops are followed by the European varieties of vegetables, not grown in small plots, but each in blocks of from 1 to 5 acres, and all primarily grown with the same object as in the case of the summer varieties. All the European vegetables that are true annuals acclimatise more or less readily, but those which are biennials or perennials, with some few exceptions, do not adapt themselves so readily to our climate. As various changes occur during acclimatisation, I shall endeavour to describe these from the date of the introduction of the seed from Europe, but in order to enable your readers to clearly comprehend my remarks, I shall occasionally enter into details which seem somewhat beside the subject.

In India, European vegetables, with few exceptions, have to be grown during the cold season, and are usually sown in October; but early sowings of certain varieties may be made as early as August with imported seeds, and even earlier still with acclimatised seeds; main sowings are, however, made in October, and late or successional sowings in November and December. Early sowings are liable to come to grief owing to excessive heat and moisture; but when successful, their produce comes into season in November and December. October or main sowings, except in the case of a few quick-growing sorts, such as Mustard, Cress, and Radish, usually come into season late in December, or during January, but are in a state of the greatest perfection as table vegetables about the middle of February. Late sowings come in a little behind the main sowings; but after the middle of March, owing to the advent of our dry and hot summer, everything rapidly dies off, or attempts to flower, and by the middle of April few kinds of European vegetables are fit for the table. Various Cucurbitaceæ, such as Cucumbers, Melons, Pumpkins, Vegetable Marrows, &c., sown in January or February, then begin to come into season, and take the place of the European kinds going out. The above is, therefore, a sketch of our seasons, and in order to produce acclimatised seeds from the European kinds, we have thus to sow, grow the plants, and ripen the seeds within the period between the months of August and April, and naturally, those varieties that are true annuals, do this most readily within the limits of the time named.

I quite agree with all Dr. Bonavia has written on the Cauliflower and Lettuce, and in noticing these to begin with, I shall be going over some of the same ground as that gone over by him. Imported seeds of Cauliflower are not a success here if sown before the middle of August. They may germinate if sown earlier, but the plants generally damp off, owing to the heat and moisture then prevalent. Acclimatised seeds can, however, be sown as early as June, and should not be sown later than in the early part of September, for reasons I shall give further on. Plants raised from imported seeds sown in August and September, come into season in January and February, and shoot into flower in March. Later sowings come into season behind the main sowings as is natural, but they do not ripen seeds. In the case of early sowings of imported seeds of Cauliflower, the best heads often do not flower, in fact, more often than not, the weeds of the crop only flower and ripen seeds. We thus secure a bad strain to begin with, but we improve it by continuous and careful selection, and by the time we have grown the variety for some four or five years, we have improved it up to something near to its original standard. During the course of selection, or acclimatisation as it is more conveniently termed, a marked change in character occurs, which I will now proceed to describe. When it was first received from Europe, I have already shown it could not be sown with successful results before the middle of August, and successional sowings could be made in September, October, and November with good results; but after it has been grown in this country for a number of years, or acclimatised, we must begin to sow it in June, July, August, and not later than early in September. If we attempt sowing this acclimatised stock after the middle of September, or during October and November, it shoots up at once into flower, without even forming the rudiments

of what is popularly understood as a Cauliflower head, and thus behaves for all the world more like a Mustard than a Cauliflower crop. In acclimatising it, we have thus bred it to flower at a certain time, and in order to make it fulfil all the conditions required during its life-history, we have to sow it at a much earlier date than was necessary when we first received it from Europe.

Lettuce, being a true annual, does not behave in quite the same fashion as Cauliflower. It does not heart well from either imported or acclimatised stock if sown before the weather cools down; therefore, both classes of seed are usually sown together, and come into and go out of season together—thus, in the case of it, little or no change occurs by transference to a tropical climate. The Asparagus lives all the year round, and yields seed. The heads, however, are thin, and wanting in flavour, whether raised from imported or acclimatised seeds. It adapts itself to live and reproduce itself in our climate, but as a table vegetable it is a failure.

The Globe Artichoke also lives all the year round, and produces seed. Plants raised from acclimatised seed flower more freely than those raised from imported stock, but the individual heads of the former are smaller than those of the latter, and selection does not seem to have the effect of increasing their size up to their original standard. The Jerusalem Artichoke also lives all the year round, and is raised from tubers in the same manner as at home. The sets are planted out in March and April, but the plants grow very slowly during the summer, in spite of the forcing climate, and are not ready for the table until the latter end of October. If they are allowed to remain in the ground and dug up as required, they continue in a fit state for use until they begin to sprout in March; but if they are lifted and stored when ready in October, they shrivel, and are unfit for use early in January. Our tubers are not quite so large as home-grown ones, but the flavour is much the same; therefore, it may be said that we can grow this vegetable in a tropical climate as easily, and nearly as well, as it can be grown in a temperate climate. This vegetable, although long cultivated in Europe, and undoubtedly has reached India through Europe, is said to have come originally from Brazil, and in its nature may therefore be more tropical than temperate, and which fact may partly explain why it succeeds so well in our climate.

Beet is difficult to acclimatise, but this has been done. I have never succeeded in making a Beet raised from imported seed to flower, but some of my predecessors must have accomplished the feat, as on my arrival here more than eleven years ago, I found a badly coloured acclimatised variety growing with other acclimatised vegetables. This variety, after eleven years of steady and careful selection, is now of a good dark colour, and the only difference between it and imported varieties of the same class, is, that it may be sown six weeks earlier, or while the weather is still hot and damp from the effects of the monsoon, and that it shoots into flower in March when the weather begins to get warm; whilst plants raised from imported seeds remain stationary until they rot in the ground, or are dried up by the scorching heat of summer. Our acclimatised Beet is now to all intents and purposes an annual, but it must have originated from the European biennial.

The long podded varieties of Beans acclimatise readily, but the Broad Windsor and its varieties do not adapt themselves to our climate. I have raised varieties of the latter from seeds of our own saving for a season or two, but the produce instead of increasing, as in the case of the Long Pods, kept decreasing until there was none, and then of course they died out. These two classes of Beans, although closely related, take opposite directions in our climate, and from no ascertainable cause. Dwarf French and Runner Beans pod freely and ripen seeds on the hills in India, but both classes do little or no good on the plains, not even when the seed sown has been acclimatised to the hills. I have already noticed the Cauliflower, but will now take up all the other members of the Cabbage tribe. Broccoli is utterly worthless as a vegetable in India; I have tried it over and over again, with seeds imported from England, France, Germany, Italy, and America, but in no single instance have I ever got a plant to form a sound, or anything approaching to a sound head. Instead of the usual looked-for head, it produces an enormous tuft of green leaves, occasionally containing the rudiments of a head in the centre, but even when this is present it is mainly made up of smaller green leaves. I have also occasionally observed it to produce a few flowers, but have never seen these followed by seed. Broccoli thus refuses to adapt itself to India, and is, therefore, useless to us. *W. Gollan, Botanic Gardens, Saharanpur, N. W. P.*

(To be continued.)

Orchid Notes and Gleanings.

MACODES PETOLA, *Lindl.*

Few Orchids are remarkable for the beauty of their foliage; some of them, however, make an exception to the rule, and are so, even in a very high degree. We only want to mention the well-known Anœctochilus and the above named species, with its dark green velvety leaves with golden netted veins. Generally they are considered difficult to grow, and therefore rarely met with, though we think that many have no success by bestowing too much care on them. At Mr. Low's, at Clapton, we saw a nice lot grown in an ordinary Orchid stove, wholly uncovered and in very good health. Macodes petola, however, we never saw in a better state than this spring at Mr. R. Wind's, a well-known nurseryman at Zwolle, Holland. He had a quite peculiar way of cultivating them, but he told me that he had never the slightest difficulty of growing plants up to the same degree of perfection as I saw them. The plants thrive in a compost of sphagnum moss, leaf mould, and cow dung, and to the last-named substance he attributes his great degree of success. He places them in a sand bed with a bell-glass over them; this is never lifted up, if not wanted, and although never wiped out, the leaves touching the glass, exhibited not the slightest tendency of rotting. Many, of course, would prefer to clean the glass inside, if it was only for cleanness sake, or that the plants might be better seen. At any rate, stronger plants than these are rarely to be met with. *H. J. Goemans, Paris.*

Odontoglossum grande.

This fine species well repays attention, as the accompanying photograph of a plant will show [the photograph sent by our correspondent showed an exceedingly well-bloomed specimen in a pot. Ed.] The plant in question was purchased eight years ago, and was then in a 48-pot, and had but one break, and now it has thirteen spikes and forty-five flowers. The plant has, until the last few months, been entirely managed by Miss Gilbey, the housekeeper to H. Michelson, Esq., J.P., Stamford, and various other Orchids grown there, show by their health and vigour that they are well cared for; all are growing in a cool house where little artificial heat is used, and where cleanliness is strictly the order of the day. *E. Wilson, Uffington, Stamford.*

New Bedding Lobelia, Maid of Moray.—Under this name, Messrs. Laird & Sons, of Edinburgh, have brought one which, in this class of Lobelias, has a favourable future before it. It is of the "compacta" type of bedding Lobelias, but is distinct from any other of its class with which I am acquainted. In habit it is very compact, yet free, not so closely cushioned as most others, the foliage being also a little larger than is generally seen in this class. It is an early and free-bloomer. The flowers are large, having a broad pure white centre, somewhat like the old and much admired L. speciosa Paxtonii of twenty or more years ago, but with a much deeper blue margin than that variety. It is altogether a beautiful variety, which will prove an acquisition either for bedding-out or for culture in pots for the summer decoration of the greenhouse. *S.*

Plants and Their Culture.

The Greenhouse.—The removal of all kinds of tender plants into their winter quarters should, by this date, have been attended to. The early blooming Ericas and Epacrises showing bloom must not suffer for want of water, or the flowers will not open, and if any doubt exists as to the state of the soil, a thorough soaking in a pail or tank should be given them, if, after due examination, it is found to be dry. Mildew is troublesome about this time, and a sharp watch must be kept for it, dusting the foliage with sulphur as soon as it is noticed. Bouvardias that were grown in the open air should be potted or planted in a pit. Indian Azaleas will be best if placed in a cool house, the earliest plants being set apart for forcing purposes. Plants that have been forced early in previous years are always the best for this kind of work, forcing, as they do, readily. The varieties of A. mollis should now be selected for early forcing, lifting and potting them up as required. All other kinds of early-forcing plants should be attended to, potting and plunging them in the open air. Bulbs for succession should now be potted; indeed, the greater portion of them should be potted now, it being preferable to retarding them in the spring. Primulas, if in damp frames, will require a drier place. Show and fancy Pelargoniums should be potted, and placed near the light in a dry house for a time, and if they are placed in a lean-to house, they should be turned round once a week. Plenty of air and light are what these plants require through the winter months. Calceolarias in small pots should get a shift if the pots are filling with roots. A place in a cool frame, or house near the glass, and where they will be just free from frost, is all that Calceolarias require.

Carnations which are placed in their winter quarters should get abundance of air, and a place close to the glass, dusting the grass with flowers-of-sulphur if the least sign of mildew be observed. The new Winter Cheer Carnation is one of the most robust for pot work, and the calyx does not split like most of the other varieties. It will not be safe to leave the Chrysanthemums out-of-doors after this date, but before putting them under glass, examine them for mildew, using the sulphur dredger where necessary, and taking care that the plants are not suffering for want of water. No time should be lost in planting the Violet frames. The useful Schizostylis coccinea will now furnish a quantity of bloom-spikes if placed in a pit with a few degrees of warmth. Begonias of the John Heal and Adonis type will now make a nice show, if the plants have been grown in cold frames, and a few degrees higher temperature than that of the greenhouse just suits these and the other early-blooming Begonias at this season. Doses of weak liquid manure greatly assist these plants. The early varieties of Liliums should be potted up without delay when received from the nursery, as it greatly weakens them to be kept long out of the soil. The L. longiflorum section come in serviceable for spring decorations, if they are potted up early. Many of the old bulbs forced last year will now be making a start; these should be repotted without delay, and placed in a cold frame with the newer bulbs, and sparingly watered. *G. Wythes, Syon House, Brentford.*

The Orchid Houses.

The Cattleya-house.—As the different species continue to finish up their growths, the plants should receive less and less water, but no shrivelling of the pseudo-bulbs should be allowed to occur. Cattleya Skinnerii should be placed in the warmest part of the house. As a rule, these plants do better grown at least 5° warmer the whole year than the generality of Cattleyas. These plants have only as yet half finished their growth, and they should receive warmth and moisture for some time longer. Cattleya gigas, C. Sanderiana, and C. Dowiana aurea, should be placed in a very light, airy place, and kept on the dry side. These plants like heat during the growing season and until they come into flower, and if they are then taken to cooler quarters for some time, it will effectually put a stop to any second growth—so detrimental to the well-being of these species.

The autumn has been all that could be desired for

the ripening of Cattleyas; some growers, indeed, are complaining of plants of Cattleya Trianæ starting into growth, which is, of course, unfortunate, and is in a great measure accounted for by the dull, cold weather of July. Once these second-growths commence to start, they should be assisted by putting the plants into a warmer house, so that they may mature the new growth.

The plants of Lælia anceps varieties, with flower-spikes, should be arranged in such a manner that the spikes will all draw towards the sun, the natural droop of the flower-spike being much more beautiful than any formal tying. The moisture in the house should be reduced, and if syringing be done twice a day, this will be ample, but a hard-and-fast line cannot be drawn, Orchid-houses being very dissimilar. If the night temperature is kept above 62°, no harm will come to the plants, and I may add that it will be better at 65° if the weather should still keep open and mild.

Vanda teres and V. Hookeriana are now growing apace, and the latter seems to be even a better plant to do than V. teres. We place ours upon long rafts, which are stood upright or nearly so in pots, and these rafts are covered with sphagnum moss. The plants root into the moss, and cling around the raft at a wonderful rate. Plants put on to rafts last year have made growths from 15 to 18 inches in length, besides having flowered this summer. We keep them in a stove close to the glass, and facing south-east, and here they will remain until flowering time comes again. I may say here, that I believe the drying-off of the plants to be a great mistake. My plants were last winter syringed daily, and they flowered profusely during the late summer; and the prospect for next year is even more encouraging than that of last year. I would, therefore, strongly urge those who have been unsuccessful with these plants to give this kind of treatment a trial. *A. G. Catt, Parkfield Gardens, Hallow.*

Fruits Under Glass.

Vines.—Although late Grapes have to some extent taken the place of very early forced Hamburghs, there are gardeners who are required to have ripe Hamburgh Grapes fit for table early in the month of April. In such cases a good supply of suitable pot Vines should be in readiness for forcing. The Vines in pots should be placed on a few bricks or inverted flower-pots, with a piece of turf underneath each pot, and be packed round with a body of warm tree leaves, the heat from which will induce early action of the roots. No fire-heat will be required for the first month, excepting on dull days to dry the canes once in twenty-four hours. Preserve a moist atmosphere until the plants are well on the move, a steady temperature of 50° to 55°, and a few degrees higher being maintained by day, but avoid keeping a too high temperature at night, especially at starting and during the earlier stages. By placing the Vine pots on pots or bricks, the fermenting material may be turned and refreshed at will, thus enabling the sap to be kept in motion, unchecked by a cooling down of the mass of fermenting materials. The Vines will require careful watering in the first stages, and the canes should be syringed twice daily with warm water, and the water afforded the roots should have a warmth of 90°.

Vines planted out require similar treatment, with this difference, that the former have only one crop to mature, and are then thrown away, whereas the latter are expected to produce Grapes year by year, and they must, in consequence, never be so severely forced as the former, or overcropped.

As midseason Grapes are gathered, the pruning and cleaning of the Vines should be done. Watering of the outside borders this dry season may be necessary, and the borders should be examined as to their condition in this respect.

Late Grapes.—If these have well finished, and the foliage shows signs of maturity, the temperature may be gradually lowered, but sufficient heat with ventilation should be maintained to prevent moisture condensing on the berries. Make sure that the borders are in a moist state, taking care to dry up the surface again as soon as possible after affording water. If the Grapes are quite ripe, the border may be covered with dry straw or bracken. Late Muscats, which should now be finished, will require as low a temperature as is consistent with safety, and a dryish atmosphere, no moisture being allowed to condense on the fruit. Air must be given fairly early in the morning, except in foggy weather, and a little warmth should be kept in the pipes. Gros Colmar and Black Morocco, two varieties which enjoy Muscat treatment, will improve in quality after they have coloured, by hanging till the leaves have fallen; but it is a somewhat critical time during the falling of the leaves, most Grapes having then a tendency to get mouldy. All pot plants should be removed from the vinery, the leaves gathered up as they fall, and all water tanks covered up. Lady Downes is without a rival as a keeping Grape when cut and put into bottles, the fruit keeping fresh and plump till May, if it be well finished in September, and the flavour improves by keeping. Mrs. Pince is excellent, but it is difficult to manage, doing best when grown on the extension system of pruning. If any late Hamburgh Grapes still hang on the vines, the vinery should be kept dry and cool. If not already done, every lateral down to the main buds should be removed, and any shoots not carrying bunches may be shortened back to three eyes, to aid in checking growth and plumping up the buds—or the bunches may be cut and bottled as soon as the foliage has fallen. This Grape soon loses its black colour, and becomes of a red tint when kept hanging for a long time. *W. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

Orchards.—Standard fruit trees of all the midseason varieties in bearing, if standing much exposed to the winds, should have the fruit gathered forthwith. Late fruit, which appears to have come on rapidly during the latter part of September, should, when put into store, be placed thinly wherever space can be afforded for so doing. Fruits for late keeping should not be blemished in any way, and should be kept apart from early fruits for safety sake.

Walnuts.—In all southern districts, except on very elevated land, the Walnut will have ripened its fruits, and these should be gathered (knocked down), and stored as they are on the floor of a dry shed, or on shelves in the seed room, till the green husk will part freely from the shell, when the nuts may be cleaned, and stored in clean sand or moss in a cool and moderately dry place. The nut should not shrivel too soon, or become mouldy, or vegetate, and the happy medium is best met by keeping it free from contact with the air, and in a cold place.

Preparations for Tree Planting.—After the root-pruning is ended, preparations for planting trees should be made, October and November being the best months for planting. The wood being fairly ripe this season, the leaves will fall comparatively early; but after the dry weather we have had, nurserymen will not disturb their trees before the soil has been well moistened by rain; but there is nothing to interfere with the trenching of the land, and getting compost carted to the spots in readiness for use. What the kind of preparation may be will depend greatly upon the character of the staple, but, as a rule, all soils that rest upon a retentive subsoil, will be benefited by effective drainage, and the introduction of a large proportion of turfy loam; but when the soil is light, drainage will not generally be required, but the original soil should be enriched by a liberal addition of turfy loam, well pulverised clay, and wood-ashes. Trees should be planted as soon as possible after the leaves have fallen, and care should be taken to keep them but a short time out of the ground. By non-attention to this very important matter, many fruit trees are much injured before they are planted, and planters should insist on their trees being packed by the nurseryman as quickly as possible after they are lifted. It must be allowed that more attention is paid to this matter than was the case formerly. The trees should be planted as soon as they come to hand (weather, of course, permitting), spreading out the roots carefully, and treading the soil lightly about them. It is a good plan, unless the soil is very wet, to make a hollow or basin around the stem of each tree; in this should be dashed a few pailfuls of water, to settle the soil among the roots. The trees may remain untouched for a few days—that is, until the soil has become tolerably dry, when the basin may be filled in, and the soil made firm. Provisional staking of the trees should be done at once, and a mulching put on. Where the natural soil is heavy, it may be advisable to plant fruit trees on slightly elevated sites, and when planting cordons or espaliers against walls or fences, to keep the stem 6 inches or more away from the base of the same.

Select varieties for those who can plant only a few trees, are of Pears:—Jargonelle, Williams' Bon Chrétien, Fondante d'Automne, Beurré Superfin, Marie Louise, Thompson's, Doyenné du Comice, Glout Morçeau, Josephine de Malines, Huyshe's Victoria, Bergamotte d'Esperen, Winter Nelis, Easter Beurré, Ne Plus Meuris. Apples: Lord Suffield, Keswick Codlin, Stirling Castle, Cellini, Cox's Pomona, Waltham Abbey Seedling, Lord Derby, Ecklinville Seedling, Bedfordshire Foundling, Hawthornden, Alfriston, Warner's King, Dumelow Seedling, Sturmer Pippin, Worcestershire Pearmain, Kerry Pippin, King of the Pippins, Cox's Orange, Blenheim Orange, Scarlet Nonpareil, Court Pendu Plat, and Cockle Pippin. Peaches: Alexander, Noblesse, Royal George, Bellegarde, Gros Mignonne, Sea Eagle, and Barrington. Nectarines: Lord Napier, Elruge, Pine-apple, Rivers' Orange, and Humboldt. Plums: Prince Englebert, Pond's Seedling, Denyer's Victoria, Washington, and Orleans, Green Gage, Bryanstone Gage, Kirke's, Jeffersons'. Coe's Golden Drop, and Reine Claude de Bavay. Apricots: Moor Park, Hemskirk, and Early Round. Cherries: Bigarreau, Elton, Governor Wood, Black Eagle, May Duke, and Morello. Figs: Marseilles, Brown Turkey, and Brunswick. Raspberries: Fastolf, White Antwerp, Carter's Prolific, Baumforth's Seedling. Currants: Lee's Prolific, Black Naples. Red Currants: Champagne, Cherry, Knight's Red, La Versaillaise, White Dutch, and Transparent White. *A. Evans, Lythe Hill.*

The Kitchen Garden.

Cabbages.—Before the season gets too much advanced, another good bed of Cabbages should be planted, and this time from the second sowing. Should the seed-beds be dry, thoroughly water them a few hours previous to drawing the plants, and plant the medium-sized sturdy ones. Water the plants, to settle the soil well about them.

Red Cabbage should be planted, and as these take a long time to grow, it is better to keep them on one side of the Cabbage quarter, or in some other spot where the ground will not be required till they are cut. The gaps in the early bed should be planted. Dust the ground well with soot, and keep the hoe in frequent use, to encourage growth and keep down weeds.

Endive.—The earliest plants will require blanching and some kind of protection against frost, as in a wet state the younger leaves are very apt to suffer injury by only a few degrees of frost. Plants large enough for use should be carefully tied up when dry, leaving a little room for the heart leaves to grow, at the same time closing the leaves over at the top; they will blanch very well in ten days or a fortnight. Frames and other means should also be made use of where the demand for Endive is large, but in the absence of glass shelter, much may be done by lifting them carefully, and planting them on a dry sheltered border, allowing each plant just room enough to stand clear of its neighbour, and protecting them with mats or dry bracken when necessary.

Globe Artichokes should have the flower-stalks cut down to the ground, and the best heads put aside for use—they will last in a good state for several days in a cool cellar. After cutting down the stems, a good mulching should be put over the roots, and later it will be advisable to protect each stool with a bunch of Fern or long strawy litter, packing it carefully about the plants; and in very severe weather some litter should be scattered lightly over the tops.

Celery.—Continue to earth-up that which is ready, taking advantage of dry days to do this kind of work. Too much care cannot be taken to keep the soil from falling into the hearts. Abundance of water and manure-liquid will still be required by all late Celery if the weather continues dry, as at present time. *H. Markham, Mercworth Castle, Maidstone.*

Chrysanthemum uliginosum. — About London this tall-growing perennial is singularly late in blooming this year. C. lacustre, its near ally, is well-nigh over, and C. maximum is quite so, but C. uliginosum is only now "knotting" for flower.

EDITORIAL NOTICE.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

APPOINTMENTS FOR THE ENSUING WEEK.

SHOW.

WEDNESDAY, Oct. 15—Royal Aquarium (three days.)

MEETING.

TUESDAY, Oct. 14—Royal Horticultural Society: Committees and Jam Exhibition.

SALES.

MONDAY, Oct. 13—Dutch Bulbs, Azalea indica, &c., at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Nursery Stock, at the Cart House Lane Nursery, Woking, by Protheroe & Morris (three days). Clearance of Plants, Glass Erections, &c., at the Plumstead Nursery, Plumstead, by Protheroe & Morris (two days).

TUESDAY, Oct. 14—Lilies, at Protheroe & Morris' Rooms. Nursery Stock, at Hollamby's Nursery, Groombridge, by Protheroe & Morris' (two days).

WEDNESDAY, Oct. 15—Dutch Bulbs and Azalea indica, at Stevens' Rooms. Plants and Bulbs at Protheroe & Morris' Rooms.

THURSDAY, Oct. 16—Orchids from Mr. Sander, Lilium auratum and L. longifolium Bulbs, from Japan, at Stevens' Rooms. Bulbs, at Protheroe & Morris' Rooms. Nursery Stock, at the Loughborough Park Nursery, Brixton, by Protheroe & Morris.

FRIDAY, Oct. 17—Established and Imported Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Oct. 18—Dutch Bulbs and Azalea indica, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—50°.9.

The Guildhall Fruit Show.

The great Show of Hardy British and other Fruits that was inaugurated by the Worshipful Company of Fruiterers of the City of London, and opened by the Lord Mayor and the Sherrifs, in state, and which was held in the Guildhall, must be characterised, in so far as its extent went, as a great event and a notable success.

Sir James Whitehead, Bart., as Master of the Fruiterers' Company, in his address to the Lord Mayor, explained the origin of the movement, which, he said, was one that the Company trusted would be of great benefit to the growers and consumers of fruit in this country. He also alluded to the small income that it possessed, and to its determination—in spite of this lack of funds—to do everything possible to forward the cause of fruit-growing at home.

The Lord Mayor, in his reply to Sir James' address, alluded to the part his family had taken in developing the foreign fruit trade of London, his father having been one of the first importers of fruit into this country.

The show proved how much an ancient guild like the Fruiterers, with its ramification in all parts of the country, especially in the home counties, can do when it so minds. The magnificent examples of fruit, Apples especially, and these too in some instances from places a long way north of London, one dish of five Peasgood Nonsuch, sent by S. Barlow, J.P., from his garden, at Stakehill House, Castleton, Manchester, weighing 8 lb. 14 oz., and which obtained for the exhibitor a recommendation to the honorary freedom of the Fruiterer's Company, showed what good and suitable soil, position, and intelligent culture are able to perform in the matter of garden Apples. As was to be expected, the nurserymen and gardeners of the southern zone made the greatest display of fine Apples and Pears, chiefly the former; whilst the fruit showing the most beautiful colouring came from the old Apple-growing counties of Hereford, Devon, and Worcester. It is usual for Kent, and especially Sussex Apples, to exhibit an equal amount of colour with these, but this year the colours of their fruit are comparatively dull. To an Apple connoisseur, the hue of the skin may be of far less moment than flavour and tenderness of flesh, but when we have to reckon with the general public, colour takes (undeservedly, it may be) the first place, and it is one of those things which no market grower could afford to neglect in making his selection of varieties.

It was a good feature of the arrangements that the country had been divided into zones, although these were, if anything, rather too extensive. The northern zone included all those English counties which are usually classed as northern, but included the midland shires and much of the Principality. The south-western zone took in all the south-western counties, as well as South Wales; and in the south-eastern zone was included all the rest of the country.

A very cursory glance at the show tables sufficed to indicate the head-quarters of fruit growing at present, that is in the south-western and south-eastern zones. The northern zone displayed, with some exceptions, rather poor samples, improving, of course, the further south we came, which seemed to indicate the great need that there is for careful selection in those parts of all kinds of hardy fruits, so that the grower shall not spend years in growing what will eventually be found of small commercial value. More especially should this matter of selection be brought home to our cottagers and small farmers, who, least of all, can afford to throw their money away in the purchase and growth of unsuitable varieties. It may be stated in this connection, that the cottager and small farmer exhibitors came to the front in a very unexpected manner, their three or five dishes of Apples, Plums, Nuts, Medlars, Quinces, &c., occupying a large amount of space. This was an interesting part of the show, and one that was full of suggestiveness for the future, for what these cultivators had done in the matter of fruit growing, others as well situated could also do. And we are reminded that one good fruit grower, if he grows only a dozen trees, and grows them well, is a centre of knowledge in his immediate neighbourhood, finding numerous imitators. At the same time, the uncertainty of his tenure of the land generally is against any large or immediate increase in fruit growing by the cottager and small farmer, and until they are assured of getting compensation for trees left in the ground on quitting their hiring, we shall see but slow progress made in the matter. All that is wanted is an alteration of the law that shall recognise the justice of applying the principle of compention to the little man equally with the big one with his hundred or thousand of acres. We cannot but think that the Company of Fruiterers deserves the thanks of the community generally, for its endeavour to popularise the art of fruit growing in this country, and we hope to observe some results spring from its effort in this direction. It is a pity that the very class which should be most interested in the show, namely the small grower, the cottager, country artisan, and small holder, were debarred by distance and otherwise from partaking of the benefits to be derived from it.

Besides the fruit we have alluded to, Grapes in variety, and jams, both home made and otherwise, were shown, and which were, as regards the last two, adjudicated on by Baroness Burdett-Coutts: also a few dishes of Strawberries appeared like belated visitors.

The Allotment System.

The crystallisation of all the Governmental Departments having any connection with the land in Great Britain and Ireland into one great Board, or Ministry, as some term it, and under a responsible Minister or President, has so far proved a great success, much of which is most certainly to be attributed to the foresight and energy of Mr. Chaplin, the first President of the Board of Agriculture. Doubtless he has an eye to party, that is to some extent a necessity of his position; but the other eye is sound, no nerve lesion can so far be predicated of it. That we do not speak without "book," the past few days bring us ample proof. In one case, the Act lately become law relating to the stamping out of cattle diseases has been most effectively put into operation, a herd being sacrificed for the purpose of saving—who can tell how many others, as might easily have happened under the old system, as evidenced by the havoc played by the spread of foot-and-mouth disease in former years.

But however much we may be, and certainly are, in the bucolic aspect of the matter, there is one in which all of our English readers are interested—to wit, the wide extension of the system of allotments to labourers and workmen throughout the country. In the long ago, it was demonstrated that the driving of labour into the cities was against the farmers' interest—that the keep of a cow and a bit of vegetable and Potato land was a supplement to his wages, which every labourer ought to have the opportunity of acquiring in order to fix him on the land; and the wisdom of that contention has been evinced by the number of laws passed to facilitate the acquirement of allotments. To those acquainted with the great love of townspeople for "a bit of garden," it was no surprise to find them rapidly taking advantage of the opportunities provided by the Legislature, and the "'orny 'and" of tens of thousands of town workers — mechanics and others — now grasp the spade as a relaxation, and as a health-giver at eventide, so long as there is light. As a mere matter of hygiene, there can be little better exercise than gardening, occasionally, for the mechanic—quite apart from the monetary consideration. To a very great extent the migration of labourers from the country to the town has ceased in many districts—notably so, we believe, from those parts where the acquisition of allotments is made an easy matter; for the local authority is not always movable in this direction where it has any fear of the large owners, and requires frequent stirring up a little—for which purpose there are two societies established, which our readers may know as Mr. Jesse Collings' and Sir Walter Foster's—rivals in well-doing; and in the 600 pages of Mr. Chaplin's great report on allotments—the forms of inquiry for the getting up of which were only sent out in January last, full details will be found on which to base still further well-doing. The

spots to be looked after are, as it were, ticked off—for all the townships or parishes in which no allotments have yet been made have blank spaces attached to them; and they are in number many.

Every parish or township in the country is in print in this volume—the country has been regularly mapped out, and he must be a dullard who cannot read the lessons given by the figures. In 1873 the number of allotments was 243,000; this number was increased by 1886 to 357,000, and in the present year to 445,000!—certainly a splendid result. As there are something like a million agricultural labourers, this would give nearly one allotment between two men; but things do not run quite in this manner. For instance, Lincoln and Norfolk are almost the largest counties in England, and may be termed agricultural; well, Lincoln has 16,000 allotments, and Norfolk, 12,000 = 28,000. Then, Leicester and Northampton are pastoral when they are not manufacturing counties, and Leicester foots up 23,000 allotments, and Northampton 26,000 = 49,000, or 21,000 more than the two former agricultural departments of England. So much for the workers in towns. By the way, it should be noted that the figures recorded for allotments do not include large gardens attached to cottages (250,000), nor any of the 320,000 small holdings of less than 20 acres; or of the nearly 17,000 Potato-grounds or railway allotments. So that when we add all the above to the allotments secured under Acts of Parliament, we find a very respectable array of facts all bearing on the side of thrift and contentment, and—near towns—the culture of the beautiful and of health by the toiler is far too often the dingiest of factors. As we have hinted, the blanks in the columns of this work of Mr. Chaplin's are very suggestive, and we trust their silent appeal will be quickly answered. Gardens in the mining districts would be a great boon to the miners; and where these are found, they are warmly cherished by those who form and tend them.

There is no necessity for sentimentalising over this view of the subject of allotments; but there can be no doubt but that labour in this field is perhaps the most humanising of all the labour in the land. Those who wish well to the agricultural labourer—to all labouring men—would do well to store up the lessons of this addition to the statistics of the country.

The Rockery at Messrs. Hooper & Co.'s Nursery (fig. 83). — None of our large London nurseries have experienced so many vicissitudes as this old nursery at Maida Vale. Known as a nursery garden for over a century, its palmy days before and immediately after its coming into the hands of Mr. Arthur Henderson will be remembered by many horticulturists and plants-



Fig. 83.—The rockery at messrs. hooper & co.'s nursery, maida vale.

men. Subsequently its fortunes began to decline and later it passed into the hands of Mr. John Weeks, who seems to have made for a time a hobby of it, spending large sums of money on buildings and improvements. When Mr. Weeks tired of it, it was put up for sale, and purchased by Mr. Andrew Henderson, who again started the concern as the Pine-Apple Nursery Company; but the owner never seemed able to acquire a knowledge of modern business requirements, and, as a *dernier ressort*, he induced the well-known firm of Hooper & Co., Covent Garden, to take the concern under their wing. In Messrs. Hooper's opinion the chief detriment to the place was its lease, which

was rapidly approaching its termination, and on this point they resolutely set themselves to work, with the result that a fresh lease for 99 years has been acquired. As the locality is of little use for open-air nursery work, Messrs. Hooper intend filling the whole of the Maida Vale frontage with neat glasshouses for growing plants, and the back portion, with the frontage in Hamilton Terrace, is to be arranged for building purposes. It is to the period of Mr. Weeks' occupation that the establishment owes its grand and lofty conservatory (about 100 feet by 80 feet), and the fine rockery which occupies one side of the building, and which is the best specimen of rockwork perhaps under glass round London. It is tastefully planted with Ferns and Palms—many of the specimens being of rare species, and as the large specimen Palms and other plants in the body of this fine conservatory are grouped on the ground, without staging, it has the advantage of harmonising with the rest of the decorations, and thus shows itself to much advantage. Messrs. Hooper & Co. seem bent on making the phœnix rise from its own ashes, and adapt itself to modern requirements. To this end they are growing thousands of Kentias and other Palms, always in demand; market Ferns and foliage plants, a fine collection of Caladiums, and double and single Begonias; and, indeed, anything which is likely to sell at a profit. A large number of cool Orchids are grown, and in the houses are fine stocks of the beautiful Australian Pitcher Plant, Cephalotus follicularis, a batch of the singular Darlingtonia californica—another of the fly-trap, Dionæa Muscipula. Pinguicula candata, which may also be regarded in a measure as a fly-catcher, thrives well in the same house, and freely produces its rich magenta flowers; and the house of Nepenthes contains the fast-growing and best pitchering kinds, and all in good condition. Mr. Willingham, the manager, states that his experience proves that none of these plants are difficult to grow, and might easily be kept in good order in an ordinary conservatory if properly shaded and otherwise attended to.

B. S. Williams Memorial is reported to have made fair progress, although the amount promised is still insufficient for the several purposes specified in the resolution that is the basis of the work of the committee. It will be remembered that the objects of the Fund are the maintenance of the orphans of gardeners, and the promotion of excellence in the cultivation of plants. These have claims apart from the personal interest which inspires the undertaking, and may influence many in favour of the Fund who were not acquainted with the late Mr. B. S. Williams. The committee, therefore, ask for further help; and they ask, also, that all who have promised and have not paid over the amounts for which they have made themselves responsible, will do so without delay, as it is the intention to advertise all donations in the order in which they are received.

Chrysanthemums in London Parks.—The tenth annual display of Chrysanthemums at Finsbury Park will be open to the public daily at ten o'clock on and after Saturday, October 11, and will be at its best for some two or three weeks afterwards. At Battersea, the Chrysanthemum show will be open to the public in the frame-ground on October 16.

Continental Novelties.—In a list of these sent to us by Messrs. Haage & Schmidt, of Erfurt, we notice a new hybrid Begonia obtained by crossing B. Scharfiana and B. metallica. It is of graceful habit, with foliage resembling that of B. metallica. The flowers, which appear in large corymbs, and are snow-white with red hairs on the reverse of the petals, far excel its parents. It is a very hardy ornamental plant, and is recommended for the greenhouse and for standing in rooms.

Erythrolæna conspicua is a species of Thistle, forming a densely-leaved bush about 4 feet high at the time of flowering. The flower-stems are blackish-brown, erect, and many-branched; the leaves dark green, with brownish-red ribs, pinnatifid, lanceolate-lobed, toothed, 2½ feet to 3 feet in length, by 15 inches to 18 inches broad. The flowers are conical, and appear three to four on the top of the stem, and are of a bright orange-carmine colour, and when they open, the pink stamens appear. It is a biennial, of Mexican origin, and may be treated like a Chamæpeuce. A good subject for the border or lawn.

Salvia prunelloides purpurea produces flowers of a deep purplish-red colour, a tint which hitherto has not been found amongst annual species of Salvia. It is a free-flowerer, and lasts till cut down by frost.

Stock-taking: September. — As was expected, both imports and exports show an all-round increase this month, and for this we are in part indebted to the passage of the new Tariff Bill through both Houses of the American Legislature, and its subsequent signature by President Harrison. There was a rush to get in goods under the old tariff, hence the result recorded above. It may be doubted, however, whether our hold on the American market will be retained, even although vendors over there have at once responded to the call of the new tariff, and raised prices all round. If our cousins can afford to pay them, it will pay to export; as usual, time will show. The following reduced "summary" table of imports for the month of September from foreign countries and British possessions will be found to possess all the usual interest:—

	1889.	1890.	Difference.
	£.	£.	£.
Total value of imports	33,406,985	35,551,688	+2,144,703
§II.—(A.) Articles of food and drink—duty free	10,981,549	12,448,671	+1,467,122
(B.) — do., dutiable	2,694,872	2,570,681	—124,191
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	3,722,899	4,063,419	+340,520
VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,665,594	4,676,544	+10,950
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,231,353	1,361,940	+130,587
(B.)—Parcel Post ...	24,424	41,460	+17,036

Before parting with imports, however, it ought to be noticed that those for the nine months just past are less by £3,477,191 than for the corresponding period last year. On the export side of the account we find that, with only one item of decrease (living animals, £66,075), there is an increase in the home products of £3,072,062, and of other produce of £1,595,682. For the nine months (—£241,437 in living animals) there is an increase in the record of £14,833,254 for articles of British produce, and of £946,794 for articles originally imported from foreign countries and British possessions. The figures speak for themselves. As usual, we give an extract from the general figures of items interesting to home growers of fruits and vegetables. These are as follows:—

	1889.	1890.	Difference
§ II. Fruit:—			
Apples, raw ... ... bush.	289,736	393,020	+103,284
Unenumerated, raw ... ,,	358,216	1181,256	+823,040
Onions ... ... ,,	424,362	516,682	+92,320
Potatos ... ... cwt.	34,962	45,144	+10,182
Vegetables, raw, unenumerated ... ... Value	£53,818	£76,273	+£22,455

It will be observed that "plus" has it all the way round, and that by just so much are home growers able to gauge the market in the contemplation of new efforts in the encouragement of British and Irish production.

A Palm House in Lincoln Park.—We are indebted to Mr. Harris Chadwick, of Chicago, U.S.A., for the following notes on the new Palm-house and Victoria regia in Lincoln Park, in that city. As described by the *Chicago Tribune* some time ago, plans have been completed by Architect J. L. Silsbee for the construction in Lincoln Park of a Palm-house, which will be second to none in the world. This house, when finished, will be used as a Palm-house, fernery, and conservatory. The great Palm-hall will have a length of 167 feet, a breadth of 64 feet, and a height of 52 feet, the latter graded so as to add, in a remarkable degree, to the external beauty of the foliage. [The Palm-house at the Royal Gardens, Kew, is 362 feet long, 66 feet high, and 100 feet wide in the centre, and 50 feet wide, and 30 feet high at the wings. Ed.]. In the park, there are many aquatics in an artificial open pond, the water in which is heated by steam pipes connected with the pumping works, and the overflow from this pond is led into another pond or basin. Last year, plants of the Victoria regia freely bloomed in these ponds, and Mr. Pettigrew, the Superintendent, was enabled to save 300 seeds from these plants. The Victoria regia on September 13, 1890, was blooming freely in a small lake which has been without artificial heat since the plants were put out early in June.

Technical Education. — We are informed that a course of instruction on the principles of agriculture and seed control is being given at the City of London Young Men's Christian Association, 186, Aldersgate Street, E.C.

Birmingham Gardeners' Association.—A. W. Wills, Esq., J.P., of Erdington (who has a fine collection of Orchids), gave an admirable lecture on "Burmah; its People and its Flora," at a large meeting of the Birmingham Gardeners' Association, in the Midland Institute, on the evening of Monday, October 6, the lecture being copiously illustrated by lantern views. Sir Thomas Martineau, the President, presided. It was a most interesting lecture, and some of the photographs of species of Bamboos, Palms, and Tree Ferns, of the country, with which the lecture was illustrated, had been excellently taken.

Grass Seeds for the Royal Parks.—We hear that the order for the supply of Grass seeds to the Royal Parks has again been entrusted to the well-known firm of seed merchants and nurserymen, Messrs. Little & Ballantyne, of Carlisle.

Vanilla.—On the occasion of a meeting of the Société Nationale d'Horticulture de France, on June 26, 1890, M. Maron, gardener at the Château St. Germain, Corbeil, exhibited a boxful of pods of Vanilla ready prepared for use. The plants from which they were taken grow in a small glass-house, 4 mètres long by 2·50 mètres high, and covered the whole of the walls, and it was possible to gather 400 pods in a ripe state at one time. *Revue Horticole.*

Scottish Horticultural Association.—The ordinary monthly meeting of this Society was held in 5, St. Andrew Square, Edinburgh, on the 7th inst., when Dr. McFarlane, of the Herbarium, Royal Botanic Garden, Edinburgh, gave an interesting lecture "On the Hybridisation of Plants," which was amply illustrated by diagrams from microscopical observations, showing how well balanced in many hybrids the characters of both parents are reproduced. The lecture evoked a hearty vote of thanks. Of exhibits there were two very fine stands of cut blooms of Chrysanthemums, one from Messrs Thos. Methven & Sons, the other from Mr. Rushton, gardener to — Tod, Esq., Hill Wood, Corstorphine, both containing splendid blooms of the more popular varieties. Mr. Chaplin, Oswald Road, Edinburgh,

exhibited a remarkably well-bloomed Hydrangea hortensis; and Mr. Chaplin, gardener to Charles Jenner, Esq., Easter, Duddingston, exhibited a collecton of perennial Asters. Also from Mr. Dunn, Dalkeith Gardens, came a grand collection of Onions, Beet, and Turnips—the best forms of each exhibited at the Vegetable Conference at Chiswick last year. On the announcement of the death of Miss Owen, Gorey, Ireland, and Mr. Holmes, Secretary of the National Chrysanthemum Society, it was moved, seconded, and unanimously carried by the meeting, that the Secretary convey the condolence of the Society to the relatives.

Notices of Books.

Diseases of Crops and their Remedies. A handbook of economic biology for farmers and students. By A. B. Griffith, Ph.D., &c.

This is one of the series of agricultural handbooks published by Messrs. Bell & Sons. It is a compilation which will not give universal satisfaction, nor indeed, does the author think it will be otherwise, for he begins by asserting that he is not thoroughly orthodox. His heterodoxy, however, only consists in the circumstance that he writes the names of insects or plants without appending to them the names of those who have described them, and given them the names they bear. Considering that the book has no importance in any historical sense, this omission is not only quite justifiable, but in accordance with general practice. One can, no doubt, "be a very great botanist without knowing the name of a single plant," but at least, one would be a greater one still, if one had some acquaintance, not only with the name of a plant, but of the author who applied the name. It is one thing, for instance, to see the initials of Robert Brown after a plant, it is another to see those of—well, any inexperienced observer. Dr. Griffith may ignore, as he has a perfect right to do, the names of describers, but those whose business it is to investigate for themselves generally, find it expedient to ascertain what their predecessors have done, and so facilitate their own work and save themselves in all probability much unnecessary labour.

The diseases of the principal agricultural crops caused by insects and fungi are briefly dealt with, and various suggestions made as to the methods of prevention and "cure." Some of these require revision and extension. To tell a farmer troubled with Carrot-fly to "mix one pint of paraffin oil with two gallons of water, and water the plants with the mixture after thinning," is not a very practical direction. The use of sulphate of iron as a remedy for the Potato blight is a valuable hint for which we are indebted to the author, who might well affix his name to the prescription. We hope Dr. Griffith may institute some trials as to the relative efficiency of sulphate of copper and sulphate of iron. Our own impression is that, used with proper precautions and of appropriate strength, the copper solution is likely to be the more efficient of the two; but this is a point that requires working out.

Fruit Farming for Profit (up to date). By G. Bunyard, Old Nurseries, Maidstone.

This is a third edition of Mr. Bunyard's practical treatise, embodying the results of the information gained in consequence of the remarkable displays at the Chiswick Conference, and at those of Edinburgh, the Crystal Palace, and elsewhere. It is very serviceable to have this information condensed within short compass. We were a little disposed to complain of the references to advertisements in the text, deeming it always more satisfactory to keep business notices by themselves, as giving greater confidence to the public, and avoiding even the suspicion of interest and undue bids. But, on turning to the advertisements themselves, we find reason for Mr. Bunyard's comments, for among them are found notices of insecticides, machines for washing trees, spraying machines, hoes, preserving pans, &c., and other implements, matters concerning which we are often asked questions, but to which we are not always able to reply. In more than one instance we have had to write to the United States to obtain information about spraying machines and insecticides in large use in the States, but which are rarely if ever publicly brought under notice, though we now find from Mr. Bunyard's book that some of them may be obtained in this country. There has certainly been great progress in fruit-growing in this country; but we suffer, as a nation, from want of enterprise in undertaking experiments, and from slowness to adopt new methods and new tools, even when it is proved that the old are unsatisfactory, or not adequate to meet new conditions.

Paris.

Cannas on Lawns.

In the Jardin Fleuriste de la Muette, the well-known place from which issue all the plants used in the Paris parks and squares, we saw lately a very good arrangement. Along a walk, there was on the lawn a row of beds, planted very simply with Pelargoniums, and a border of another colour or of another plant, alternating with small groups of Cannas. The effect was most striking, and the last are seen much better in that way than in those large beds having several yards in diameter, presenting too formal and stiff appearance. Especially those beautiful new varieties, with ornamental flowers, of which there is a large collection at la Muette, will be adapted for that purpose. In the Champs Elysées, this way of planting has already been used; here and there a little group of five to seven plants dotted on the lawn made, at least to us, a novel and quite pretty feature, in those beautiful and well-kept gardens.

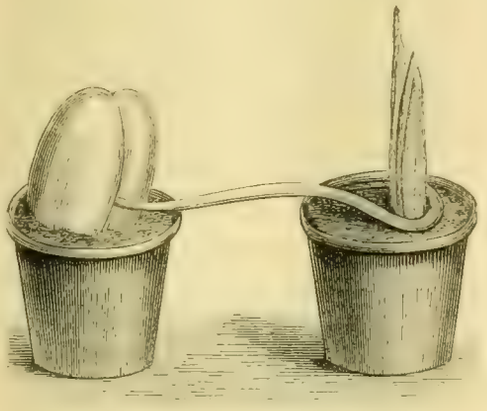


Fig. 84.—Germination of seed of Lodoicea seychellarum.

Cattleya labiata Warscewiczi alba.

A few weeks ago, we noticed at Mr. Truffant's nursery, at Versailles, a most splendid variety of the Cattleya commonly called C. gigas, which species, or rather variety, may be considered as one of the finest of the genus. The above-named variety was even more beautiful than the type; the sepals and petals were pure white, forming a beautiful background to the lip, which was of a rich deep purple, tinted with violet; it looked like a plant that was worth its weight in gold. At the same nursery, where everything seems to be thriving, we saw many C. Warscewiczi, Eldorado, crispa, &c., being in, or coming into flower. Lælia Pinelli, a beautiful L. crispa Buchaniana, a Houlletia Brocklehurstiana, with its large, quaint-looking, but deliciously-perfumed flowers on a very strong spike, and many more were to be admired. Among cool Orchids, Odontoglossums and Masdevallias, of which there was a large lot, were looking especially healthy.

Lodoicea seychellarum Germinating.

In the Jardin des Plantes in Paris, there is now a plant of this very curious Palm in very vigorous health. It was sown three years ago, and is now growing fast. Besides the first small deformed leaf, there is a second one, of more than 5 feet in length, if the stalk be included, and 2 feet broad; it is likewise folded in two, dark green, and of a leathery texture. A third one already being 3 feet in length is just opening, and will soon spread out the blade.

Another seed has just started, showing the commencement of the bud. (See fig. 84.)

In the same house several seeds of Cocos nucifera, the Cocoa-nut, were sown some four months ago. They are looking very fine and healthy, and are already grown up to a height of at least 1 foot.

A Pretty Composition.

In the beautiful gardens of the Luxembourg at Paris, once a palace, but now partly a museum, we noticed at the foot of a splendid specimen of Musa Ensete a little flower-bed, which merits mentioning; it was only a yard or two in diameter, but very tastefully arranged. In the middle there were single pure white and fine pink Pelargoniums mixed. Here and there a Centaurea candidissima was peeping out of them, getting more plentiful towards the border, where at last it formed a full row. The outer row, the one next to the lawn, was composed of a dwarf kind of Lobelia. Very simple it was; but how extremely lovely, and worth imitating.

In the same gardens we saw in mixed borders, altogether, beautifully arranged, large specimens, more than 2 yards high, of an old variety of Pelargonium, looking like Distinction, with its small but pretty flowers. These plants, with plenty of foliage from top to bottom, and wholly covered with flowers, made a splendid show. *H. J. Goemans, Paris.*

A New Japanese Fruit: Myrica rubra.

In the last issue of the Paris *Revue Horticole*, Mons. E. A. Carrière, one of the co-editors, describes this new fruit, drawing most of his information thereanent from one of the American horticultural periodicals, whose name he does not give. He says it will not probably prove quite hardy in the neighbourhood of Paris, but as the winters there are usually very severe, it will, I hope, prove quite hardy both in the South of England and in many parts of Ireland; and where not hardy, it should, I think, be quite worth the protection of an orchard-house during the winter, as it seems to be well-adapted to culture in pots.

It was apparently first introduced into cultivation by the well-known Japanese specialists, Messrs. Siebold and Zuccarini, who describe it as a very ornamental evergreen tree, with stout and leathery foliage, resembling that of a small-leaved Magnolia. It reaches, in its native country, a height of from 30 to 40 feet. The wood is light, hard, and very durable, and is much used in Japan for ornamental fancy cabinet-work, being very prettily marked, and of a much finer grain than the Japanese Maple. The bark is also used for making a valuable fawn-coloured dye.

Myrica rubra produces an abundance of an eatable fruit of delicious flavour, of a deep red—approaching to black—colour, and is about an inch long, and a quarter of an inch thick. The shape is somewhat like that of a Mulberry, and contains a single, very light seed. It is an excellent dessert fruit, and makes very good jam. The flavour of the fruit is difficult accurately to describe, but it is something between that of a Cherry and a Mulberry. The fresh juice makes an agreeable beverage, and by means of a slight fermentation it can be made into an excellent wine.

Plants raised from seed reach bearing-size in from

five to six years, but when grown in pots, under glass, they come into bearing rather sooner, or in from four to five years. There are two varieties, one with the dark red fruit mentioned above, and the other with light rose-coloured fruit, which is the better variety of the two. The seeds should be sown in an exposed situation, in stiff loam and leaf-mould, and covered during severe weather with a thin layer of straw or leaves. Seeds of this new fruit can now be obtained from Messrs. Vilmorin, Andrieux & Co., 4, Quai de la Mégisserie, Paris. *W. E. Gumbleton.*

Home Correspondence.

PINE-APPLE CULTURE.—During the last few years I have taken an interest in growing this fruit for table—growing the suckers and fruiters in one house, and in the last twelve months I have cut twenty-nine Pines, weighing 132 lb. 14 oz., the heaviest 10 lb. 8 oz, and the lightest 2 lb. 13 oz. I cut the first fruit on October 4, 1889, the last on September 20, 1890. The house is span-roof, 22 feet 6 inches long, 18 feet 6 inches wide, with side lights 2 feet high; it has one entrance, and is heated by four rows of pipes under the bed, which is in the centre of the house. This bed is 17 feet long, 7 feet 6 inches wide, and is filled with tan to the depth of 2 feet, and fresh tan is added to the old tan in spring and autumn. The old tan at those times is well moistened with scalding water to kill any insects that may harbour in it, and it is then mixed with the new. We grow between fifty and sixty plants, including the suckers, and the soil consists of fresh fibrous loam, with some bone-meal, soot, and charcoal added. The fruiting Pines are put at the warmer end of the bed, and the suckers at the other. In the winter we avoid employing a high temperature, and the day warmth does not reach above 70°, whilst at night it does not go below 60°. Great care is taken in watering the plants, and I find that they are better kept dry than wet. As a stimulus we employ weak manure-water, made with fresh cow manure and soot, and no evaporating trough is allowed in the house, but slightly syringe the plants twice a day. In summer, plenty of water is thrown about the house in hot weather. The Queen and the Smooth Cayenne varieties I find the most useful. Great care is taken to prevent white scale getting on the plants. The available space over the pipes on each side of the house is made use of for growing small plants, and we find the house a very useful one. *W. Kipps, Walton Lea, Warrington.*

EUGENIA UGNI.—It may be of interest to your readers to know that Eugenia Ugni is growing out-of-doors at this place. I planted it against a south wall about four years ago, and during that time it has had no protection whatever. It is now 10 feet high, and at the present time is carrying a good crop of fruits, several of which are quite ripe, and of good flavour. I also planted on the same wall two plants of Habrothamnus [which] which flowered quite as freely as it does under glass, and some of the flowers have been impregnated—as I suspect by the bees, as there are several bunches of deep red berries, which make the plant doubly ornamental. *J. Harding, Longford Lodge, Co. Antrim.*

STRAWBERRIES IN THE AUTUMN.—At a meeting of the East Anglian Horticultural Club, held at "The City Arms," Norwick, on October 1, Mr. Baker, gardener to B. Fletcher, Esq., Marlingford Hall, placed on the table some splendid fruit of the Noble Strawberry—fruit that would not have disgraced any exhibition table in July. Mr. Baker's crop is not, I believe, just a chance fruit or two, as is often usual in the autumn, but such a crop as he expects to have regular gatherings from for a month or five weeks. I may say the plants are in pots. *J. Green.*

GREASE BANDS FOR FRUIT TREES.—On January 15, 1889, I showed before the Scientific Committee of the Royal Horticultural Society, a band of green scrim smeared with cart-grease, in which were imbedded numbers of wingless females and some males of the winter moth, caught in the autumn before, while crawling up our fruit trees. This season our bands, instead of being of green scrim, which has the defect that even when used three-fold, some of the grease gets through to the tree, is a sort of brown canvas made by the Willesden Paper Company, and it is not expensive, as the price is 1*s.* 6*d.* per yard of 35 inches wide; in our bill it is called "D D extra brown." One thickness of this seems to answer every purpose, and to hold the cart grease well. A few of our trees which last year escaped treatment, showed in the most marked way the advantage of the protecting bands. The width we use is 4 inches, tied on by thin tarred twine. The trees should have the bands placed on them before the end of this month. *George F. Wilson.*

STANHOPEAS.—To some it is a matter of surprise that these striking plants are so much neglected at the present day, for they produce curious and beautiful flowers, and are easy to cultivate. It is true the flowers fade soon, but so do those of Sobralias, some species of which are eagerly purchased now. One sometimes sees Stanhopeas in collections of plants, but they are mostly in bad health; and in some instances I have seen them growing in pots, in which position the flowers, if they have any, would be found amongst the drainage. Stanhopeas should always be grown in shallow baskets, without any drainage whatever, on account of the flower-spikes, which, in most cases, grow straight downwards, and therefore, if crocks or charcoal were used, would probably cripple them. A layer of sphagnum moss laid on the bottom of the basket, and the plant made firm with peat, moss, and a few small lumps of charcoal, is all that they require. Re-basketing should be done just as the plants begin to grow in the spring; water is required to be afforded freely during growth, and gradually lessened in quantity as growth comes to an end. During the winter, only sufficient water should be supplied the plants to keep the pseudobulbs plump. Our plants stand in the Cattleya-house, and as an instance of our success with them, I may mention that we have a plant of S. Ruckerii in a 12-inch basket, with six spikes, carrying thirty-six flowers. Other species have flowered in a similarly satisfactory manner. Once a plant is established, I find it is best left alone, till the wood of which the basket is made has decayed. *W. H. Young, Clare Lawn, East Sheen.* [Terra-cotta, or ordinary pottery clay, form good materials for baskets for Acineta, Stanhopea, &c. Ed.]

A SOLANUM CONFERENCE.—Whilst interest in the Chiswick Conferences lasts, it may not be out of place here to make suggestions, so that ample time be afforded for the working out of such suggestions for the Conference at Chiswick next year. This one, I suggest, should be devoted to the Solanum family, the chief place, of course, being given to those which are edible. It seems hardly possible that the family which gives us the Deadly Nightshade, should also furnish such remarkable products as Potatos and Tomatos. These, tuberous and fruiting, have become such important food subjects, that, above and apart from all other Solanums, they would make a fine display, and furnish material for a couple of days' Conference. [We had a Potato Conference on December 1—4, 1886. Ed.]. When the Vegetable Conference of last year was over, it was generally agreed, by those who had given attention to the subject, that henceforth Conferences should be confined to individual and allied vegetable products, as with such a wide field open as the whole range of garden vegetables presented, it would be impossible to do justice to all at any one time. But whilst we have in the cultivation, varieties, uses, and diseases of Potatos and Tomatos ample subjects for discussion, an interesting display could be made with other members of the Solanum family, in which Kew might be solicited to take part largely. There are some very ornamental members of the family, notably the berried and fine-leaved Solanums, which would materially help to contrast with the masses of Potatos and Tomatos. But these latter products, being so important as food, it would be a capital plan to have them exhibited in divers forms cooked and otherwise. Tomatos enter most into sweet and hot flavoured preserves—we find them in the form of jam; and doubtless there are many uses to which they may be put. Especially should there be exhibited samples of tinned Tomatos, as available both for long keeping and for distant transit. The diseases which affect both Potatos and Tomatos, which are similar in their manner of attack, are of the destructive kind, and the means of combating them opens a wide field of inquiry. This season the Potato is exciting great interest on account of the loss of the crops in parts of Ireland, and its partial loss in parts of England and Scotland; it would be instructive to obtain at the Conference a collection of samples of tubers as ordinarily produced in the bog districts of Ireland, and specially of the varieties which form the staple crops of the peasantry in that country. No doubt Mr. Drury Lone, of Cork, or Mr. Murphy, Clonmel, could collect such examples and send them to the Conference. Then we should have also similar collections of Scotch production, so as to compare the sorts and samples grown generally in the three chief countries of the Empire. So far as Wales is concerned, probably her products do not differ appreciably from our own. The middle of September would be quite late enough for the holding of this Conference, and generally it is late enough for large gatherings at Chiswick. A very valuable paper would be one on the "Tomato as a Food in its Raw State." It is yet sadly needed that this valuable product should be popularised for production it its ripe condition. The taste for it is growing rapidly, but still it is little appreciated by the mass of the people. Those who do like raw Tomatos admit that no method of cooking or dressing presents the fruit in such desirable form for consumption as when ripe and uncooked. However, it is evident that a big field is opened for discussion if a Conference on the Solanum family and its allies be arranged for next year. *A. D.*

TOMATO CULTURE.—Having had experience in some of the largest market gardens in the south of England where Tomato are extensively grown, I read eagerly all that is written about them and I quite agree with "A. D." in regard to the temperature necessary to grow the fruit well. It is the sun-heat that the plant requires, and I have found that very little can be done with the Tomato unless we have a good summer, for according to my experience the use of artificial heat adds very little to its productiveness, and I always take advantage of a fine day to give the plants all the air possible, and keep them on the dry side. "A. D." says nothing of pruning, and in my opinion you cannot use the knife too much. I do not let more than one or two shoots grow on each plant, as there is no benefit to be had by allowing more than this number to grow; and as regards the foliage, quite half of it should be cut back, which, in my opinion, throws more substance into the fruit, and allows more sunlight to reach the fruit to ripen it, brings out its colour, and heightens its flavour. The Tomato does not require a rich soil, or too much rotten manure, which is apt to cause excessive growth of leaf, and but little fruit. *A. B.*

—— All who happen to visit these gardens exclaim, "How well your Tomatos are doing in the open air, in comparison with others in this locality." The varieties I am growing are Sutton's Perfection, and a kind I had sent me from Canada several years ago, under the name of Livingstone's Favourite; and so well did it do, that I saved a little seed, and have continued to do so ever since; and although, perhaps, not quite equal in quality to some varieties of more recent introduction, its robust constitution and comparative earliness renders it a most desirable kind for open-air culture in our variable climate. I always sow early, and get the plants in a sturdy condition by the end of May, when they are planted in bare spaces against walls, encouraged till they have filled their allotted space, when no more growth is allowed. On one plant I counted nearly sixty well-developed fruit, half of which were ripe or ripening. I commenced picking this variety on August 2. *G. B. Claydon.*

PEACH BELLE BEAUCE.—At Fairlawn, Kent, there is a tree of the above-named variety whose stem measures more than 2 feet round. The tree fills the whole of this house, and produces annually some 300 fine fruits. If my memory serves me correctly, the tree was planted thirty years ago by Mr. C. Ross, who at that time had charge of the garden. This variety, although old, is not so much grown as some others, but Mr. Fennell speaks very highly of it as an indoor Peach, as it never fails to crop heavily. *H. M.*

TROPÆOLUM SPECIOSUM.—The chief difficulty with this hardy plant is to get it established in a suitable position. It is not always easy to start it into growth in new quarters, for cold winds affect the tender shoots as they appear above ground, especially if planted in a northern position, or where the easterly winds reach it. Planted at the base of a north wall, in any kind of good soil, and training the growths on small-meshed rabbit-wire fastened to the wall, is perhaps a good plan, and in some places it is

more desirable if less natural, than letting it trail over bushes. The tendril-like leaf-stems entwine themselves in the wire, and when once started to cling, little attention afterwards is needed to keep the young growth in order. The current year's growth should not be cut down after the leaves fall, as it is difficult to replace. [As a rule, the shoots die to the ground annually. Ed.] In a dry season, copious supplies of water to the roots is an advantage, as, when growing in such a position, the wall absorbs some moisture from the soil, which favours the attacks of red-spider. Liquid manure is a great assistance in promoting free growth and abundance of flowers. Although this Tropæolum will succeed in a southern aspect, it is nothing compared to what it will do on a northerly one, it seeming to enjoy the cool and more moist temperature afforded it there. The finest lot of this showy climber I have seen is at South Stoneham House, near Southampton, where a narrow border, planted with evergreen shrubs, and behind a south wall, is planted liberally with the plant. The bushes are closely pruned on account of the narrowness of the border, and at the time of my visit these were masses of vivid scarlet for fully 60 yards in length. On the entrance-lodge, also facing north, in the early part of July, there was a profusion of flowers on plants that were about 10 feet high. In Cheshire I have seen it growing and flowering very freely, entwining itself amongst the twigs of an English Yew hedge. When the flowers are past, the dark purple berries, which are generally borne in clusters of three, have a very pretty effect. Propagation by division is the readiest means of increase, and in the autumn, when the leaves fall, is the best time of year to replant, as the plants get established in the soil earlier than would be the case with those spring-planted. *E. M.*

MRS. PINCE MUSCAT.—When Mrs. Pince Muscat was first brought out, it was grafted and inarched extensively by growers, but for certain reasons it did not maintain its reputation, and the cultivation of the variety almost ceased. In a measure its bad repute arose from its imperfect colouring, which was usually traceable to insufficient warmth in the vinery; and in some instances, probably, to grafting and inarching it on worn-out Vines. When well grown Mrs. Pince is a fine Grape, and I was very much struck with the appearance this year of the fine examples growing at Fairlawn, Kent. Mr. Fennell has several of the plants of the variety in a mixed house which are heavily loaded with large, nicely-shaped bunches, most of which would weigh 6 lb. each. I was told that the berries colour well, but, as is the rule with bunches which are large and solid, it takes a long season to perfect them. The vinery is lofty and well found in hot-water pipes. *H. M.*

SOCIETIES.

FRUIT SHOW AT THE GUILDHALL.

October 6, 7, and 8.—Under the auspices of the Fruiterers' Company of the City of London, an extensive display of hardy fruits was held in the Guildhall on Monday, Tuesday, and Wednesday last. The show practically resolved itself into an exhibition of Apples, which were of fine quality throughout—very fine quality when the bad season is considered. Pears were also shown well, but not so largely as Apples, while other fruits, including Grapes, Plums, and Nuts, were not very numerous. The exhibition was promoted with the object of extending and improving the cultivation of useful fruit in homesteads and cottage gardens, and it was very gratifying to see the way in which cottagers and tenant farmers had entered, and in many cases they contributed very creditable samples. Some of the fruits shown in many of the larger collections had been grown under glass, but was shown among dishes of outdoor fruit, without any statement of the fact of their having been so grown. Exhibition in that manner is likely to mislead the public as to the merits of the varieties, and should be discontinued. The number of dishes staged was nearly 5000, and the Guildhall, with the picture gallery and other rooms, were filled. The attendance of visitors was very large, and on Monday the show was opened by the Lord Mayor, who attended in state. The arrangements for the regulation of visitors were not all that could be desired, especially on the first day, when the space required by them was largely occupied by the police, and systematic observation of the exhibits was impossible, and notes were taken with difficulty.

The most attractive display was that made by the several trade collections, and in the class for a collection of fifty dishes (thirty Apples, twenty Pears), open to amateurs and gardeners, the prizes offered were a gold Medal, a Silver-gilt, and a Silver Medal, and the competition ran very close indeed. The chief prize was awarded to Mr. G. Woodward, gr. to R. Leigh, Esq., Barham Court, Maidstone, who staged a collection of splendid fruit, uniformly clean, even, and well-coloured, among the best being Stone's, New Hawthornden, Belle Dubois, Emperor Alexander, Brabant Bellefleur, Golden Spire, Flower of Kent, Northern Dumpling, Peasgood's Nonsuch, Minchall Crab, Lady Henniker, Grenadier, Lord Derby, Washington, Bedfordshire Foundling, and Tower of Glamis Apples, all representative fruits; while of Pears, they were equally fine—General Todtleben, Pitmaston Duchess, Doyenné du Comice, Marie Benoist, Beurré Hardy, Glou Morçeau, and Louise Bonne. Mr. Davies, Mote Park Gardens, Maidstone, was the next in merit, having very fine specimens, especially of Apples, of which the best were Queen Caroline, Peasgood's Nonsuch, Gascoignes, Stones, Worcester Pearmain, Gloria Mundi, American Mother, Wellington, Summer Thorle, Melon, Cox's Orange, Cox's Pomona, Bismarck, Lord Derby, Emperor Alexander, Ecklinville, Lemon Pippin, Warner's King, Mère de Ménage, King of the Pippins, and Waltham Abbey; and of Pears, Doyenné du Comice, Comte de Flandres, Durandeau, Hacon's Incomparable, General Todtleben, Colmar d'Ete, Marie Louise, Pitmaston Duchess, Beurré Bachelier, Glou Morçeau, and Urbaniste; while the Silver Medal was awarded to M. J. H. Goodacre, Elvaston Gardens, Derby, who also had a fine even lot of average size of Apples, Lord Suffield, Warner's King, Mère de Ménage, Golden Noble, Ribston, King of Pippins, Tower of Glamis, Lady Henniker, Gravenstein, and Peasgood's Nonsuch, were excellent; and of Pears, Pitmaston Duchess, Louise Bonne, and Doyenné Boussoch. Another very excellent collection was that of Mr. S. Barlow, Stakehill, Manchester, who only just lost a prize, and who included in his lot some truly magnificent specimens of several favourite varieties, but conspicuous among them was a dish of Peasgood's Nonsuch, the fine fruits of which weighed 8 lb. 14 oz. They were undoubtedly the grandest fruits in the show, and an extra prize was deservedly accorded for the collection.

The trade collections were numerous, and very fine fruits were included. The exhibits were grouped in "zones," and the majority fell into the south-eastern division, a few were from the south-west, and none from the north. In the first-named section were Messrs. J. Cheal & Sons, Lowfield Nursery, Crawley, who staged a lot of over sixty dishes chiefly Apples, while Medlars and Crabs were also shown. The Pears were of fine quality and very clean, among them being Beurré d'Amanlis, Uvedale's St. Germain, Duchesse d'Angoulême, Doyenné du Comice, Beurré Superfin, Pitmaston Duchesse, and Doyenné Boussoch; while of Apples, Warner's Seedling, Wellington (good colour), Ecklinville Seedling, Peasgood's Nonsuch, Professor, Hormead's Pearmain, Warner's King, Lord Suffield, Golden Reinette, Blenheim Orange, Worcester Pearmain, and King of Pippins were represented by sound samples.

From Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, S.W., came a capital lot of over seventy dishes of Apples, wonderfully even and sound, Stone's, Winter Hawthornden, Dr. Harvey, Flower of Kent, Benoni, Schoolmaster, Jolly Beggar, Queen, Peasgood's Nonsuch, Stirling Castle, Warner's King, Cobbett's Pearmain, Lord Grosvenor, Nonsuch, Emperor Alexander, Sandringham, Seaton House, Barker's Seedling, Hollandbury, Ringer, King Harry, King of the Pippins, Lord Derby, Bismarck, Blenheim Orange, and Pott's Seedling being specially noticeable.

Messrs. J. Laing & Sons, Forest Hill, S.E., had forty dishes of good-sized, clean-looking Apples, representing the best of the popular varieties, Blenheim Orange, The Queen, Emperor Alexander, Catshead, Stirling Castle, Stone's, Ecklinville, and Bramley's Seedling being well shown.

Some fifty dishes were sent by Messrs. Peed & Son, Lower Norwood, the fruits being of moderate size and bright clean specimens, among which Tower of Glamis, Golden Noble, New Hawthornden, Cellini, Peasgood's Nonsuch, and King of the Pippins looked well.

In the small collection from Mr. Taylor, Osborne Nursery, Hampton, Marie Louise Pear, Ringer, King of the Pippins, Ecklinville, and Pott's Seedling, were best shown.

Mr. A. Wyatt' Halton, Middlesex, sent some finely-coloured specimens of Margil, Duchess' Favourite, Worcester Pearmain, King of the Pippins, Fearn's Pippin, and Manks Codlin.

Specimens of fair average quality were staged by Messrs. W. Balchin & Sons, Hassocks Gate, Sussex, who had Apples only, the best being seen in Gravenstein, Schoolmaster, Pott's Seedling, Cox's Pomona, American Mother, Worcester Pearmain, Gospatrick, and King of the Pippins.

Mr. C. Turner, Royal Nurseries, Slough, showed some well-coloured specimens, among which were King of the Pippins, Landsberger Reinette, Roundway, Wellington, Frogmore Prolific, Fearn's Pippin, Winter Hawthornden, Ecklinville, Golden Noble, and other popular varieties of Apples.

Mr. J. W. Startup, West Farleigh, had a few clean and sound specimens, the best being Lord Derby, Stone's, Dr. Harvey, Warner's King, Kerry Pippin, Woodstock Pippin, and Duchess of Oldenberg.

Mr. Albert J. Thomas, Sittingbourne, sent a large lot of Apples and Pears in fine condition, and Crabs were placed on the tables between the dishes, which gave a pretty effect, Lady Henniker, Warner's King, Wiltshire Defiance, Glory of England, and Worcester Pearmain, being among the best Apples; while of Pears we may select Pitmaston Duchess, Beurré de l'Assomption, Doyenné Boussoch, Catillac, Beurré Bachelier, and Triomphe de Vienne.

Messrs. Paul & Son, Cheshunt, had a collection of fifty-one dishes of well-grown Apples, in fair representative samples of moderate size. The collection embraced the best-known sorts, the finest samples of which were Warner's King, Reinette du Canada, Mabbott's Pearmain, Cockle Pippin, Keswick, Lord Derby, Alfriston, Galloway Pippin, Lady Henniker, Transparent de Croncelles, Duchess of Oldenberg, and Cox's Pomona.

A fine looking collection was sent by Messrs. G. Bunyard & Co., Maidstone, Figs, Medlars, Apricots, Peaches, and Plums, being shown, as well as Apples and Pears; the colouring of the two last was very fine: Washington, Lord Derby, Bismarck, Golden Spire, Lady Henniker, Stone's, and Ecklinville, while Pitmaston Duchess, Beurré Hardy, B. Diel, and Doyenné du Comice, were among the best Pears, and were first-rate samples.

Messrs. William Paul & Son, Waltham Cross, Herts, also sent a nice lot of Apples and Pears of good colour, and average-sized specimens. Doyenné Boussoch, Beurré Clairgeau, and Marie Louise, were the best of the Pears; Lord Derby, Mabbott's Pearmain, Peasgood's Nonsuch, Tom Putt, Waltham Abbey Seedling, Evagil, and Beauty of Kent, were amongst the best Apples.

Mr. Clarke, Albion Nursery, Farnham, had a fine lot of Grapes grown without heat, Madresfield Court, Gros Maroc, Alnwick Seedling, and Royal Ascot, being well-coloured samples. Mr. Reynolds, Gunnersbury Park, sent a lot of capital Melons; while a few Apples and Tomatos came from the Horticultural College, Swanley.

From the Gardens of the Royal Horticultural Society at Chiswick came a collection of Apples and Pears, in fine specimens, about fifty dishes in all, Cox's Orange, King Harry, Stirling Castle, Stone's, Laxton's Seedling, New Hawthornden, Cellini, Ecklinville, Lane's Prince Albert, Golden Noble, Frogmore Prolific, Alfriston, and Beauty of Kent, being among the best Apples shown. Specimens of Cox's Orange, Golden Noble, Cellini, and Kerry Pippin from under glass were also shown, and distinctly labelled; the Currant Tomato, and Aubergines, or Egg fruits were also sent.

In the south-western zone, the collection sent by Mr. J. Watkins, Pomona Farm, Hereford, stood out prominently by reason of the beautiful high colouring of both Apples and Pears; and, indeed, all the specimens in this section were finely coloured. In the lot under notice, Queen Caroline, Crimson Costard, Warner's King, Yorkshire Beauty, Ecklinville Seedling, King of the Pippins, New Hawthornden, Transparent Codlin, Stirling Castle, Cheltenham Pippin, Lord Suffield, Tom Putt, and Golden Noble Apples were splendidly represented; and of Pears, Pitmaston Duchess, Durondeau, Doyenné Boussoch, Souvenir du Congrès, and several Nuts, Damsons, and Plums were equally fine.

Mr. W. Forbes Gibbon, Pershore, sent a few fine samples, including the following Apples: King of the Pippins, Cornish Gilliflower, Nonpareil, Kerry Pippin, and Blenheim Orange. Mr. H. Berwick, Sidmouth, Devon, had fifty-six dishes of richly-coloured Apples, of fair size and very clean; Eck-

linville, Worcester Pearmain, Emperor Alexander, Peasgood's Nonsuch, Autumn Pearmain, Warner's King, Stirling Castle, New Hawthornden, Lane's Prince Albert, King of the Pippins, and Flower of Kent, being the best.

Messrs. Jarman & Co., Chard, Somerset, had a large lot of fruit of average merit, rather rough, but some good samples were to be seen, among them being Nelson's Codlin, Alfriston, Catshead, Brabant Bellefleur, Royal Somerset, and Emperor Alexander.

The English Fruit and Rose Co., Hereford, also had a large collection on view, some being shown in baskets, and some very fine specimens were included, especially of Prince Albert, King of Pippins, Stirling Castle, Wellington, Grenadier, Golden Spire, Cox's Pomona, and Peasgood's Nonsuch; Gloria Mundi, Lord Suffield, Golden Noble, Frogmore Prolific, Stirling Castle, Stone's, Cox's Pomona, and Manx Codlin Apples. Plums, Nuts, and a few Pears were also staged, and all of very high quality.

The members of the British Fruit Growers' Association were all grouped together, and a good-sized display was made, but they were placed in a badly lighted end of the hall, and examination was difficult. Among the members who had contributed specimens were Mr. W. H. Divers, Ketton Hall Gardens, Stamford, who had fine fruits of Queen Caroline; Messrs. Dickson, Limited, Chester, whose King of Pippins, Stirling Castle, Ecklinville, Golden Noble, and Warner's King were capital; Mr. Harris, Alnwick Gardens, Alnwick, who had small fruits, but Tyler's Kernel was fairly good; Messrs. Jeffries & Son, Cirencester, with Pott's Seedling and King of the Pippins; Mr. G. Cole, Evesham, with fine specimens, including Duc d'Aumale, Golden Noble, Warner's King, and Blenheim Orange; Mr. H. W. Ward, Longford Castle Gardens, Salisbury, who had fine Pears, especially of Uvedale's St. Germain; Mr. W. Roupell, Streatham, had good samples of Golden Noble, Peasgood's Nonsuch, Queen, and King of the Pippins; Mr. P. Crowley, Croydon, sent very fine specimens of the Queen; Mr. Hammond, Brentwood, had good Monarch Plums, and several culinary Apples; and the English Fruit and Rose Co. Hereford, sent a small lot; but by far the finest contribution was from Messrs. T. Rivers & Son, Sawbridgeworth, who staged large handsome fruits of the following Apples:—Lady Hamilton, Lord Derby, Hollandbury, King of Tomkin's County, Belle Dubois, Cox's Orange, Reinette du Canada, Lane's Prince Albert, King of the Pippins, The Queen, Washington, Wadhurst, and Wellington; and of Pears, which were represented equally well, Bergamot, Conference, Princess, Pitmaston Duchess, Marie Benoist, Beurré Bachelier, and Doyenné du Comice.

In the class open to amateurs and gardeners, within 7 miles of the Royal Exchange, for twelve dishes (or fewer) of hardy fruit, Mr. W. Roupell, Harvey Lodge, Roupell Park, S.E., was placed 1st, leading easily with finely-grown specimens of Apples. Grenadier, Queen, Lady Henniker, Peasgood's Nonsuch, Pott's Seedling, Cox's Orange, Cox's Pomona, Bramley's Seedling, and Lord Grosvenor, being the best of those staged, and were very fine; the 2nd place was accorded to Lady Whitehead, Catford Bridge, S.E., showing King of the Pippins and Ribston as her best.

Grapes were well provided for in three classes, and a very fine lot of bunches were forthcoming. The Silver Medal offered for six bunches of white Grapes, three Muscats and three others, went to Mr. J. Crawford, gr. to Colonel Thorp, Coddington Hall, Newark-on-Trent, who had excellent samples of Muscat of Alexandria, Royal Vineyard, Mrs. Pearson, and Golden Queen; 2nd, Mr. Iggulden, Marston Gardens, Frome, following closely. Black Grapes (six distinct), were of splendid quality, the Silver Medal being awarded to Mr. Allen, Gunton Park, Ipswich, with Black Hamburgh, Gros Maroc, Alnwick Seedling, Alicante, and Lady Downes. Mr. G. Reynolds, Gunnersbury Park Gardens, Acton, was a very near 2nd, with grandly-finished Gros Maroc, Alnwick Seedling, and Black Hamburgh. Mr. Goodacre exhibited in both classes, but was disqualified, as he showed six bunches in two varieties in each case; however, his magnificent bunches of Gros Colmar, White Tokay, and Muscats won for him extra prizes.

Competition in the class for Tomatos was not so keen as might have been expected, and the 1st prize was withheld. Messrs. J. Carter & Co., High Holborn, contributed a capital collection of several varieties, not for competition.

Cottagers entered largely into the competitions provided for them, and the same may be said of the tenant-farmers. Apples were best shown, and, indeed, most provision had been made for them. Those from the south-eastern zone came forward in the best style, and the fruits exhibited were highly satisfactory in all quarters, except from the north, which was only natural.

In the gardeners and amateurs classes for Apples and Pears there were exceedingly large entries, especially in the south-eastern zone, and in the class for twelve dishes of dessert Apples there were twenty-six in that section alone, the prize going to splendid fruits from Mr. G. Woodward, clean and richly coloured, King of the Pippins, Wealthy, Washington, Cox's Pomona, Cox's Orange, Ribston and Calville Rouge being the best.

Mr. J. Turner, gr. to R. H. Combe, Esq., Farnham, came 2nd, following closely, as might be expected in so large a competition: indeed it was a difficult matter to gauge their respective merits in all cases. Claygate Pearmain and Cox's Pomona were fine.

In the northern zone, Mr. Crawford, Coddington Hall Gardens, was the only exhibitor, and was awarded 1st.

In the south-western zone, Mr. Wright, gr. to C. Lee-Campbell, Esq., Glewston Court, Hereford, was 1st, showing very large specimens of King of the Pippins, Cox's Orange, Worcester Pearmain, Cellini, and Blenheim Orange; 2nd, Mr. Parker, gr. to Mrs. Evans, Moreton Hall, Hereford, having smaller but very richly coloured King of the Pippins, Cellini, Worcester Pearmain, and Stoke Edith Pippin.

There were as many as thirty-four entries in the class for twelve culinary Apples in south-eastern zone, Mr. Woodward again leading, showing grandly, the best fruits being Golden Spire, Belle Dubois, Peasgood's Nonsuch, Stone's, Warner's King, Flower of Kent, and Emperor Alexander; 2nd, Mr. W. S. Skinner, Monchelsea, had remarkably clean fruits of large size and even, Stone's, Peasgood's (good colour), Cox's Pomona, Warner's King, and Lady Henniker being the best.

Messrs. Parker and Wright were 1st and 2nd in the order named in the south-west zone, the former having Golden Noble, in beautiful form; Pott's Seedling, Stone's, and Peasgood's Nonsuch, while Mr. Wright sent Ecklinville, Warner's King, Stirling Castle, and Frogmore Prolific.

In the northern zone, Mr. Ingram, Belvoir Castle Gardens, Grantham, was 1st, with good average specimens — Warner's King, Peasgood's Nonsuch, Golden Noble, and Blenheim, but they were not first-rate fruit.

There were forty-four entries in the class for three dessert and three culinary Apples, and Mr. F. Bridger, Penshurst Place Gardens, Kent, was 1st in the south-east zone, and it goes without saying, that the fruit was grand in all respects. Warner's King, Peasgood's Nonsuch, Wealthy, Bismarck, and King of Tomkins' County, were the best. Mr. T. Turton, Maiden Erleigh, Reading, was 2nd, Mère de Ménage, Cox's Orange, King of Pippins, and Waltham Abbey Seedling, being fine.

In the south-western zone, Messrs. Parker and Wright again stood in that order, showing as before. Mr. S. Barlow, Stakehill, Manchester, showed grandly in the northern zone, and was consequently placed 1st, Peasgood's Nonsuch, Ribston, and Cox's Pomona being capital samples.

The exhibition of Pears was not so strong, and in the class of twelve dishes, Mr. Woodward was again leading. Doyenné du Comice, Pitmaston Duchess, General Todtleben, Louise Bonne, Brockworth Park, Conseilleur de la Cour, being among the best of a generally clean lot.

Mr. C. Blick, gr. to Martin R. Smith, Esq., Hayes Common, Kent, was 2nd, with a cleaner, if smaller, lot of fruits. Duchesse d'Angoulême, Conseilleur de la Cour, Beurré Diel, Magnate, and Doyenné du Comice, being shown well, but lacking in colour.

Mr. Iggulden led in the south-west zone. Doyenné Boussoch, Doyenné du Comice, Louise Bonne, Pitmaston, and Conseilleur de la Cour being fine.

Mr. J. Hunter, Lambton Castle, Fence Houses, Durham, was 1st in the northern zone, having a fine lot, Pitmaston Duchess, Beurré Diel, Doyenné du Comice, and Glou Morçeau showing up well.

For the best six dessert Pears, Mr. Hunter again led in his zone with Beurré Superfin and Pitmaston Duchess well represented; and Mr. Iggulden was again 1st in the south-western zone, Doyenné Boussoch, Doyenné du Comice, and Van Mons. Leon le Clerc being grand; Mr. Parker was a good 2nd, having Albertiana and Pitmaston Duchess well shown.

In the south-eastern zone, the prize went to Mr. Allan, gr. to Lord Suffield, Gunton Park, Ipswich, where Glou Morçeau, Marie Louise, Durondeau, and Pitmaston Duchess, were capital. Mr. R. Smith, gr. to R. Cox, Esq., Ware, Herts, was a decided 2nd, Duchess d'Angoulême being the best.

Mr. Woodward (south-eastern zone), took 1st for cooking Pears, having Catillac, Gen. Todtleben, Vicar of Winkfield, and Triomphe de Jodoigne, well shown.

For six dishes of hardy fruits (not Apples or Pears), Mr. Sheppard, Woolverstone Park Gardens, Ipswich, was placed 1st, for Damsons, red Currants, Brown Turkey Figs, Filberts, Reine Claude de Bavay Plums, Victoria Nectarines, and Late Admirable Peach—all excellent; and Mr. Woodward was 2nd, also showing well. Mr. G. Trinder showed some Héricart de Thury Strawberries in this class.

Many lots which are not alluded to were of almost equal merit, and extra prizes were awarded in most of the foregoing classes, but our space will not allow of their mention.

CRYPTOGAMIC, OF SCOTLAND.

This Society held its sixteenth annual conference at Boat-of-Garten, Inverness-shire, on the 23rd, 24th, and 25th ult. The place was selected as the most central for excursions into fields which have been rendered famous in the annals of mycology by the Rev. Dr. Keith, of Forres, who had the honour of being elected President of the Society for the second time. There was a good muster of members, considering the distance many had to travel, and good work was done. The Society had the pleasure of again welcoming Mr. Spenser Perceval from England. Mr. Nicholson, of Kew Gardens was also present, and was enrolled as a member.

Boat-of-Garten is beautifully situated on the richly wooded banks of the Spey, between Aviemore and Grantown. On the north are the Monadhliadh hills, the range between the Findhorn and the Spey, and on the South the Cairngorm Mountains. The names of Ben Muich Dhui and Cairngorm are familiar to lovers of Scottish mountain scenery, but they scarcely exceed in grandeur two of the less widely known giants of the range—Braeriach and Cairn Toul. Indeed, Braeriach, which is 4248 feet in height, and only 48 feet under the peak of Ben Muich Dhui, is perhaps the finest of the range, from the imposing grandeur of its cliffs and corries. These great mountains were seen to advantage during our stay: now clear from base to summit, again half-concealed and half-revealed by drifting clouds, and at times with just enough of wreathing mist to "spiritualise" them. Space, however, forbids us to linger on the glories of these mountains. Tuesday, the 23rd, was spent in the woods around Boat-of-Garten. The first fungus which was gathered proved to be new to Britain, Agaricus (Clitocybe) Curtisi, Fr. It was discovered by Mr. William Stewart, of Glasgow. The most enjoyable excursion was that of Wednesday, the 24th, to the old Pine forest of Rothiemurchus, which is near the throat of the Learg Ghruamach, a wild pass between Speyside and Braemar. Vast stretches of native Pine have been sacrificed to the demand for money; but a few of the old trees still survive, none, however, of the dimensions of many which are preserved in the forests of Rannoch and of Mar. As we had started early in the morning, considerable time was spent in search before a halt was made at Loch-an-Eilan, an exquisite little sheet of water embosomed among wood under the shadow of the mountains. On its solitary island there are the ruins of a castle, which was once the stronghold of the Wolf of Badenoch. There is a remarkably fine echo from its wall, and various were the unearthly sounds that were answered back to the shore. A corner tower of the ruin was long a favourite resting-place of the Osprey. It is now deserted. Two years ago, a third appeared on the scene, and the two females fought till one fell a victim in the strife. The remaining pair—and, let us hope, the original pair, for years ago the writer watched their devotion to each other in their lonely retreat—left the place, and built in a Pine tree at some distance from the early home. In this beautiful spot the party rested, with the satisfaction of having found some of the special objects of their search. Led by Dr. Keith, to whom the ground is as familiar as it is dear, we had no difficulty in gathering Hydnum imbricatum, Linn.; H. fragile, Fr.; H. scrobiculatum, Fr.; and Lindbladia effusa, Ehr.; enough to make the day a memorable one to those who had not previously found these rare species. On the homeward journey, Trametes pini, Fr., was

also secured in fine condition, after various attempts to reach it at the height at which it grew on the trunks of the Pine. On Thursday, the 25th, the excursion was to the woods of Grantown, and this also was made memorable by gathering very characteristic specimens of Agaricus (Armillaria) aurantius, Schaeff. The species was first discovered in Britain by Dr. Keith, and identified by the late Rev. M. J. Berkeley. It was figured from Dr. Keith's specimens of Mr. Worthington Smith, and subsequently copied by Mr. M. C. Cooke in his *Illustrations of British Fungi*. In the index to the first volume of the latter work, the figure is referred to as A. robustus, A. and S., while A. aurantius is merely named with a mark of interrogation. This error, which was supposed to be a correction, must now be rectified, the specimens recently found having determined the plant originally discovered by Dr. Keith to be the true A. aurantius of Schæffer. In the figure of Smith, the scales on the stem are represented as forming a sheath, terminating in a ring. In the specimens recently gathered, the scales are closely distributed over the stem in almost concentric circles, and terminate in an annular zone. On account of the doubt which existed at the time, the species was omitted from the writer's work on *British Fungi*, reference being made to Cooke's supposed correction under the description of A. robustus, A. and S. It must now be added as having been previously recorded by Dr. Keith in his *Fungi of Morayshire*.

In addition to those already mentioned, the following are a few of the less common and more interesting species, which were gathered during the excursions:—Agaricus virosus, Fr.; A. mappa, Fr.; A. bulbiger, A. and S.; A. spumosus, Fr.; Cortinarius claricolor, Fr.; C. multiformis, Fr.; C. violaceus, Fr.; C. orellanus, Fr.; C. helvolus, Fr.; Gomphidius glutinosus, Fr., var. roseus; Paxillus atrotomentosus, Fr.; Hygrophorus cerasinus, Berk.; Lactarius lilacinus, Lasch.; Russula Linnæi, Fr.; R. decolorans, Fr.; R. lutea, Fr.; and Cantharellus umbonatus, Fr.

The business meeting of the Society was held on the evening of Tuesday, the 24th. After the transaction of ordinary business, a paper on the "Revision of Scotch Pyrenomycetes" was submitted by Professor J. W. H. Trail. This will form a valuable contribution to the mycological literature of the Society, and will in due course be in the hands of the members. Considerable discussion followed regarding the extension of the Society's work. The proposals, which have been approved of, embrace various provisions, having for their object, reports of the occurrence of Cryptogamic plants, and the compilation of catalogues relating to each department of Cryptogamic botany. These proposals will be communicated to the members. We may take this opportunity, however, of inviting the Secretaries of local Biological Societies to furnish to the Crytogamic Society particulars of all Scottish records of Cryptogamic plants which may be brought under their notice. These may be communicated to "The Secretary of the Cryptogamic Society of Scotland, Glamis, Forfarshire. On Friday, the 26th, amid many regrets at parting, the members bade farewell. *J. S, Glamis.*

IVY-LEAF PELARGONIUMS.

These plants have of late years made such rapid strides in regard to size of bloom and the number of good varieties, that a few notes may not be out of place. The collection grown in the Society's garden at Chiswick this year was a very fine one, and I have envied the Society its possession of so much beauty. Where cut blooms is in large demand, the plants are of great service; and I have this season grown a good number of plants for cut blooms, and intend to grow in future a larger number, and fewer of the regal and spotted-flowered varieties. The Ivy-leaved Pelargoniums do not last long when grown in heat; therefore, for cutting purposes, a cool place close to the glass is best, and then the plants will be sturdy, and the flowers of good colour. A splendid example of well-grown plants of this section was to be seen in the well-kept gardens at Warren House, Kingston, where Mr. Woodgate had plants on the lawn from 6 to 10 feet high, which were trained round a trellis, and, in their season, were a mass of bloom, and objects of great beauty.

Mr. Woodgate winters his plants in a cold house, and turns them out much earlier than gardeners usually turn Pelargoniums out-of-doors. I find too much pot-room not to be beneficial, but rich food is good for the plants as soon as the pot is full of roots, and the flower-trusses showing, but the feeding must not be neglected if a long succession of bloom is desired. It is remarkable how well the plants will bloom in small pots if liberally supplied with water and liquid manure. I have got the plants to come in for cut-blooms through September and October by cutting back the early plants, and partially shaking them out and repotting them, afterwards keeping them close in a cold frame, and getting a good growth by that date.

Young plants raised from cuttings in the summer, and the bloom kept pinched off, finally potting them in 6-inch pots, come in very useful with the early flowering bulbs and Chrysanthemums. The best of the single varieties that I have grown are Victoria, a large flower, partaking somewhat of the character of that grand double variety, Souvenir de Charles Turner; it is of a pink colour, with short-jointed wood, and is very free; Mrs. H. Cannell is a useful variety, with deep lilac flowers; Bridal Wreath is white, with a delicate pink centre—it is a pretty cut flower for small vases, with a frond of Maidenhair Fern as a background; Masterpiece has large trusses of dark magenta-coloured flowers—and it should find a place in every collection; Le Vésuve is a fine bloomer, of a scarlet colour; Plutus is a good purple-crimson; Dolly Varden has a neat compact growth, but it is not so useful as others for cutting; Multiflora is a free-growing variety, with large, bright pink trusses.

The best doubles I have grown are Souvenir de Charles Turner, which is a vigorous bloomer, with large trusses of bright carmine-coloured flowers; some of the pips in a well-grown plant being 2 to 3 inches across. It is a fine plant for covering a large space, and for a wall in any light open position it would give a fine effect. Sarah Bernhardt, A. F. Barron, Comte H. de Choiseul, Candeur, and La Florifere, and the older Mad. Crousse, are all good. Galilee is a good pink form, producing an abundance of bloom; Louis Thibaut and Flambeau are good, of a deeper colour; Mme. Thibaut is a free-growing pink variety of great merit; also La France, Berthelot, Murillo, and Hofgärtner Eschler are good varieties, and should find a place in all collections. There are also many more good forms in the double section I could name; but the above I have grown, and they are most useful varieties. *George Wythes, Syon House, Brentford.*

FOREIGN CORRESPONDENCE.

CALOCHORTUS MADRENSIS.

The Calochorti certainly rank among the most beautiful and choice of liliaceous plants, and it is to be hoped that the figure given in your last issue of the new and pretty C. madrensis may induce some of your readers to pay special attention to this lovely genus, and to this species in particular, it being one that is of great value to the gardener. The bright orange-yellow colour of the flowers, which are produced in the greatest abundance, make it quite a desirable little plant, this colour being somewhat rare among summer-flowering bulbs.

It has been blooming here continuously for more than two months. Another new and very choice species is C. Howelli; this one belongs to the group of large-flowered Californian Calochorti, and has upright pure-white flowers, marked with a velvety, haired, blue or violet-coloured spot on the base of each petal. I may add that I have also succeeded in getting a supply of the extremely rare and truly magnificent C. Kennedy, a very large-flowered, orange-coloured species from the sandy deserts of southern California. Two things are essential to ensure full success in the culture of these lovely bulbs—these are, a light sandy soil, where water cannot long be stagnant, and a position exposed to the sun from morning till night. So far as my experience goes, they are all nearly hardy, and do not at all require the fostering care which is usually bestowed on them. In my garden they are treated and planted in nearly the same way as Hyacinths and Tulips, the only and chief difference being that, when the flowers are beginning to expand, frame-lights are put over the beds, and these are not taken away before the foliage has completely died down. The plants are thus guarded against heavy rains, and the greater amount of warmth afforded by the open glass cover causes the bulbs to ripen off better, and give offsets more abundantly, than when the plants are grown without protection. *C. G. van Tubergen, Jun., Zwanenburg, Haarlem.*

Rhododendron eximium.

Since 1887 a grafted plant of this species flowered every year here, but now the plant is dead. Grafted plants of the stronger-growing Himalayan species of Rhododendron are apt to die after flowering for a few years. *O. Forster, Lehenhaf.*

TREES AND SHRUBS.

FRAXINUS MARIESII.

This pretty-flowering Ash was introduced from North China by Mr. Maries, Messrs. Veitch's collector, some years ago, but it is still very scarce in gardens. Its panicles of white flowers are freely produced, and the leaves are about 5 inches long, with two pairs of leaflets and one odd one, the green colour being beautifully rich.

F. aucubæfolia

is the prettiest Ash that we have in gardens. It is very distinct, having leaves blotched with rich yellow, and is a very even grower, and if planted near water, and in the full sun, it has an excellent effect. Both of the above are readily increased by grafting in March in the open air on three and four-year old stocks of the common Ash, about 6 inches from the ground, and when they have grown about 5 or 6 inches it will be advisable to stake them until the shoots are able to stand rough weather. It is a native of North America.

Leycesteria formosa.

This graceful plant is much neglected in gardens. Its pretty white flowers are hung in pendulous racemes, and it has rich purple coloured bracts and berries, making it a very desirable plant. It may be propagated in January, by cuttings made about 9 inches long, planted 7 inches deep, leaving 2 inches above ground, in a sheltered border; or young wood may be taken at the end of August, when it is half ripe, and inserted round the sides of 5-inch pots in rather light soil, and placed in frames with a moderately warm temperature, when they will soon root, and the following year may be planted out. It is a native of the Himalayas. *H.*

Green-berried Elder.

A correspondent in East Essex obligingly sends us a specimen of the Green-berried Elder, which is certainly a rarity in gardens. The berries are rather larger than the ordinary fruits, and are of an olive-green colour, and translucent. It is the Sambucus nigra var. virescens of De Candolle, the S. virescens of Desfontaines.

FLORISTS' FLOWERS.

PHLOX DRUMMONDII.

The late moist summer served to bring out in a remarkable degree the beauty and usefulness of Drummond's Phloxes as bedding plants, in Mr. Barlow's garden at Stakehill, Manchester. The improved forms of Phlox Drummondii belong to the Continent. English raisers have not attempted its

improvement in this country, but the continental seedsmen have done wonders in recent years, and there are now several types.

There is the ordinary form of Drummond's Phlox, much improved to what it was a dozen years ago, with its self-coloured, Auricula-eyed, and striped varieties; but most popular among English gardeners of all classes is what is known as the grandiflora strain—scented, large-flowered types of fine form and great beauty, with flowers as large and as finely formed as those of the perennial Phloxes. Among them there is one startling beauty, named splendens grandiflora, of a vivid vermilion-crimson colour, with small white eye. This makes a most effective bedding-plant, and its flowers are produced with great freedom. A sub-section has been formed of flowers having bold white centres, termed Stellate varieties, though the white centre partakes more of the character of the rounded disc, rather than star-shaped. These are very attractive bedding varieties, and go well with the bright-coloured self-flowers when mixed together.

Of late years there have been introduced fimbriated and cuspidate strains of the ordinary Phlox Drummondii. In some the pips are deeply fringed; in others they are margined with irregular spines, some short and some long. They are more curious than beautiful, but they are certainly novel, and it is not a little remarkable that the peculiar character of these new types should be in such marked opposition to the smooth-edge, so much favoured by the English florists. But they are scarcely attractive as bedding-plants, although there is among them a purple form that is decidedly good and effective. The types Heynholdi, Graf Gero, and Compacta, are all of dwarf growth, but the two former lack the vigorous constitution belonging to the ordinary strain, and do better in pots. But these types, evidently popular in Germany, are scarcely likely to find a permanent place in English gardens.

The Phlox Drummondii is of easy culture, and it well repays generous treatment. Seeds can be sown under glass, and the plants placed out in beds when large enough. They should be allowed space for development, and some of the leading shoots pegged down, so as to impart to the bed as symmetrical an appearance as possible. *R. D.*

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending October 4, is furnished from the Meteorological Office:—

"The *weather* over England and the southern parts of Ireland has been fine for the time of year; over the north of Ireland it has been wet, windy, and unsettled; while in Scotland it has been windy and exceptionally wet. (See paragraph on Rainfall).

"The *temperature* has been a little below the mean in 'Scotland, N.,' and equal to it in the 'Channel Islands,' but in all other parts of the kingdom an excess is shown, varying in amount from 1° to 3°. The highest of the maxima, which were recorded either at the beginning or end of the period, ranged from 74° in 'England, S.W.,' and 73° in 'England, S.,' to 64° in 'England, N.W.,' and 60° in 'Scotland, N.' The lowest of the minima were recorded generally on October 2, when they varied from 31° in 'Ireland, S.,' 32° in 'Ireland, N.,' and 33° in 'Scotland, N.,' to 38° in 'England, E.,' and to 43° in the 'Channel Islands.'

"The *rainfall* has been more than the mean in Scotland 'Ireland, N.,' and 'England, N.W.'; considerably less in all other districts. In the north-western parts of Scotland the fall has been extremely heavy; at Glencarron the total fall for the week was 11·20 inches, and at Fort William 7·21 inches; while on Thursday as much as 5·90 inches was collected in the gauge at the former station, and 3·54 inches at the latter.

"*Bright Sunshine* has been very little prevalent over the northern and north-western parts of the kingdom, but in the more southern districts a fair amount has been recorded. The percentage of the possible duration ranged from 7 to 20 in Scotland, from 23 to 38 in Ireland, and from 26 to 40 over England."

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending Oct. 4.	Accumulated. Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 —	45	0	+ 151	— 74	23 +	197	41.0	7	25
2	2 +	63	0	— 1	— 60	10 +	165	24.0	18	30
3	3 +	90	0	+ 91	— 93	4 —	140	18.7	26	30
4	3 +	99	0	+ 7	— 40	6 —	139	17.7	49	38
5	3 +	97	0	— 19	— 30	7 —	135	16.9	44	33
6	3 +	105	0	— 4	— 69	6 —	134	20.8	43	36
7	2 +	78	0	+ 29	— 73	8 +	170	38.7	20	32
8	2 +	88	0	+ 70	— 81	4 +	159	25.2	29	30
9	1 +	94	0	— 44	+ 11	8 —	161	27.3	37	36
10	2 +	79	0	+ 36	— 56	6 +	186	26.7	23	30
11	1 +	90	0	+ 37	— 15	5 —	174	30.1	38	33
12	0 av.	106	0	+ 21	— 22	8 —	155	24.0	31	44

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

Obituary.

Mr. Enoch Harvey.—We regret to announce the death of Mr. Enoch Harvey, solicitor, of Riversdale, Aigburth, Liverpool, which occurred through misadventure at the Mersey Road railway station, on October 1. Besides occupying a leading position in the legal profession in Liverpool, Mr. Harvey was an ardent horticulturist, and an eminent cultivator of Orchids, and his collection of the same have been repeatedly noticed in these pages.

MARKETS.

COVENT GARDEN, October 9.

Our market continues very steady; a quiet business doing, with little variation. *James Webber, Wholesale Apple Market.*

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Ericas, various, doz.	8 0-18 0
Aspidistra, doz.	18 0-42 0	Ferns, in var., doz	4 0-18 0
— speci. plants, each	7 6-10 6	Ficus elastica, each	1 6- 7 0
Asters, per doz.	4 0- 9 0	Foliage plants, various, each	0-10 0
Begonias, per doz.	4 0- 6 0	Fuchsia, per doz.	3 0- 6 0
Bouvardias, p. doz.	9 0-18 0	Heliotrope, per doz.	4 0- 6 0
Chrsanthem., p. doz.	4 0 18 0	Hydrangeas, doz.	9 0-18 0
— specimen plants, each	2 6- 5 0	Liliums, various, per dozen	9 0-18 0
Coleus, per dozen	2 0- 6 0	Marguerites, doz.	6 0-12 0
Cyperus, per dozen	4 0-12 0	Mignonette, per doz.	3 0- 6 0
Dracæna terminalis, per dozen	30 0-60 0	Palms in variety, each	2 6-21 0
— viridis, per doz.	12 0 24 0	Pelargoniums, scarlet, per dozen	3 0- 6 0
Euonymus, in var., per dozen	6 0 18 0	— per doz.	6 0-12 0
Evergreens, in var., per dozen	6 0-24 0	Solanums, per doz.	9 0-15 0

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples, ½-sieve	3 6- 7 0	Peaches, dozen	1 0- 8 0
Cobs, Kent, 100 lb.	50 0-52 6	Pine-apples, St. Michael, each	2 0- 6 0
Grapes, lb.	0 9- 2 9	Plums, ½-sieve	7 0-11 0
Lemons, per case	20 0-40 0		
Melons, each	0 6- 2 0		

Vegetables.—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, each	0 4- 0 6	Mushrooms, punnet	2 0- ...
Beans, French, lb.	0 4- 0 6	Mustard and Cress, punnet	0 4- ...
Beet, red, per dozen	1 0- 2 0	Onions, per bunch	0 5- ...
Carrots, per bunch	0 6- ...	Peas, per quart	1 0- ...
Cauliflowers, each	0 3- ...	Parsley, per bunch	0 4- ...
Celery, per bundle	1 6- 2 0	Shallots, per lb.	0 6- ...
Cucumbers, each	0 4- 0 6	Spinach, per bushel	2 0- ...
Endive, per dozen	2 0- ...	Tomatos, per lb.	0 9- ...
Herbs, per bunch	0 4- ...	Turnips, per bunch, new	0 4- ...
Lettuces, per dozen	1 6- ...		

Potatos.—There is a demand only for the best samples; in prices there is no alteration from last week's quotations. *J. B. Thomas.*

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun.	2 0- 4 0	Mignonette, 12 bun.	1 0- 3 0
Asters, 12 bunches	3 0- 8 0	Pelargoniums, scarlet, 12 spr.	0 3- 0 6
— French, bunch	1 0- 1 6	— dozen sprays	0 4- 0 9
Bouvardias, per bun.	0 6- 1 0	Primulas, double, 12 sprays	0 6- 1 0
Callæthiopica, 12 bl.	2 0- 5 0	Poppies, various, doz. bunches	1 0- 2 0
Carnations, 12 blms.	1 0- 2 0	Pyrethrum, 12 bun.	2 0- 4 0
— 12 bunches	4 0- 6 0	Roses, Tea, per doz.	0 6- 1 6
Chrysanth., 12 bun.	3 0- 6 0	— coloured, dozen	1 0- 1 6
— 12 blooms	1 0- 3 0	— red, per 12 bun.	2 0- 6 0
Cornflower, 12 bun.	1 6- 3 0	— Safrano, dozen	1 0- 2 0
Dahlias, 12 bun.	2 0- 4 0	— outdoor, 12 bun.	1 0- 3 0
Eucharis, per dozen	2 0- 4 0	Stephanotis, 12 spr.	3 0- 5 0
Gardenias, 12 blooms	2 0- 4 0	Tuberoses, 12 blms.	0 3- 0 6
Gladiolus, 12 bun.	6 0-12 0	Violets, 12 bun.	0 9- 2 0
Heliotropes, 12 spr.	0 6- 1 0	— Parme, Fr., bun.	2 6- 3 6
Lilium, var., 12 bl.	0 6- 4 0	— dark, Fr., bun.	1 0- 1 6
Maiden Hair Fern, do	4 0- 9 0		
Marguerites, 12 bun.	3 0- 6 0		
Michaelmas Daisy, 12 bun.	4 0- 8 0		

Orchid-bloom in variety. Not over plentiful.

SEEDS.

London: *Oct.* 8.—Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, London, E.C., write that to-day's market was sparingly attended, with but little business doing. All descriptions of Clover seeds are, for the moment, quiet, but firm. For Blue Peas the tone is steadier, fine, large, sound samples being still very scarce. Winter Tares find buyers at the temptingly low rates now current. The new Haricot Beans are both good and cheap. For bird-seeds the sale is slow. Dutch Linseed meets with increasing favour. There is no alteration this week in either Mustard or Rapeseed.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending October 4 and for the corresponding period in last year:—1890, Wheat, 31*s.* 2*d.*; Barley, 29*s.* 5*d.*; Oats, 17*s.* 5*d.* 1889, Wheat, 29*s.* 3*d.*; Barley, 29*s.* 4*d.*; Oats, 16*s.* 8*d.*

FRUIT AND VEGETABLES.

Spitalfields: *October* 8.—Good supplies of fresh vegetables, Potatos, &c.; demand moderate. Fair supply of foreign fruit, but English fruit scarce. Trade for same brisk. Prices: Fruit: English Apples, 5*s.* to 10*s.* per bushel; Pears, 3*s.* to 6*s.* per half-sieve; English Tomatos, 3*s.* to 4*s.* per peck; foreign do., 1*s.* to 1*s.* 6*d.* per box. Vegetables: Savoys, 2*s.* to 3*s.* per tally; Cabbages, 1*s.* to 1*s.* 9*d.* do.; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Brussel Sprouts, 1*s.* 6*d.* to 2*s.* per half-sieve; Spinach, 1*s.* to 1*s.* 6*d.* per bushel: Cauliflowers, 9*d.* to 1*s.* 6*d.* per dozen; Scarlet Beans, 1*s.* 6*d.* to 2*s.* 6*d.* per bushel; Vegetable Marrows, 1*s.* 6*d.* to 2*s.* per tally; Radishes, 1*s.* 6*d.* to 3*s.* do.; Greens, 1*s.* to 1*s.* 6*d.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Carrots, 1*s.* 6*d.* to 2*s.* 3*d.* do.; Parsley, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Celery, 4*d.* to 8*d.* per bundle; Horse-radish, 1*s.* 1*d.* to 1*s.* 3*d.* do.; Beetroots, 2*d.* to 4*d.* per doz.; Parsnips, 4*d.* to 8*d.* per score; Cos Lettuces, 6*d.* to 1*s.* per score; Cabbage Lettuces, 4*d.* to 8*d.* per dozen; Endive, 1*s.* to 1*s.* 6*d.* do.; Leeks, 1*s.* 6*d.* to 2*s.* do.; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; English Onions, 4*s.* 6*d.* to 5*s.* per cwt.; Spanish do., 7*s.* to 7*s.* 6*d.* per case; Belgian do., 3*s.* 3*d.* to 3*s.* 6*d.* per bag of 110 lb.; Dutch do., 3*s.* to 4*s.* do.; Carrots, 20*s.* to 45*s.* per ton; frame Cucumbers, 1*s.* to 2*s.* 6*d.* per dozen; natural do., 6*d.* to 9*d.* do.

Stratford: *October* 8.—The supply has been good during the past week, and a brisk trade done at the undermentioned prices:—Cabbages, 2*s.* 6*d.* to 4*s.* per tally; Cauliflowers, 3*s.* to 6*s.* do.; Turnips, 2*s.* 6*d.* to 3*s.* per dozen bunches; do., 30*s.* to 40*s.* per ton; Carrots, 50*s.* to 55*s.* do.; Mangels, 17*s.* to 20*s.* do.; Swedes, 18*s.* to 21*s.* do.; Onions, English, 90*s.* to 110*s.* do.; do., Dutch, 4*s.* to 4*s.* 6*d.* per bag; Apples,

English, 3*s.* to 4*s.* per bushel; Watercress, 7*d.* per dozen; Dutch Apples, 14*s.* to 18*s.* per cask; Celery, 7*s.* to 9*s.* per dozen rolls; Walnuts, 4*s.* to 5*s.* per prickle; Pears, English, 5*s.* 6*d.* to 7*s.* 6*d.* per bushel; Carrots, 2*s.* 6*d.* to 3*s.* per dozen bunches.

POTATOS.

Borough and Spitalfields: *October* 7.—Hebrons, 60*s.* to 90*s.*; Regents, 50*s.* to 70*s.*; Early Rose, 50*s.* to 60*s.*; Magnums, 52*s.* 9*d.* to 75*s.*; Imperators, 55*s.* to 80*s.* per ton.

Spitalfields: *October* 8.—Quotations:—Magnums, 45*s.* to 70*s.*; Regents, 50*s.* to 80*s.*; Champions, 40*s.* to 55*s.*; Imperators, 50*s.* to 70*s.*; Hebrons, 40*s.* to 65*s.*; Early Rose, 40*s.* to 45*s.* per ton.

Stratford: *October* 8.—Quotations:—Magnums, light, 50*s.* to 70*s.*; do., dark, 50*s.* to 60*s.*; Imperators, 50*s.* to 70*s.*; Regents, 50*s.* to 65*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the metropolitan markets during the past week:—Clover, prime, 80*s.* to 105*s.*; do., inferior, 40*s.* to 75*s.*; hay, best, 60*s.* to 87*s.*; inferior do., 20*s.* to 50*s.*; and straw, 24*s.* to 40*s.* per load.

Enquiries.

"*He that questioneth much shall learn much.*"—Bacon.

Wheat-ear Carnation.—Rev. Canon Ellacombe, Bitton, Bristol, would be glad to procure pipings from "P. F. A." of this plant.

Notices to Correspondents.

Candidate for Situation Abroad: *Outcast.* If you will apply to the Director, Kew Gardens, and state your case, you will, with your gardening training, be considered eligible for a vacancy in the gardens. But you will doubtless have to wait some time.

Eucalyptus: *J. H.* See answer to "A. P.," in this column.

Eucalyptus urnigera, Ireland: *A. P.* In your country, autumn transplantation of the trees would answer if it be undertaken without loss of time, otherwise it were better left till next April. Carefully dig out every root, and keep damp until again committed to the soil. If the trees be small ones, the entire mass of roots and earth may be removed intact.

Insects: *H. R. G.* The caterpillar which has eaten the leaves of your Laurus is that of the common, almost omnivorous, Acronycta tridens (the Dark-dagger moth). *W.*—*H. R. H.* The common cockroach.

Mulberry Tree: *W. B.* Cut out some of the old wood, and lay in much young wood at full length, and leave off cutting-in the shoots of annual growth. The horse buried in front of the tree is likely to kill the roots. Can you not bury the remains by digging a deep hole some distance away, and casting them into it? Mulberry trees on walls are very apt to suffer from dryness at the root.

Names of Fruits: *John Prince.* 1, Bedfordshire Foundling; 2, Duke of Devonshire; 3, Ribston Pippin; 4, 5, Cox's Orange Pippin; 6, Scarlet Nonpareil.—*J. E.* 1, Louise Bonne of Jersey; 2, Duchesse d'Angoulême; 4, Comte de Lamy, 5, Beurré Bachelier.—*C. L. B.* 1, Dumelow's Seedling; 2, Ross Nonpareil; 3, Cox's Pomona; 4, Mère de Ménage; 5, Golden Harvey. The Grape is not distinguishable from the true Black Hamburgh; badly grown.—*Fredk. Hughes.* 1, King of the Pippins; 2, Fearns' Pippin; 3, Golden Reinette.—*Kyber, Worcester.* Your Apple is an unknown local sort, suited for cider.—*T. S.* 1, Lord Grosvenor; 2, Yorkshire Beauty; 4, Beurré Clairgeau; 5, Beurré Sterckmanns; 6, Beurré Clairgeau.—*H. P.* Apple Wadhurst Pippin.—*S., Aberdeen.* Two Scotch Pears, not known or grown in the south.

Names of Plants: *T. Rattray.* 1, Cratægus coccinea; 2, C. c. maxima; 3, C. crus galli splendens; 4, C. c. g. variety; 5, Vaccinium Vitis-idæa; 6, probably a Vaccinium: cannot name from flowerless shoot.—*J. H.* Spray with fruit is Cratægus orientalis; 1, Pyrus prunifolia; 2, P. spectabile, apparently.—*R. Norris.* Scolopendrium vulgare var. sub-cornutum.—*J. C. & Co.* Cyperus distans.—*Alex. McAdam.* 1, Aster diffusus horizontalis; 2, A. Novæ-Belgii lævigatus; 3, A. salicifolius; 4, A. acris; 5, Phyteuma orbiculare; 6, Schizostylis coccinea.—*A. M.* Cnicus syriacus.—*W. Cutbush.* Cratægus orientalis *M. E. H.* A distinct form of Cataaetum macrocarpum, the petals are peculiarly broad.—*W. E.* 1, Anthemis tinctoria; 2, Celsia betonicæfolia (?).—*F. S.* Stapelia variegata var. pallida.—*F. K.* Stapelia variegata var. bufonia. Not a Cactus, but one of the Asclepias family.—*E. L. H.* Lotus peliorhynchus.—*C. H. J.* (*Holt*). 1, Festuca ovina glauca; 2, Sedum album variegatum; 5, Kerria japonica; 7, Polemonium cœruleum variegatum; 3, 4, and 6, cannot be determined without flowers.—*A. M.* 1, Viburnum Lantana; 2, Cornus mas; 3, Euonymus europæus; 4 and 5, Tamarix Gallica, varieties, send when in flower; 6, Pinus maritima; 7, Polygonum cuspidatum.—*D. Bros.* Begonia Saundersi.—*A. W. S.*—Clerodendron Bungei (fruit next week).—*E. B. G.* Probably Miltonia Blunti; can we have the spike when going off, and a leaf?—*E. Hazelly.* Polymnia uvedalia.—*E. M. A.* Schizostylis coccinea; Oak next week.—*F. C. J.* Robinia pseud-acacia var.

Potato Magnum Bonum: *A Reader.* This Potato was raised by the late Mr. Clarke, of Christchurch, Hants, and we find that it was first exhibited on September 28—29, 1876, at the International Potato Show at the Alexandra Palace, the variety being exhibited by Mr. J. Pink, of Lee Court, Faversham. After that date, there are frequent allusions to this variety. Belgian Kidney was at that period sometimes sold for it, it being very similar in shape.

Potatos: *A. P.* There is no reason why Potatos should not be grown on the same land year after year, provided it is properly manured with good farmyard manure, supplemented with kainite and potash salts, the latter being connected with the formation of the starch of the tuber. Farmyard manure, without potash, does not give the best results. Of course, in so cropping the land, every source of Potato-disease, as tops and diseased tubers, must be collected and burnt.

Show Dahlias: *Autumn.* There is no manual in print on Dahlia growing. We cannot publish a list of sixty names; buy a good florist's catalogue. Any good well-tilled and manured soil will grow a Dahlia. The plant is a gross-feeder, and requires manure supplied to it in a readily available form.

Tree Dressing: *W. H.* There is no one person in charge of the London squares. You would have to ascertain, by making a personal visit to the squares, who is in charge. There is no list kept that we know of.

Tropæolum: *C. A.* A pretty form, if it prove constant. We cannot name such plants.

Turf: *Enquirer.* The turf, being laid and grown for trade purposes, is yours, to remove at the expiration of the tenancy, equally with other trade stock.

Yew: *C. H. C—R.* The cone-like appearance on the shoots sent are caused by the attack of an insect, Cecidomyia Taxi.

CATALOGUES RECEIVED.

W. Rumsey, Joynings Nursery, Waltham Cross, N.—Roses, Trees and Shrubs, &c.

— Baudriller, Gennes, Maine-et-Loire, France—Plant List.

Joseph Breck & Sons, 51 to 53, North Market Street, Boston, Mass., U.S.A.—Dutch Bulbs.

Daniels Bros., Norwich—Dutch Flower Roots, Fruit Trees, &c.

Jarman & Co., Chard, Somerset—Bulbs and Plants.

Hillebrand & Bredemeier, Lago Maggiore, Pallanza, Italy—Novelties.

John Gould, 17, Old Millgate, Manchester—Bulbs.

Benjamin R. Cant, Colchester—Roses.

Communications Received.—C. B. S.—W. Gardiner.—J. M.—T. W.—S. C. (shortly).—J. Weathers.—E. J. Lowe.—Miss H. (next week).—F. C. T.—W. E. G. (note on Dimorphism was squeezed out).—G. Hall.—G. R. B.—J. Laing.—R. O.—J. T. B.—W. K.—F. Ross.—H. W. W.—W. R.—Mawe & Co.—J. Plane (thanks).—W. H. D.—J. Colebrook.—D. S.—W. S. S.—A. B.—Dr. M.

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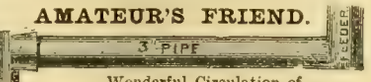
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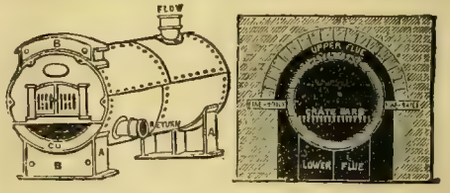
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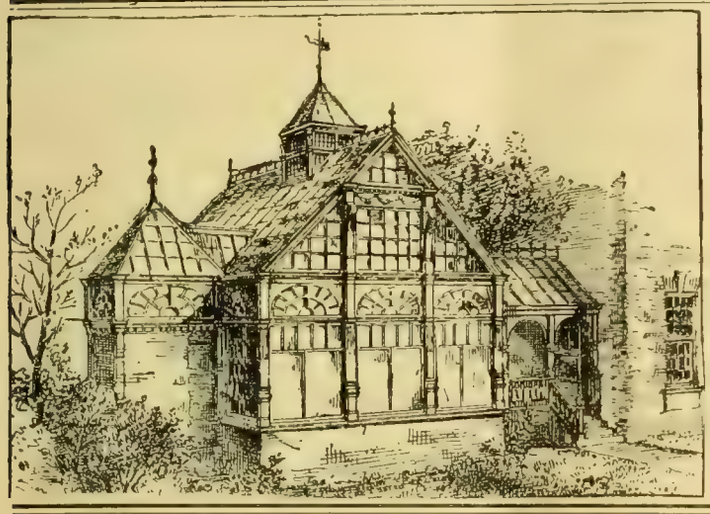
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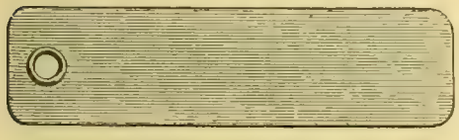
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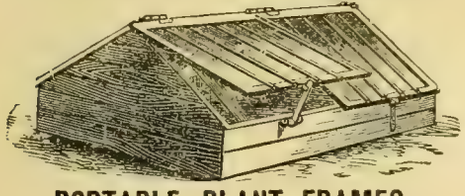
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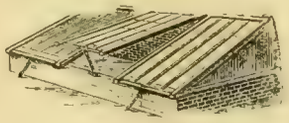
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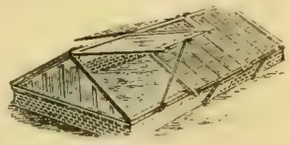
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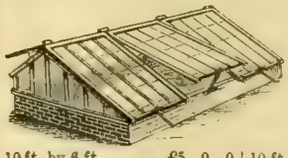
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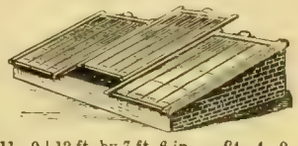
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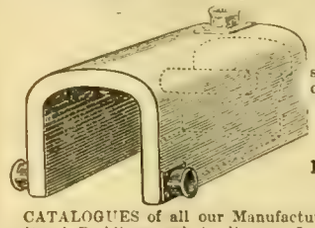


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THE GARDENERS' CHRONICLE IN AMERICA.

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Thursday Next.

VALUABLE ESTABLISHED and IMPORTED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 23, at half-past 12 o'Clock precisely, by order of Mr. F. Sander, CYPRIPEDIUM HAYNOLDIANUM, splendid importation, green and healthy, and as good as established; C. ROTHSCHILDIANUM, one of the most beautiful and interesting of Cypripedes. Also some large specimen plants of the following established Orchids:—CYMBIDIUM LOWIANUM, C. MACROCARPUM, very rare specie, and only represented in one or two collections; CYCNOCHES CHLOROCHILON, the most splendid specimen in existence in flower; CATTLEYA MAXIMA PERUVIANA in flower, some very fine specimen plants. Also a splendid plant of the rare EPIDENDRUM CORDIGERUM ALBUM; this is certainly one of the most exquisite Orchids known, the beautiful white lips making such a grand contrast with the purplish-brown sepals and petals. A few specimen plants of DENDROBIUM NOBILE, from the best district; HYBRID CYPRIPEDIUMS, IO GRANDIS SWANIANUM, the rare C. HORNIANUM, and the very beautiful species, C. RETICULATUM; some fine healthy plants of the pure white ANGRÆCUM SANDERIANUM, established specimen plants of CATTLEYA TRIANÆ, all best varieties; LÆLIA GRANDIS, now very rare; this plant has very handsome fawn-coloured sepals and petals, and a rich rosy lip; CATTLEYA BOWRINGIANA, several grand specimens in full bloom; ODONTOGLOSSUM GRANDE in flower, best varieties, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.

3000 LILIUM AURATUM, and L. LONGIFLORUM, just received direct from Japan in fine condition; several thousand TUBEROSES and AMARYLLIS from Japan, together with a few rare LILIES in variety, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 23.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.

GREAT UNRESERVED SALES.
Four times Weekly.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, all received direct for Unreserved Sale, and lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

American Nurseries, Leytonstone.

Highly important four days unreserved Sale of beautifully-grown NURSERY STOCK; land required for Building.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, adjoining the Railway Station (where goods may be transmitted to any part of Great Britain), on MONDAY NEXT, October 20, and three following days, at 12 o'Clock punctually, the First Portion of the thriving and healthy young NURSERY STOCK, including about 50,000 Evergreen and Coniferæ Shrubs, in choice variety, 1 to 2 feet; 5000 fine Border Shrubs, 7000 named and ponticum Rhododendrons, 5000 Azaleas, 14,000 Ornamental and Forest Trees, 10,000 Standard and other Roses, a large quantity of selected Fruit Trees, Irish Ivies, and other hardy Climbers.

May be viewed any day (Sunday excepted) prior to Sale. Catalogues had on the Premises, and of the Auctioneers 67 and 68, Cheapside, E.C.; and Leytonstone, E.

The Second Sale of Outdoor NURSERY STOCK will take place on the Premises, on MONDAY, November 17, and following days.

Maresfield, Sussex.

IMPORTANT CLEARANCE SALE of valuable NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Piltdown Nurseries, Maresfield, near Uckfield, 2½ miles from Uckfield Station, L.B. & S.C.R., on TUESDAY NEXT, October 21, at 12 o'Clock to the minute, by order of Louisa, Lady Shelley, of Maresfield Park, the last portion of the well-grown NURSERY STOCK, including choice Border Shrubs, Thousands of Evergreens and Conifera Shrubs, 12,000 Standard and Dwarf Roses, finest varieties in cultivation; large quantities of Common Laurel, 1200 clean grown Apples, Gooseberries, and Currants, Thousands of Quick and Spanish Chestnuts, and various other stock.

May be viewed one week prior to the Sale. Catalogues had of Mr. BOOTH, on the Premises; of Mr. SANDFORD, the Estate Office, Maresfield; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Catford.

ABSOLUTE CLEARANCE SALE, without reserve. By order of the Shortlands and Nunhead Railway Co.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, forming part of the Nursery (lately in the occupation of Mr. John Laing), Southend Park, 15 minutes' from Catford and Lower Sydenham Stations (S.E.R.), on TUESDAY NEXT, October 21, at 12 o'Clock precisely, the well-grown NURSERY STOCK, comprising Evergreen and Coniferæ Shrubs, including several thousands of fine healthy Aucubas, Laurels, Privet, &c., several thousands of Ornamental and Forest Trees, also a choice variety of selected Fruit Trees, and Currants, and numerous other Stock.

May be viewed any day prior to the Sale. Catalogues had of the Engineer, at No. 2, Ravenscourt Park; of Messrs. VIGER, 4, Frederick's Place, Old Jewry, E.C.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tuesday Next.

10,000 LILIUM AURATUM and other LILIES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, October 21, at half-past 12 o'Clock precisely, 13,000 LILIUM AURATUM, received direct; 5000 L. LONGIFLORUM, 2000 L. SPECIOSUM RUBRUM and ALBUM; also a portion of the extensive collection of finest-grown LILIES, from Mr. W. Gordon, of Twickenham, including L. Humboldtii, L. Washingtonianum, L. umbellatum, and L. elegans; choice Japanese IRIS, and various HARDY BULBS.

On view morning of Sale, and Catalogues had.

Tuesday Next.

10,000 LILIUM AURATUM,
5,000 ,, LONGIFLORUM,
2,000 ,, SPECIOSUM RUBRUM and ALBUM.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on TUESDAY NEXT.

On view morning of Sale, and Catalogues had.

Wednesday Next.

SPIRÆA JAPONICA, AZALEAS, KENTIA SEEDS, and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London E.C., on WEDNESDAY NEXT, October 22, at half past 11 o'Clock to the minute, AZALEA INDICA and OTHER PLANTS, from the Continent; Spiræa japonica, in splendid condition; 100 Stephanotis floribunda and Cyclamen persicum; Dutch Bulbs; a fine selection of Narcissus from a private grower; Hardy Bulbs; 35,000 seeds of Kentia Fosteriana and K. Belmoriana, and 5000 African Tuberoses, just received in fine condition.

On view morning of Sale, and Catalogues had.

East Dulwich.—Wednesday Next, October 22.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Seeger & Tropp, to SELL by AUCTION, on their Premises, at East Dulwich, on WEDNESDAY NEXT, October 22, commencing at half-past 12 o'Clock precisely, a large quantity of RARE and CHOICE WELL-GROWN HEALTHY ORCHIDS, many of which will be in bud or flower. Included in the long General List Catalogued, will be found the following:—

- Brassia verrucosa and other varieties, grand specimens.
- Cattleya Fausta.
- Cattleya labiata, the best variety of the old autumn-flowering species; grand plant, 16 bulbs, 10 with leaves, 3 leads, 1 flower-sheath.
- Cattleya intricata maculata, most distinct and beautiful hybrid.
- Cœlogyne cristata Lemoniana, unique specimens.
- Cypripedium Druryi, grand specimen, with 26 growths.
- Cypripedium, all the leading best kinds.
- Dendrobium splendidissimum.
- Lælia elegans alba.
- ,, ,, Schilleriana.
- Lælia grandis superba, the true old form, in bud or flower. The varietal name "superba" is appended to distinguish this fine Lælia from the ordinary type more frequently met with.
- Lælia elegans Turneri.
- Lælia Perrini alba, the pure white Perrini, and must not be confounded with L. Perrini nivea, which has a tinge of colour in the lip. Splendid plant, 6 bulbs, 5 with leaves, 1 lead, 1 flower-sheath.
- Madevallia sceptrum. This belongs to the window-bearing group (Cryptophoranthus).
- Odontoglossum nebulosum candidissimum, the pure white form.
- Oncidium, over 60 species.
- Pleurothallis Roezli, perhaps the finest specimen in existence, with several flower-scapes now pushing.
- Sobralia violacea, grand specimen.
- ,, Warscewiczi.
- ,, leucoxantha, fine specimen.
- ,, virginalis.
- ,, xantholeuca, three very fine plants.
- Vanda tricolor variety, fine specimen.

The Sale will also include large importations of BRAZILIAN and MEXICAN ORCHIDS in best possible condition, and a great number of established plants in bud or flower.

Messrs. Seeger & Tropp's Orchid Nurseries are within 5 minutes' walk of East Dulwich Railway Station (L. B. and S. C. Ry.), and frequent trains run from London Bridge and Victoria. Plants will be on view the day previous and morning of Sale, and Catalogues obtained on the Premises; also of the Auctioneers, at their Central Sale Rooms, 67 and 68, Cheapside, E.C.

Canterbury.—Expiration of Lease.

Clearance Sale of the first portion of the Healthy and Thriving NURSERY STOCK, by order of Mr. J. Kennett.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, St. Martin's Nursery, Sturry, Canterbury, 1½ miles from Sturry Station, on WEDNESDAY NEXT, October 22, at 12 o'Clock sharp, without reserve, the first portion of the beautifully-grown NURSERY STOCK, in capital condition for removal, comprising 3000 Conifers and Border Shrubs, 3000 Fruit Trees, best named sorts; 46,000 Forest Trees, 3000 Gooseberries and Currants, and various other Stock. Mr. Kennett will undertake to carefully lift goods and convey to the Railway station at the mere cost of labour incurred.

May be viewed prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Wednesday Next.

35,000 SEEDS, KENTIA FORSTERIANA and KENTIA BELMOREANA.

MESSRS. PROTHEROE AND MORRIS will include in their SALE by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, October 22, at half-past 11 o'Clock, 35,000 SEEDS of KENTIA BELMOREANA and KENTIA FORSTERIANA, just arrived in splendid germinating condition, from Lord Howes' Island. Two more useful and elegant Greenhouse Palms than these two Kentias cannot be grown.

On view morning of Sale, and Catalogues had.

Northampton.

CLEARANCE SALE.—UNRESERVED SALE of NURSERY STOCK, by order of Messrs. Denton & Blunden.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Bedford Road Nurseries, Northampton, 20 minutes from London and North-Western Railway (Castle), and 10 minutes from Midland Railway Station, on THURSDAY NEXT, October 23, at 12 o'Clock precisely, a portion of the well-grown NURSERY STOCK, comprising 2400 Limes, 4000 Wych Elms, 2400 Box, 15,750 Quick, 1800 Poplars, Maples and Sycamores, 3500 Pinus austriaca, 4500 Spruce Firs, 2400 Common Laurels, 4700 Gooseberries and Currants, Standard Pears, Irish and other Ivies, and other Stock.

May be viewed two weeks prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next, October 24.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 24, at half-past 12 o'Clock precisely, a large quantity of ESTABLISHED and IMPORTED ORCHIDS, including 1000 Odontoglossum Alexandræ unflowered, together with many ORCHIDS in Flower and Bud, &c.

On view morning of Sale, and Catalogues had.

Cliffe, near Rochester.

Adjoining the Cliffe Railway Station, South Eastern Railway. Without Reserve.

GREAT ANNUAL SALE of FRUIT TREES.

Important to Nurserymen, Market Gardeners, Fruit Farmers, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Perry Hill, Cliffe, near Rochester and Gravesend, adjoining the Cliffe Railway Station, S. E. Ry., on MONDAY, October 27, at 12 o'Clock precisely, by order of Mr. W. Horne, 85,000 FRUIT TREES, comprising 35,000 Standards, Half-standard, and Maiden Apples, Pears, Plums, and Cherries; 30,000 Baldwin Black Currants, 5000 Raby Red Currants, 15,000 Gooseberries, 30,000 Raspberry Canes, 72,000 Strawberry plants, including 50,000 Laxton's Noble, 20,000 Sir Joseph Paxton, 2000 plants in 6-inch pots for forcing; 20,000 Connover's Colossal ASPARAGUS, one year; 6000 LIGUSTRUM OVALIFOLIUM, Evergreen Privet, 1 to 3 feet; 50,000 Myatt's Early Spring CABBAGE plants.

May be viewed one week prior to the Sale. Catalogues can be had of Mr. Horne, on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Preliminary Notice.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Bagshot, Surrey, on MONDAY, November 3, and three following days, a large quantity of exceptionally well-grown NURSERY STOCK, by order of Messrs. Waterer & Son.

Preliminary Notice.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Hale Farm Nursery, Tottenham, on TUESDAY, November 4, at 11 o'Clock to the minute, 1500 lots of beautifully-grown NURSERY STOCK, by order of Mr. T. Ware.

Every Thursday.—Dutch Bulbs.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY NEXT, and every THURSDAY throughout the season, at half-past 11 o'Clock A.M., large consignments of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland; also Roman HYACINTHS and Paper White NARCISSUS. Lotted to suit all buyers.

On view morning of Sale, and Catalogues had.

On WEDNESDAY and FRIDAY EVENINGS, at half-past 5 o'Clock, SALES of Choice CUT FLOWERS. Entries invited.

Nursery Stock Sales conducted and Valuations made.

Auction Rooms and Offices, 6, Phillips Street, Birmingham.

FOR SALE, a SEED, FLORIST, and NURSERY BUSINESS in Yorkshire. The Nursery contains 3 Plant Houses, and 2 deep Pits heated with hot water, and a number of cold Pits, together with 5 Acres of good Nursery Land well stocked.

There is a good trade done in each department, and it will prove a splendid business for a retiring Gardener.

The disposers can give most satisfactory reasons why disposing, and to a likely man, will offer most liberal terms.

Address, M. A., 41, Wellington Street, Strand, London, W.C.

LAND for HORTICULTURISTS.
TO BE LET, on specially favourable long leases.
TO BE SOLD, on liberal system of deferred payments.
TO BE SOLD forthwith, 3-4ths price remaining at 4 per cent.
Excellent for soil, water, and railway.
Apply to Mr. F. J. CULLIS, F.G.S., Marling Park Estate, Hampton-on-Thames.

FREEHOLD FRIABLE LOAM, 35 acres, price £700, with chalk subsoil, high cultivation. Suit Market Gardener, Fruiterer, &c. Healthy picturesque part of Hants, 1½ hour from London. Also 5½ acres. £116.
B. DOWNES, 53, Cheapside, E.C.

TO BE LET, 1 to 10 acres of GRASS LAND, suitable for nurserymen and others, on Lease for 7, 14, or 21 years. Rent from £8 to £12 per acre, with the option of purchasing the Freehold within the first seven years. No tithe. Near the main road, Enfield Highway. About 9 miles from London.
Apply, H. MOORE, 59, Bishopsgate Street Within, E.C.

Cornwall.
TO BE LET, by Tender, with immediate possession, for a term of fourteen years' from Michaelmas last, all that Tenement known as PONJOU, situate in the Parish of Gulval, and within 2 miles of Penzance, in the occupation of Mr. R. H. Thomas and Mrs. R. D. Thomas, consisting of a substantial Dwelling-house and Outbuildings, with 8 a. 2 r. 25 p. of Orchards, and 33 a. 2 r. 28 p. of Land. There are 14 Span-roof Glasshouses, each 100 feet long, which are supplied with Hot-water Pipes, 2 Rochefort Boilers, each 15 feet long, and 2 Gold Medal Boilers, each 6 feet long. There is also 1 Glasshouse 40 feet long.
The conditions for Letting can be known on application to Mr. CHARLES READ, Public Buildings, Penzance, to whom Tenders should be sent on or before the 23rd inst.
Dated October 8, 1890.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Landscape Gardening.
MR. ARTHUR M. KETTLEWELL, LANDSCAPE GARDENER, having great experience in all matters pertaining to the artistic arrangement or re-arrangement of Grounds, IS READY TO UNDERTAKE the Designing and Laying-out of Private or Public Gardens, Parks, Cemeteries, &c. Send for his Manual on the "Art of Landscape Gardening," excellently reviewed by nearly all the leading Gardening Papers, post-free, 7d.
Address, Titley House, Titley (R.S.O.), Herefordshire.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

NEW DESCRIPTIVE PRICED CATALOGUE
Post-free on application to
THE VINEYARD AND NURSERIES,
GARSTON, near LIVERPOOL.

QUICK, for Hedges, strong transplanted, 15s., 20s., 25s., and 30s. per 1000.
ELMS, English, fine trees for avenues, or singly in parks, 2s. 6d. each.
EVERGREEN HEDGES.—The best are formed of American Arbor-vitæ, 3 to 4 feet, 12s. per dozen; Thuia Lobbii, 12s. per dozen; English Yew, 2 to 2½ feet, 9s. per dozen.
SEASIDE EVERGREENS.—Austrian Pine, 3 to 3½ feet, 9s. per dozen; Arbutus, nice plants, 2½ feet, 12s. per doz.; Bays, 12s. and 18s. per dozen; Euonymus, best green, 4s. and 6s. per dozen; Evergreen Oaks, in pots, 3 feet, 18s. per doz.; Escallonia macrantha, in pots, 9s. per doz.
GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

Strawberries, in 3½-inch pots.
FRANCIS R. KINGHORN offers very strong Plants of all the leading sorts, "La Grosse Sucrée," "Noble," "Latest of All," "Loxford Hall," &c. LIST on application.—Sheen Nurseries, Richmond, Surrey.

ORCHIDS a SPECIALTY.—A rare chance to those forming collections. Having bought a private collection of 3000 plants, beg to offer at about half their value. Write for List. 500 Odontoglossum Alexandræ in thumbs, 12s. per dozen; 650 ditto, in large 60's, strong growths, 30s. per dozen; 250 Masdevallias, 30s. per dozen, including M. Harryanum, M. Wagneri, M. amabilis, M. triangularis, M. octhodes, and M. Lindeni; Lycaste Skinneri, fine plants, 2s 6d., 3s. 6d., and 5s. Six distinct Cattleyas for 21s., including C. Mossiæ, C. Trianæ, C. gigas, and C. Gaskelliana. Our specialty—an amateur's collection of Orchids, twelve distinct plants, 20s., 30s., 40s., and 50s. Specimen, carriage paid, 2s., 3s., 4s., and 5s.
W. L. LEWIS, Chase-side, Southgate, London, N.

LILY OF THE VALLEY (Dutch gigant.), for planting, extra strong, English culture.

TO FLORISTS and others.—Extra fine CHRYSANTHEMUM BLOOMS (white), at 9d. per dozen, any quantity. Any part of the kingdom.
J. S., Silbury House, Crediton, Devon.

SUTTON'S INIMITABLE BEDDING HYACINTHS.
In distinct shades of colour, and to flower simultaneously.
"My show of Inimitable Hyacinths this spring, from bulbs bought from you was truly magnificent. Their flowering was simultaneous: not a single failure. Few who saw them would believe that they were really grown out-of-doors, and many insisted that they had been removed from the greenhouse for the occasion, whereas they were planted out-of-doors on the 9th of October, 6 inches deep, and never had the slightest shelter all through the severe winter. I planted them as per your illustration in Bulb Catalogue, and had such a brilliant eye feast for several days as I never previously experienced. I may add that the Tulips were equally fine."—W. WORMALD, Esq., Hassocks.
Prices and other particulars on application.

SUTTON'S BULBS.—GENUINE ONLY DIRECT FROM SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING. (All Bulbs, value 5s. and upwards, Carriage Free.)

Rhododendrons cheaper than ever.
Over 30 Acres for Sale.
ISAAC MATTHEWS AND SON have to offer over 100,000 White, 100,000 Scarlet, in variety. Plants fit for immediate forcing. The above are all freely set with bloom buds, and are in the most healthy condition. We also have a very extensive stock of HYBRID and PONTACOMS from Seed, and can be had in all sizes, varying from 6 inches up to 4 feet, in any quantity, HOLLIES, AUCUBAS, YEWS, CONIFERS, THORN QUICK, Scotch SPRUCE, LARCH, ELM, ASH, ALDER, BIRCH, and all other General Nursery Stock in abundance. For Price LIST, &c., apply to—
ISAAC MATTHEWS AND SON, The Nurseries, Milton, Stoke-on-Trent. Our Nursery is very extensive, and the Stock good.

HARDY AZALEAS.—A selection of the most beautiful, many of which were raised in this Nursery, well furnished plants, covered with buds, from 1½ to 3 feet high.
AZALEA MOLLIS.—Very fine plants up to 2½ feet, well budded.
AZALEA OCCIDENTALIS × MOLLIS.—White, with lemon blotch—very beautiful, offered for the first time.
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

FERNS! FERNS!! FERNS!!!—Trade offer.
Great Annual Sale of Surplus Stock; 100,000, in 25 sorts, Greenhouse and Stove, Pteris, Adiantums, Polypodiums, Cyrtomiums, Polystichums, &c.; 30,000 Pteris cretica cristata, fine bushy stuff, soon make 48's if potted at once; 10,000 Adiantum cuneatum, bushy stuff, all at 12s. per 100; store Ferns, variety, 6s. per 100, 50s. per 1000. Packed free, cash with order.
J. SMITH, The London Fern Nursery, Loughboro' Road, S.W.

BULBS—BULBS—BULBS.—Our stock of Dutch Bulbs is quite ready for inspection. Customers at liberty to come and select for themselves at the—
NEW HAARLEM BULB WAREHOUSES, 34, Mansell Street, Aldgate, City, London.
Proprietors—MICHAEL RAINS AND CO.
Reg. Tel. Address—"BIOTICUS, London." Established 1856.
CATALOGUE on application.
Named HYACINTHS, 2s. 6d. per doz. 1st size Bulbs of any sort.

SCARLET CARNATION "Al. Alegatière."—A most handsome free flowering Tree Carnation, of sturdy compact habit, and bearing in great profusion well-formed brilliant scarlet flowers of great substance.
FINE STRONG PLANTS, covered with buds, in different stages, now ready to pot up for Winter-flowering in Greenhouse. Special cheap offer. 50s. per 100, 7s. 6d. per dozen.
Samples may be seen at 12, King Street.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

Special Trade Offer.
300,000 DWARF ROSES, grand plants, 25s. per 100 for Cash. List free. Evergreen and Oval Leaf PRIVET, all sizes, cheap. Price on application.
A. J. AND C. ALLEN, Nurserymen, Florists, and Rose Growers, Heigham, Norwich.

STANDARD APPLES, fine trees for Orchard planting. Cash with order. £8 per 100, including:—

Blenheim Orange	Grenadier	Mr. Gladstone
Cellini	Hawthornden	Red Quarrenden
Cox's Orange	Irish Peach	Ribston Pippin
Duke of Wellington	Keswick Codlin	Sturmer
Fearn's Pippin	Lord Suffield	Warner's King.

STANDARD VICTORIA PLUMS, the most certain cropper, and best for cooking and preserving, £7 per 100.
GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

Many Acres of Lilies of the Valley!
T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-yr. old flowering Crowns for forcing, and 2 and 1-yr. old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.
T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

NEW WHITE CARNATION. "Mrs. Muir;" strong, healthy plants, now ready, 1s. 6d. each, 15s. per dozen, £5 per 100; also CARNATIONS and PICOTEES in all the different classes, 6s. per dozen; my own selection.—M. CAMPBELL, Florist, High Blantyre, N.B.

GARDEN.

For whatever is wanted not mentioned in these columns, please to write immediately to H. CANNELL AND SONS, whose Seed and Nursery Stock is very complete and extensive, and where nearly everything for the Garden is grown and supplied in large quantities, in the finest possible condition, at the lowest prices, consistent with correctness and superior character. Send for CATALOGUES.
SWANLEY, KENT.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.
The ANNUAL DINNER of the above Society will take place on THURSDAY, October the 23rd inst., at the Cannon Street Hotel, at half-past 5 P.M. E. R. CUTLER, Esq., will preside. Tickets 5s. each. To be had of the Secretary—
W. COLLINS, 9, Martindale Road, Balham, S.W.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.
NOTICE IS HEREBY GIVEN, that an addition will be made to the Pension List of this Institution in January next. All persons desirous of becoming Candidates will be required to send in their applications to the Committee on or before the 8th day of NOVEMBER NEXT, after which day they cannot be received. Preference will be given to those Applicants or their Widows who have been on the Books of the Institution as Subscribers for Fifteen clear Years. Should there not be enough of these Applicants to fill the Vacancies, then the cases of those applicants who have not subscribed so long or not at all will be considered. By order,
EDWD. R. CUTLER, Sec.
50, Parliament Street, London, S.W.—Oct. 7, 1890.
P.S.—Printed Forms, together with full information, can be obtained from the Secretary.

NOTICE IS HEREBY GIVEN, that the PARTNERSHIP heretofore subsisting between the undersigned THOMAS SILLITO BOULTON AND EDWARD DOMINIC SHUTTLEWORTH, carrying on business in co-partnership under the firm of Boulton and Shuttleworth, at Albert Lodge, 256, Peckham Rye, London, S.E., as nurserymen, has been DISSOLVED as from the seventh day of October, 1890, by mutual consent. The Debts due to and from the late firm will be received and paid by EDWARD DOMINIC SHUTTLEWORTH. Dated this 13th day of October, 1890.
(Signed) T. S. BOULTON. E. D. SHUTTLEWORTH.

Competition.—Stockton-on-Tees.
THE CORPORATION of the BOROUGH of STOCKTON-ON-TEES, invite DESIGNS for the LAYING-OUT of a PUBLIC PARK, and are willing to pay £50, £25, and £10 respectively, for the Designs which are in the opinion of the Park Committee, first, second, and third, in order of merit.
Particulars, conditions, and plans of site, may be obtained on application to the Borough Engineer, Stockton-on-Tees.
Designs, &c., to be sent to "The Chairman of the Park Committee, Town Hall, Stockton on-Tees," on or before the 25th of November, 1890. By order of the Committee,
October 13, 1890 MAT. B. DODDS, Town Clerk.

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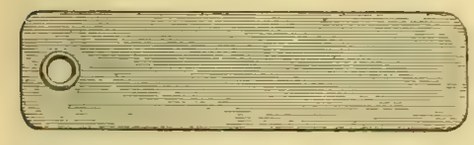
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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 18, 1890.

A GLOUCESTERSHIRE GARDEN.

ABOUT midway between Bath and Bristol is situate the long straggling village of Bitton. It is but little raised above the level of the river, the banks of which are lined by fat pastures, suggestive of Double-Gloucester cheese. The subjacent "rock" is lias, according to the map, but the vegetation of the garden we have come to visit seems to show that it must have a warmer, more porous soil than lias clay is likely to supply. It is, we believe, a rich loam resting on gravel. That it has lime in it is shown by the circumstance that, barring one or two in pots, there is no Rhododendron about the place. The walls, too, look like warm limestone walls, and give shelter directly and indirectly to a host of plants. Still, one does not see at a glance what are the specially favourable conditions, and yet that they are specially favourable is obvious enough. The mention we shall have to make of certain plants which are hardy here, will make this evident also to the reader. It is, however, not altogether unsatisfactory to the visitor, amid so much wealth to find that some things will not do well here, among them peat-loving plants in particular. Our business is with the vicar's garden, but before we begin, as it is on our minds, let us note how very beautiful is the "perpendicular" tower of the church close by. It looks down upon the visitor in that "peering" sort of way that well-proportioned towers do, soothing and satisfying him with a sense of beauty. Seen from the lawn between the trees, it quietly compels attention, and claims its share of admiration, as well as the trees and the flowers. Canon Ellacombe, like his father before him, is a great gardener, an ardent botanist, and a zealous collector, and so the old garden has its history and its traditions. Its records and registers are constituted in large measure by the plants themselves. Some of them are

new comers, but many are old inhabitants, and the descendants of still older inhabitants. Mr. Ellacombe has his special favourites, and some genera, such as Rosa, and Fuchsia, and —and—and—are better represented than others. To see flower-beds, carpet-beds, and florists' flowers, you need not come here—the Canon's tastes lie not in these directions; nor are stove plants cultivated, except out-of-doors—a small greenhouse and a few cold frames, these are all the shelter provided. But for hardy plants, trees, shrubs, perennial bulbs, for "out-of-the way plants"—plants selected for their interest—why, this is the garden to come to. We will not say that a visit here does not in some sort produce a feeling of depression and humility—it does. There is so much that one does not know—so much of which one has, perhaps—or, perhaps, has not heard—that a chastening feeling arises, which, let us hope, may prove advantageous. "Do you know that plant?" or "*don't* you know that?" are frequent questions on the part of our guide. But lest this remark may give rise to misapprehension, let us hasten to say that the misgivings, which a glance round the garden produces, are dispelled by the cordial welcome of the host, and by the stream of interesting information he pours out for the benefit of his guest.

We have already mentioned the lawn as the central feature of the garden; it is spacious and undulating. Specimen trees are dotted here and there, such as a noble Lebanon Cedar, a prim and stately Wellingtonia, of very large dimensions; a fine Maidenhair tree, and a cut-leaved Beech. Great clumps of Polygonum sachalinense, and others of Rhus glabra laciniata, occur hereabouts, the latter kept cut, so as to ensure a fresh growth of the elegantly cut and beautifully tinted foliage every spring. Similar treatment is meted out to the Paulownia, which, so managed, forms a "subtropical" of the most effective character. On one or more sides of this lawn runs a wide shrubbery border. A warm wall, with a border at its foot, bounds the garden on another side. Besides, there are scattered beds and rock gardens here and there, and the kitchen-garden quarters are pressed into the service, and the ornamental, the interesting, and the useful in the way of plants are disposed side by side. There is not much vacant space, not much bare earth to be seen anywhere, and who shall enumerate the inhabitants? Such a list would demand many columns of the *Gardeners' Chronicle*. The father of the present incumbent, who was taken to his rest a few years ago at a ripe old age, prepared a catalogue which we were once privileged to see, and which was a remarkable document, as showing what was grown in this Gloucestershire garden in olden time. But the catalogue would have to be bigger now. Twenty-five pages of our own note-book (not a very small one) are filled with names of plants that we noted on the occasion of our visit, and Mr. Nicholson, who also visited the same garden earlier in the season, has sent us a list of names only which occupies nearly all four sides of a sheet of foolscap!

The reader need not be dismayed, for we have no intention of transcribing those twenty-five pages, nor that long catalogue. It must suffice to mention some of the many interesting plants, and we cannot even attempt to classify them at all rigorously. First of all, as showing the favourable climate, we may note as growing without protection other than that afforded by the house adjacent, a fine Chamærops Fortunei; Phormium tenax, a large Datura sanguinea (Brugmansia), blooming freely, Cordyline Banksiana, a "tree" of Abutilon vitifolium, of which it is noted that cuttings cannot be depended on to reproduce the colour of the flower, which may be white or may be blue; Bamboos of various kinds, including some with three-sided and others with four-sided stems; Asparagus verticillatus, and several others whose really elegant "foliage" is so characteristically un-English; Caryopteris mastachanthus, with its lilac flowers; Eucalyptus urnigera, Abutilon megapotamicum, a plant which the late Prof. Edward Morren called A. vexillarium, because its yellow, red, and black flowers represented his national colours; Habrothamnus elegans, Fabiana imbricata, Mandevilla suaveolens, Trachelfospermum jasminoides, Physianthus albens, Pancratium illyricum, the Caper—Capparis spinosa—Roscoea purpurea, of whose hardihood at Kew we took note some few weeks ago; Sauromatum guttatum again is an Aroid we expect to see in a stove but not out of doors; Mutisia decurrens, which we are enjoined not to disturb if we wish to see it flower freely; Mitraria coccinea, which we never saw treated as a hardy plant before. These are a few of the plants which are found to be quite hardy in this favoured spot, and some might be so elsewhere if they were tried.

The shrubbery borders contain a rich collection of different kinds of Box (Buxus), of Berberis, of Hypericum, of Salix, of Rosa, of which genera a very complete representation is made; of Spiræas, and of Rubus, including the pretty R. phœnicolasius, and the double pink and white varieties, R. deliciosus, R. nutkanus, and many others. Among the shrubs such things as Buddleia crispa, Jamesia, Nevinsa, Choisya ternata, Corokia, Cotoneaster, Edwardsia grandiflora, with large yellow flowers; Citrus trifoliata, Carpenteria californica, Magnolia stellata, Pyrus Maulei (Leichtlin's variety), Olearia macrodonta, Myrsine indica, Ceanothus rigidus, Abelia floribunda and triflora, Cassia marilandica, Cocculus laurifolius, Desfontainea spinosa, Lycium afrum, and Aster argophyllus are to be seen.

Among the trees, in addition to those mentioned before, we may note Quercus coccifera in fruit; Pterostyrax hispida, also in fruit; Cratægus prunifolius, Styrax japonicum, Diospyros Kaki, Idesia polycarpa, and Actinidia polygama. A big bush of Viburnum Keteleerii, hort., shows that this bears the same relationship to the Japanese V. macrocephalum that the Gueldres Roses of our gardens does to V. opulus of our hedges.

Of perennial and herbaceous plants we may mention Acanthus Schottianus and A. hirsutus, both species rarely met with in gardens; Alsine laricifolia as healthy and fine as on the Simplon; the white form of Anemone apennina, the only pure white form we have seen; Anemonopsis macrophylla. A fine collection of Asters promised to continue the show of flowers into late autumn; while Cistuses and Helianthemums were so brilliant at the time of our visit, as to make one wonder why they are so neglected now-a-days. Scabiosa Webbiana does well in a sheltered border. Collinsonia canadensis is a strong-smelling Labiata, rarely seen now-a-days. Dicentra cucullaria and D. canadensis, grow in large tufts in the border, in a way that surprises even successful cultivators. Nearly related to these is Eomecon chionantha, a new Chinese Poppy, which has the making of a first-rate garden plant. Epilobium Fleischeri flourishes as well as it does in the old glacial moraines of Zermatt. The generas Epimedium, Fuchsia, and Gentiana are well represented by numerous species. The question of the mode of fertilisation of the flowers in those species of Gentian, such as G. Andrewsii, which keep their corolla closed, has been settled in this garden. The humble bees are not to be thwarted by such trifles, but force their way in and force their way out regardless of such trifling barriers as overlapping corolla lobes.

Of Hellebores there is a rich collection, including the Berlin set. Pæonies, comprising the finest tuft of Pæonia Wittmanniana we have seen; and Ranunculus, including R. thora, pyrenæus, alpestris, and parnassifolius, afford opportunity for study and comparison. Saxifrages, Sempervivums, and Sedums abound. It was from this garden that we were favoured, some years ago, with a bountiful supply of material for the monograph of the hardy species which appeared in these pages. Statice myriantha, from Tartarian steppes, is so strange and uncanny as to mock description. More than eight species of Veronica find a place here, including most of the New Zealand shrubby species, which prove quite hardy. Astrantia minor variegata is pointed out as one of the rarest plants of its kind, and one that does not submit to division readily. The variegated Strawberry grows freely, and while engaged in displaying its showy foliage, produces no fruit, but occasionally a spell of work succeeds to mere display, the aid of chlorophyll is invoked, the leaves become green, and in due time the fruit ripens.

Among bulbous plants, and those commonly associated with them, Camassia Cusickii is a newly-introduced species, seen here for the first time. Chrysobactron Hookeri, a stately plant, forms a fine clump; and Crinums, such as Powelli, compel attention by their lovely flowers. The collection of Crocuses is a representative one, including both spring and autumn-flowering varieties. Cyclamens, too, flourish in shady corners; Sparaxis pulcherrima and Alstromerias flower profusely, as do Irises, of which there is a very rich collection, as also of Oxalises. About thirty species of Tulipa are grown here, including the more recently-introduced species. The stately Yuccas glorify the garden—creatures of earth and air, vivified by light and water, the same materials, differently disposed, as those which served to construct yonder tower; but the tower crumbles, while the plant renews its youth, and each year uplifts a fresh sceptre of magnificence.

New or Noteworthy Plants.

HÆMANTHUS LINDENI, *N. E. Br.* (*new sp.*).

The beautiful new Hæmanthus represented in the accompanying engraving (fig. 85), was discovered by Mr. Auguste Linden somewhere in the Congo region, and will be figured in an early number of the *Illustration Horticole*, having recently flowered for the first time in the nurseries of L'Horticulture Internationale, Brussels. It seems to last a considerable time in flower, the heads being very large, and producing a hundred or more large and brilliantly-coloured flowers, which open in succession. When I received the head of flowers from Mr. Linden, there were over thirty open flowers upon it, and I kept it in water for nearly two weeks, during which time the flowers continued to expand, and when put in the press there were about twenty-seven open flowers upon it, and about the same number of unexpanded buds, some of which have since endeavoured to open, although under pressure. I mention these details to show that the plant is a good addition to our stove bulbs, and well worth possessing. This species does not form a true bulb, but has a thick solid rootstock, from which arise six or eight leaves in two ranks, that persist for a long time, the plant being practically evergreen. The petioles are long, rounded on the back, with a flat face, bordered by narrow erect wings, dull green, tinged with dull purple on the back. The blade of the leaf is 10 to 12 inches long by 3½ to 4½ inches in breadth, elongate ovate-lanceolate, or ovate-oblong, acute, with the base broadly rounded, subtruncate or subcordate, and decurrent into the wings of the petiole, bright green on the upper surface, duller green beneath; mid-rib flat above, prominent and rounded, and of a dull purple colour beneath. Midway between the mid-rib and the margin is a sort of longitudinal fold, formed by two of the principal lateral nerves, that nearest to the mid-rib being impressed above, the second one being slightly prominent. The scape arises from the side of the leaves, is moderately stout, and about 18 inches high, flattened on one side, dull purplish-green, with here and there some indication of paler spots. Umbel 6 to 8 inches in diameter, with a hundred or more flowers opening in succession. Bracts very numerous, linear, 1½ to 2 inches long. Pedicels about 1½ inch long, red. Ovary small, subtrigonous, green. Flowers 2 inches in diameter, the tube 8 to 10 lines long, the lobes



Fig. 85.—HÆMANTHUS LINDENI: FLOWERS OF A SHADE OF SCARLET. (SEE P. 436)

1 to 1¼ inch long, 2 lines broad, linear-lanceolate acute, of a bright salmony-scarlet, fading to pink; the colour is almost undescribable, being neither scarlet, nor any recognised shade of pink, but a combination of both. The long filaments are nearly of the same colour as the perianth, but whitish at the base, and have purplish anthers. The style exceeds the stamens in length, and is of the same colour. Specifically, this species appears to be nearest allied to H. angolensis, but has very much larger flowers, and different leaves. *N. E. Brown, Herbarium, Kew.*

PRUNING IN COMMERCIAL FRUIT CULTURE.*

The Object of Pruning. — This operation is designed to assist Nature in the production of superior fruit. Reducing the quantity of fruiting spurs and excess of branches, enables the tree to concentrate its vital energy on a fewer number of buds, to their better individual development. Further than this, a good pruner leaves all those buds in the best possible position to catch the sun and air, with a view of obtaining not only increased size in the fruit, but to ensure that high colour which such exposure alone can produce. All growers are aware that the fruit from the inside of the tree head is not so highly developed or coloured as that from the outside. Thus, a careful man will operate with a view to create a natural balance between roots and top, so that each tree may produce a crop yearly, and not, as when left alone, a heavy crop every other year, which makes it require a year's rest to recover itself. I recollect a story told, that the owner of a small garden had two large standard Apples that produced a heavy crop every other year, and my grandfather advised him to cut off the blossom from one at flowering time. This brought them so that he had a crop every year. This exhaustion of the tree by an over-crop is emphasised by the fact that most early fruits (whether Apples, Pears, or Plums) are, as a rule, more regular bearers than later kinds, because the tree has time to recover its lost power between the gathering of the crop and the fall of the leaf, when Nature's repose comes on. Evidently, therefore, it is on these lines that "rational pruning" should be done.

In dealing with this subject from a trade point of view, we are naturally at once met with the cost of the operation, and it is here that we are at a disadvantage compared with the cheap labour of the Continent; but I would suggest that growers should teach their sons to look after this, which is after all a most interesting operation, and I am sure they would enjoy it as I did looking after our orchard some years ago. The next point is—"How to go to work." I can remind you, that in dealing with some fruits, you are always on the right track as cultivators, but I want to see the system extended. Take, for example, Red Currants and Gooseberries after pruning. A novice would at once say you had spoiled them entirely, whereas you know by experience that your berries are twice as large as when the bushes are unpruned; and your Currants, too, are larger in the berry and longer in the bunch, while, in some cases, you summer-prune as well, to let in the sun to ripen the wood. If this pays in the case of the small soft fruits, it will also pay in the case of the harder "top" fruit, and you all know too well that it is the best samples from reputed growers which command the highest prices, undersized fruits and spotted samples really bringing down the value of the entire crop. In a warm summer your fruit would be super-excellent, and in a wet or cold one, what you produced would be much finer and clearer than from neglected trees. Again, in the case of Raspberries, you cut off 2 to 4 feet of the canes—certainly to save sticking on the one hand, but you also know that you get much larger berries, and jam-makers do not like Raspberries that are all seeds, as they would be if the canes were left uncut. In neglected gardens the berries are not one-fourth the size of properly headed-back plantations. The most forcible example of the value of pruning is afforded by the Cob Nut. As pruned in Kent, the bush appears a miserable object after the pruner has done his work; but, as the result proves, we get a better crop, and the Nuts are far larger than those on bushes not pruned. In fact, if allowed to grow as they like, the Nuts are but a trifle larger than the Barcelonas of the shops.

Again, why is wall fruit so much finer than that from the open? Because such trees must be pruned to keep them in position, and, moreover, the spurs are always (in properly cared-for trees) thinned out, and naturally all face one way to catch the sun, and have the additional benefit of the radiation of heat from the wall to assist the ripening of the wood.



Fig. 86.—Currant pruning.

Having given you, perhaps, too much theory, I will now proceed to indicate how I would recommend the pruning to be done on young trees, say standards or half-standards. In planting, all that is necessary is to cut off any injured roots, and then to shorten back slightly the long anchor-like roots, taking care to cut in closely the tap root, or those roots that have a distinctly downward tendency. The tree should then have its head examined, the planter holding it so that he can, as it were, look it in the face on a line with the trunk. He will then see at a glance if there are more shoots than are required to form a symmetrical head, by preference three, five, or seven shoots placed at equal distances, like the spokes of a wheel. I mean if we can get seven, so much the better, but it is for the purpose of a foundation, preferable to have even three at a regular distance between each other, than to have four or five, the balance of which is uneven. All surplus shoots should be cut clean away, and the rest not cut or tipped in any way. The following winter (in February by preference, avoiding frosty weather), this head is to be cut back rather severely, say leaving five or six eyes at the base, but cutting so that there is one bud left pointing outwards at the extremity of the cut. From this cutting a mass of shoots will issue, and in July the pruner should go over his trees and cut back (leaving only 1 inch of wood) those that are in the middle of the tree, preserving at their full length all those that form a head like an inverted umbrella. The following February these are again shortened; but this time allow about 6 inches of the new wood, and continue the operation for a few years, when the trees will begin to bear on the old wood. Keep the centres of the trees thinned out, and do not allow too many shoots to encumber the tree, but cut so that all will hang free and not cross each other. Possibly, in a few more years, some of these may be cut away with advantage, and there will be stronger ones taking the lead, and provided they are in proper places, they may be allowed to go ahead. I consider this severe pruning necessary at first, because some fruits (notably, Manx Codlin, Stone's, and Lord Suffield Apples), if left uncut, form a mass of fruit-buds, and come into bearing, and never afterwards get beyond a mop-sized head. Some Pears and Plums have the same tendency.

In planting Plums (from the nature of their roots), if the planting is completed before Christmas, they may be pruned the first year of planting; but if done after that time it is better to allow them to wait one year. Their after-attention is the same as that advised for Pears and Apples, but as they grow more freely they need not be cut back so hard, as they form a head rapidly.

In planting Cherries, I strongly advise planters to let them stand the first year without cutting at all (except the roots as advised for Apples). In the following season cut them back as required, after which the less "knifing" done on them the better, merely removing the crossing boughs. As Pears have fewer roots than Apples, they must not be so severely cut.

The management of bush or pyramidal trees will be the same as that advised for standards, having regard to the form of tree desired, but as they are more protected from the wind, and the crop can be thinned, they may be left with longer shoots than standards. Apples upon the Paradise stock may be cut back the first season if planted early.

With soft fruits, the prevailing custom of cutting them hard the first year cannot be improved upon; but in case of late planting (say February or March) the resulting shoots are so thin and sappy that it may be best to let them stand a year to establish themselves before pruning. It is most desirable that they should be planted before December, as in that case the rootlets push and get a firm hold of the soil before winter sets in. In planting Raspberries for market, the canes may be shortened before planting to about 2 feet.

I now come to a more important point in pruning—namely, that of old or neglected trees, which are far too prevalent, and where faggots must be taken out to make any impression on the mass of useless wood they contain. In dealing with such examples we need to be very careful, for it is well known that large boughs sawn off Apples, Pears, Plums, and Cherries will sometimes result in decay, and in that case the tree suffers loss by heavy-laden boughs giving way at a weak spot. I am of opinion that it would be well not to cut these so close to the main stems and branches as is usually done, and that after the saw has been used, the surface should be planed over or smoothed with a knife, and the edges neatly rounded with a sharp knife, so that the new bark can creep over and cover the wound.

All old orchards have trees with holes in them—the favourite nesting places of the starling and tomtit. The wood decays, and the woodpecker first starts the aperture by searching for its food, and

* A paper read by Mr. G. Bunyard, at the British Fruit Growers' Conference, held at Leicester, August 5.

other birds take the opportunity to nest where they can readily make room in the soft spongy wood. All shoots over half an inch across should be rounded in the way indicated, and I strongly recommend that this pruning should be done as soon as the fruit is gathered, as the bark makes some progress to cover the wound the same season, and the air being dry, the wood hardens (so to speak, heals) more than in the winter; and, moreover, the shoots that are dead and leafless can be detected much more readily than when the leaf is off. Now that the strain of farm work is reduced by the grubbing of Hop land, more labour is at command for this work, and I must repeat, that all this severe pruning should be done in the summer or autumn. Especially should all broken and split boughs be removed from Plums where injured by an over-crop. I have heard of trees being severely injured by being pruned in a



Fig. 87.—Pruning Plum Shoots.

heavy frost, when the men could not work on the land, but I cannot say that it is always so. In pruning these "old stagers," it is not advisable to tip the branches, as the most lively wood, which draws the sap up freely, is on the points, and they nourish the tree.

The next point which I think worth a trial on a large scale is the thinning of the spurs. I have before me a fruiting branch of the old Yorkshire Apple, the Cockpit (a free bearer, but too small for profit). When the trees bear, I have half the fruit taken off, but although that makes the fruit finer, I am now thinning the spurs so that they may be larger still; and I am persuaded that if half the spurs were taken from our old orchard trees, which is easy work with a tool like the one I am using, we should have much finer fruit, and the spurs if cut about an inch from the stem would, in some cases, throw out other spurs, which in time would enable us to prune out those left in the former cutting, and thus we should have a youthful head on an ancient body. Pears are most profuse in the way they form spurs, and some kinds bear so freely, that they are not inaptly said to crop like ropes of Onions. In the case of Plums, it is the same. The Diamond would bear more freely if half its spurs were taken out; and the Victoria, under this treatment, would not be so liable to break down under the weight of heavy crops. Jefferson, again, is a mass of spurs; in fact, even in winter, an expert can tell the



Fig. 88.—Pruning Apple Shoots.

names of leafless trees by the form of the spurs, and the style in which they are set on the branches.

In removing what I may term surplus spurs, those found on the under sides of the branches are of little value, and if I say that the pruner should retain all those in the best positions, and remove the rest, you will get an idea how to work. The Crittenden, or Cluster Damson, is one which makes a mass of thorny spurs, and I think these require thinning, as if left too thickly on the boughs, the fruit is very small; and you will have noticed that the trees from suckers are much more inclined to thorn than thosethat are budded, which partake more of the Plum nature. The King of the Pippins and Manx Codlin Apples, for example, are very fruitful trees, and I know that those who prune them on the spur system, and shorten all the young growth, defy the inevitable canker which affects these sorts. These close-pruned trees grow marvellous fruit, which sells at a price that pays for the extra labour employed. Such kinds as Court Pendu Plat and Keswick Codlin, again, make too many spurs.

I can scarcely leave the subject of pruning without reference to the Kentish Cob Nut—a subject which requires more cutting and pruning than any other fruit.

When received from the growers, these trees have a small head upon a stem of 12 to 15 inches, and this stem is intended that the ground beneath the bush may be the more readily kept free from weeds and dug. They are planted as received, and



Fig. 89.—Pruning Shoots of the Filbert.

allowed to grow for one year, when they should be cut hard in, to make them throw out vigorous shoots from the base of the shoots to form the head of the future bush. This is done by annually cutting, so that the next terminal shoot is made from an under bud, which in course of time makes a bush formed like a washing basin. I note the best shaped bushes have started with six, to be doubled to twelve main branches. From these a set of spurs or short shoots are given off, on which the nuts are produced, and the bushes should be so managed that at the end of 100 years old they should be 15 or 20 feet across the top, but not higher than 5½ feet from the ground. From the bent portion of the main boughs, a number of strong yearling shoots will be given off, which in Kent are called wands. These are taken out in summer, or partially so, for packing the autumn fruit; and in winter, the rest are broken out, and either sold for flower sticks or basket making, or

reserved for use in packing soft fruit the next season. The male blossoms or catkin are produced most freely on the upper part of the bushes, and should be allowed to remain long enough to fertilise the pistillate or female flowers, which are produced on the smaller boughs. When the weather is very still and warm, it will pay to tap the boughs with a stick, to make this pollen fly about. When winter pruning, the spurs are thinned, and, if need be, stopped. Old wood is removed, and the stronger growths shortened and thinned, leaving the bush regularly balanced on all sides, and with free play for the air and sun among the branches, remembering that the foliage is large on pruned bushes. If time permit in July or August, it is a great help to the strength of the bush to break the stronger shoots off the upper boughs with the finger and thumb (a sharp twist being all that is required), this plumps up the buds below the fracture, and assists the ripening of the wood, and it is found better than cutting, as the broken surface allows some sap to exude, and this prevents the formation of a secondary growth, which would weaken the bush, and be of no value to produce Nuts. In pruning (in winter), these cut ends are smoothly severed with a sharp knife. A careful pruner will so proceed that there is always abundance of fresh young wood in his bushes, and when a twig shows signs of age, he cuts so that a young one shall succeed it in the next year's cutting, so that worn-out twigs are never seen in ancient trees. Suckers from the roots should be hoed off in growth or severed with a sharp spade, and if well rooted, some may be reserved to make future plants.

In continental works on fruit culture, much stress is laid on the tools used. A few which we find useful as labour-savers are:—1, Coppin's tree pruner—avoiding the use of ladders in young trees; made from 6 to 10 feet long. 2, American lightning saw, very easy and rapid in its work; capital for green wood. 3, Belgian sécateurs for pruning. 4, Aubert's Parisian sécateurs. 5, Clasp and sheath knives.

The figures which illustrate the above lecture are reproduced to show the best methods of pruning the bearing shoots. Ed.

THE APIARY.

BEE-KEEPING AS A RURAL PURSUIT.

To *bee* or not to *bee*, that is the question. We have not only always heard that bee-keeping is a pleasant and profitable industry, but having kept bees for many years, have found it so in our own experience. During this inclement summer (?), our faith wavered somewhat, and as the rain poured down day after day, sometimes the first sentence of this article would come into our minds, but common sense at length asserted its supremacy, and again our hopes are strengthened for another year. After a storm comes a calm, and it has been noticed before that when there has been a great dearth of honey one year, there has been a plentiful supply the next, and so we have given our bees that which by Nature they could not have, viz., a plentiful supply of sugar and syrup, and covered them up for the winter, and without any wavering, trust they will do better next year. Being rather superstitious, we may perhaps put a little sugar on the alighting board on Christmas Eve, and if, as tradition says, the bees come out and lick it up, well and good, if not (which is most likely to be the case), it will melt.

But to the point. We have ourselves always been amongst the instructors of youth. Nevertheless, it seems that some kinds of education are now being carried too far, and others not far enough; and it seems in the very near future that more attention will have to be given to trade, and especially to agricultural and pastoral pursuits, if we are to retain our proud position in the world. There is no doubt that bee-keeping, poultry-keeping, Mushroom-growing, and small fruit-farming would prove profitable employment for numbers of people who now do not know what to put their sons to.

We have mixed up bee-keeping and gardening with scholastic pursuits for years, and have found it healthful and profitable. Honey is now being used for many purposes by various firms in immense quantities. We heard the other day of a working man who took 300 lb. of honey to a large firm; he told one of the partners he had it for sale, and if he chose, he could have it 10 lb. at a time. "Bring it all here at once," said the gentleman; "it will last us about ten minutes." The same firm, we are told, uses scores of tons of honey every year. The noted Cocoa makers, Messrs. Fry & Sons, of Bristol, use large quantities of honey daily in the manufacture of honey chocolate, both in cakes and drops. It is now being acknowledged by the greatest living authorities that honey is the most wholesome sweet, and the old patriarch Jacob did well to send the favoured son of his beloved Rachel "a little honey." These are only one or two instances of the uses of honey. Their name is legion. Now we have heard of butterine, but we have never heard of honeyine, and as the vicar's son Moses said, "whatever is, is," so honey is honey. But it cannot be obtained without keeping bees; therefore, the intelligent keeping of bees is a profitable and pleasant rural industry. Methinks that one says that bees sting. So they do. Dogs also bite, but are they therefore to be annihilated in consequence? There are ways of obtaining absolute control over bees, so that they may be handled as flies. Let the dark evenings of the coming winter be spent in reading some of the numerous works on bees, so that when sweet spring and hope return, more may be able to take up this delightful pursuit. After a turn of work at the bees in our garden, good digestion will wait on appetite, and health on both. *Agnes.*

The Honey Harvest in Upper Speyside.

Apiarians in upper Speyside districts have, this year, suffered from the unfavourable weather; but still they seem to have been on the whole more favoured than other parts of Scotland. The occupants of many hives were destroyed in the early summer by the rawness of the air, and bee-masters generally had to resort to feeding till an unusually advanced period of the season. Some fine days were, however, enjoyed during July and August, and in September the weather was uniformly fine. The bloom of the Heather being exceptionally rich, such stocks as had been carefully attended to succeeded in storing a large quantity of very fine honey. The two largest bee-masters in Speyside are Mr. John Macdonald, Lynchat, Kingussie, and Mr. D. Grant, merchant, Kincraig. At the Kingussie flower-show, the first-named gentleman had on exhibition about 1 cwt. of splendid Clover and Heather honey, the judges remarking on the excellence of the quality considering the generally unfavourable character of the season. Since then he has extracted about 1000 lb. of Heather honey, the average per hive being about 40 lb. Mr. Grant took from his twenty hives an average of about 35 lb., beautifully finished. Others on Speyside possessing smaller stocks have been similarly successful, so that the season has turned out really much better than was at one time anticipated.

PLANTS AND THEIR CULTURE.

The Stove.—Most plants will be approaching their season of rest, and the moisture in the house should be reduced in amount, and the plants watered sparingly. All shading, except in the case of plants making late growth, should be dispensed with, and every encouragement given to the maturing of the season's growth. Cut back climbers to smaller dimensions, allowing them to run only along the rafters, so that they will not exclude much sunlight. The day temperature should be gradually reduced, and may now range at from 70° to 80°, with air given freely in the morning during bright weather, and always affording a small amount of heat on wet or cloudy days so as to dry the air. The night temperature may now be 65° to 70°, and the house closed early. If the stove is insufficiently heated, and a lower temperature has to be maintained in consequence, the plants will require less water than those growing in greater warmth, and the blinds may be utilised on frosty nights. The watering of plants should now be done in the morning. With less moisture thrips will increase, and plant cleaning will require constant care. Crotons especially should get a thorough damping all over whenever the weather is bright, and if the plants are badly attacked, some kind of insecticide may be used, or light fumigation for several nights in succession should be adopted.

Large plants may be reduced in size by pruning the shoots and tying them in closer. Ixoras should be cut back and kept drier at the root for a few weeks. Dipladenias require shortening back, and a like treatment. Afford plants still in bloom all the light possible. Aphelandra Roezlii and A. aurantiaca should be encouraged to make sturdy growth. Poinsettias should now be afforded more warmth, or the plants will loose their leaves; and a few may be brought on quickly, and any that may be standing in the intermediate-house must be sparingly watered.

Caladiums and Achimenes gradually dry off, and stack the former under the stages out of the reach of drip; they will not do with a low temperature when at rest. Gloxinias, as they lose their foliage, should be placed in their winter quarters. Late-sown seedlings should be put in a light place, in a temperature of 60°, and afforded liquid manure, so as to develop their flowers. Plants of Plumbago rosea will take frequent supplies of weak liquid manure if in robust condition. The earliest plants of Gloriosa should be rested by affording them less water, and by keeping the bulbs in a cooler house. Place any Cactus Epiphyllum in bloom at the coolest and driest end of the stove, and when the blooms are fully open, the plants may be removed to the intermediate-house. Varieties of Coleus may be struck in small pots for stock, the old plants being thrown away; the young Coleus may be wintered on a shelf near the glass. Any Gardenias which are showing their flower-buds should get weak liquid manure; their blooms will prove most useful presently. Young plants of Gardenias of various species should be kept close to the glass; a watering with soot-water once a fortnight will give a deep green colour to the leaves.

Urceolina pendula is an easily-grown bulb, that will now be useful in stoves, and it is one that should be generally grown, it being free to flower, and lasting for a long time. It does thoroughly well under Amaryllis treatment, and its bright golden flowers are, in the dull months, very acceptable. *Geo. Wythes, Syon House, Brentford.*

THE ORCHID HOUSES.

East India-house.—Cypripediums will now assist to keep this house gay with flowers, and the beautiful C. Spicerianum, which every orchidist should grow, is one of the best at this season, and in winter flowering it is one of the easiest Cypripediums to cultivate. Other good Cypripediums in flower are C. œnanthum superbum and C. vexillarium. The temperature of the house should be allowed to gradually decline, and with this lessening of warmth the air should be kept drier. Such plants as Saccolabium cœleste, S Hendersoni, and S. giganteum will require very little water at the root, for much watering causes rotting of the tips of the leaves. The best way to ascertain when these plants are in need of water is to watch the lower leaves, and as soon as shrinking is observed in them, to water the plants, but not before. Vanda Denisoniana is also very subject to "spot" if kept wet for a short time in the winter; on the other hand, the Angræcums will quickly resent being kept in a dry state, in fact, few Orchids seem to object to a dry atmosphere, and being kept dry at the roots more than Angræcums, with one exception, A. falcatum, which does best in the Intermediate-house; consequently, these plants should, as far as is possible, be got together in a warm part of the house, so that special treatment may be afforded them. The new Dendrobium Statterianum is really a grand acquisition to our winter-flowering Dendrobes, being free in growth, very floriferous, and the flowers remaining a very long time in perfection. The temperature of this house should now range from 63° to 65° at night.

The Intermediate-house.—The various species o Vanda will now assist to keep up a good show of flower

here. Lælia pumila, Odontoglossum grande, and the Pleiones are also excellent for keeping up a cheerful display, and all of them are easily-grown plants, and comparatively cheap to buy. This house should be well ventilated at the top and bottom, and the temperature allowed to fall as low as 55° at night. *A. G. Catt, Parkfield, Hallow, Worcester.*

The Flower Garden.

Frost has commenced to play havoc among the summer bedding plants. If it is intended to replace these with spring bedders, no time should be lost, as the weather is now dry, and will greatly facilitate the work, and give the plants a chance to re-establish themselves before bad weather sets in.

Beds of one colour, with an edging of some other contrasting, are far preferable to mixed beds, or lines. For example, large beds may be filled with dark Wallflowers, edged the dwarf yellow varieties; Myosotis, edged with yellow Primroses; Silene pendula compacta, raised in the centre, with a good margin of Stachys or Cerastiums, forms a very effective combination; Polyanthuses (gold-laced) may be edged with yellow Primroses, or the double white variety, or again with white Daisies; while the yellow or white Polyanthus may be edged with the darker forms of Primroses or Daisies. Very small beds are better filled with one variety only, and that of dwarf habit. Other varieties from which selections may be made are:—Aubretia, Arabis, Iberis, Saxifraga flore-pleno, Saponaria, Alyssum, Hepatica, all of which should be planted moderately thick, as they will not increase much in size.

Evergreen shrubs and trees are frequently used for filling up very large beds during the winter months, and may be used with good effect if they are planted in masses. There are among these, many shades of colour, and habits of growth, so that imitations of summer-bedding may be indulged in. Among varieties suitable are the Gold and Silver Hollies, Aucubas, Osmanthus Acquifolius var. illicifolius aurea, and O. A. variegatus nanus, Euonymus japonicus in several varieties; Retinosporas; Laurustinus, Cupressus, in variety; Box, in variety; Ericas carnea, alba, and rubra; Yuccas, &c. Many of these may be edged with some of the hardy summer or spring bedding foliage plants such as Stachys lanata, Cerastium, Cineraria maritima, Golden Pyrethrum, Euonymus radicans variegata, Vinca elegantissima, and variegated Thyme, all of which are equally as suitable for edging beds filled with shrubs and Coniferæ as for other flower-beds.

Bulbs should now be planted. Those required for special beds should be purchased fresh every year, as very few do well a second season, and as a rule may be relegated to the mixed or shrubbery borders. Most kinds of bulbs create the best display if planted in separate colours, though Hyacinths are charming, if mixed carefully, but Narcissus, Tulips, Crocuses, Scillas, Snowdrops, should certainly be planted in colours. The distances generally given for planting bulbs are:—Hyacinths, 9 inches; Narcissus, 6 inches; Tulips, 5 inches; Scillas and Snowdrops, 3 inches; and from 3 to 4 inches deep. Bulbs may be planted in the beds filled with shrubs or Conifera, provided the taller-growing varieties are selected for the centre. *D. C. Powell, Powderham Castle, near Exeter.*

Fruits Under Glass.

Pine-apples.—If the arrangements for wintering the plants have not been completed, there should be no further delay, as any further disturbance of the plunging material after this date is likely to set up new fermentation, and an undue excitement of the plants after the late reduction of the night temperature. In watering, simply give the plants sufficient to keep the soil moist, and rather on the dry side than the wet. If the plunging material be kept moist, the soil will absorb nearly sufficient moisture through the pot-sides during the short, dark days. Fruiters of the Smooth Cayenne section, which are swelling their fruit, must receive encouragement with warm liquid-manure or guano-water. Keep the air warmth at night at 70° as long as the weather remains mild, with a day temperature of 10° or 15° higher. If the house is a high one, much fire-heat may be avoided by covering the glass at night with oil-canvas or mats. Atmospheric moisture, as a matter of course, must be in proportion to the amount of heat employed, and which can best be secured by syringing the walls, paths, and the surface of the bed. As the fruits show the signs of ripening, liquid-manure water must be discontinued, in fact, the least possible amount of water should be afforded the plants. When quite ripe, Cayenne Pine-apples will keep several weeks after being cut. They should be hung up crown downwards in a dry cool room, which is preferable to removing the plant and fruit to a low temperature, it being less detrimental to the suckers, and good suckers are a *desideratum* if fine fruits are looked for. Black Prince Pine, so seldom met with now, is a delicious Pine when it is so managed as to show for fruit in the summer, but any "shows" at this time of the year are useless, for in the winter time the fruit does not finish ripening at the top before the base begins to decay. Lord Carrington is another sweet, full-flavoured Pine, adapted for summer and early autumn, but its leaves are very lengthy, and the plants require much space. Full-grown plants of any of the Queen section, if intended for spring and early summer fruiting, must be kept as quiet as possible, as following this rest, or cessation of active growth, the plants may be brought into activity in batches according to the requirements.

Successions and Suckers, which it is desirable should be kept steadily moving through the winter, cannot have too much space, neither can they be kept too near the glass, providing the points of the leaves do not touch it. The pits should be kept clean. Suckers that were potted a month ago, will have roots touching the sides of their pots, consequently they will require occasional waterings with tepid-water. Keep the bottom-heat steadily at 70° to 75°, and the day temperature at 70°, and the night at 60° to 65° till the weather gets colder.

Stores of Soil, &c.—Now is a good time to replenish the stock of turf for potting. Good holding loam, neither too heavy nor too light, and such that does not lose its fibre too quickly, is to be chosen. I prefer to stack it in ridges, set out 1 yard wide at the base, 6 yards in length, the turves being cut about 2 inches thick, and between the layers of the stacks crushed bones with old decomposed night soil that had been originally mixed with sharp grit and wood-ashes is added, and when the heap has laid undisturbed for some months it will be well mixed and pulverised. Stack it in moderately-dry condition, and use something on the top to run off rain and snow. Such compost comes out sweet, and ready for use for spring potting.

Tomatos, for winter bearing, ought to have a strong early start, and a good crop of fruit set with the help of a camel-hair pencil before the days become short. The plants should be trained thinly, or grown as single cordons from cuttings, over the roof of a forcing-house kept at a medium temperature; the branches or cordons should be 12 inches apart, but no side branches should be allowed to form. Strong bunches of flowers will appear at short intervals, and these ought to be followed by clusters of fruit, if a good setting kind be grown, such as the Old Red. If they fail to set properly, it is either the result of too rich or too loose a soil, or else too high a temperature. Ventilation must be abundant; but not draughty. *W. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

Pruning.—Pruning fruit bushes may be pushed forward with speed. No doubt much of this chilly work must be done in bad weather in the best-regulated gardens, but a little forethought will not unfrequently tend to mutual advantage, as gardeners know that all such work proceeds slowly, and is done imperfectly when the workmen must be perpetually buffeting their hands to keep them warm.

Currants in the south are quite ready for pruning, and should be the first to be pruned. Red and white Currants do best when closely spurred and the leading shoots topped, keeping the bushes balanced, and the old shoots replaced with young ones. If the Currant caterpillar was present in the summer, the cut-off shoots should be burnt without delay, the soil removed from beneath the bushes to the depth of 3 inches, and the soil dusted well with fresh lime and soot. Replace the soil taken away with fresh loamy soil. For the past two seasons the sawfly (Nematus Ribesi), has been more than usually common. It is often mistaken for the Gooseberry moth (Abraxas grossularia); although their habits are much the same, they are different in their general appearance. Wasp traps, bottles, &c., partially filled with sugar and beer, or honey and water, entrap great numbers of these insects.

Raspberries.—These should have attention after the Currants, and assuming that the canes were thinned out when the fruiting canes were cut off, little will remain to be done. All canes should be regulated and securely tied to trellises or stakes, shortening back being deferred until later. Clear weeds off the ground, and prick over the surface. In exposed gardens it is well to tie all canes with small tar-twine, otherwise the pressure of wind snaps the bast matting, and the work has to be gone over again. The autumn fruiters are still carrying fruit on borders with a north-west aspect, and should be left untouched by the pruner for a time. A good mulch of rotten manure will make all safe for the winter.

Strawberries.—The plantations of these, owing to the mild weather, are throwing up quantities of bloom, and unless these are removed the crowns will be reduced in strength, and not only are the forced plants which were planted out in early summer doing this, but also those two-year planted. Alpine Strawberries must have all runners cleared off, but all the mature leaves left on the plants. If at planting time the new beds were only lightly mulched, it is a good time to give them a heavy dressing of rich manure, which on light soils may consist of one-half cow manure. Runners which were layered in small pots for spring planting, should now be plunged over their rims in coal-ashes. I may note that we are gathering two and three dishes of good ripe Strawberries each week from the open quarter, from forced plants that were put out, of Vicomtesse Héricart de Thury, Laxton's Noble, and La Gross Sucrée. *A. Evans, Lythe Hill, Haslemere.*

The Kitchen Garden.

Cauliflowers.—The varieties Autumn and Self-protecting—two of the most useful varieties grown for autumn use—will now be turning in, and to maintain a supply, it will be advisable to go over the quarters almost daily, and lift those that have formed heads, and heel them in on a sheltered border. In this way, if slight protection be afforded them in severe frosts, they will keep good for several weeks. Plants under hand-lights and in cold frames should be kept well supplied with water at the roots, and the surface-soil frequently stirred. No protection will be needed by these young plants, excepting on frosty nights, when the lights should be placed over them, taking them off in the morning when the temperature is at a safe point.

Vacant Plots.—These should be trenched or dug, according to the needs of the land, and, if it be light, plenty of manure should be dug in, and the surface left rough. Heavy soils may be left undug until later, this kind of soil running together so tightly when dug at an early date, that it requires a second digging to prepare it for seeds, &c., and then the manure gets brought to the surface—an undesirable state of matters.

Potatos.—Any late varieties not yet dug up, should not be left any longer in the ground. Dig and store them on a dry day, for good keeping depends in a great measure on storing the tubers when dry. Potatos in clumps should be picked over before finally closing the clamp, the diseased tubers, if any, being removed and destroyed.

Mustard and Cress must now be raised in warmth in shallow boxes of leaf-mould, quite free of sand, made moderately firm, and watered, the seed being pressed gently into the soil, and the boxes covered with pieces of boards or slates until the seed sprouts. *H. Markham, Mereworth Castle, Maidstone.*

Fruit of Magnolia Lenne.—From Mr. Ellacombe's garden at Bitton, Bristol, we have received a well-developed fruit of Lenne's Magnolia, which greatly resembles that of Magnolia acuminata, the Cucumber tree. The pod may contain from fifteen to eighteen seeds of the size of a Fulmer's Forcing French Bean, and they are of a pink colour.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOW.

WEDNESDAY, Oct. 22—Royal Horticultural of Jersey.

SALES.

MONDAY, Oct. 20
- Dutch Bulbs at Stevens' Rooms, and also at Protheroe and Morris' Rooms.
- Nursery Stock, at the American Nursery, Leytonstone, by Protheroe & Morris (four days).

TUESDAY, Oct. 21
- Nursery Stock, at the Piltdown Nurseries, Maresfield, by Protheroe & Morris.
- Clearance of Nursery Stock, on the Southend Park Estate, by Protheroe & Morris.
- Lilies at Protheroe & Morris' Rooms.

WEDNESDAY, Oct. 22
- Dutch Bulbs, at Stevens' Rooms, and also at Protheroe & Morris' Rooms.
- Clearance of Nursery Stock, at the St. Martin's Nursery, Canterbury, by Protheroe & Morris.
- Established Orchids, at Seeger & Tropp's Nursery, East Dulwich, by Protheroe & Morris.

THURSDAY, Oct. 23
- Established and Imported Orchids, at Stevens' Rooms.
- Nursery Stock, at Bedford Road Nurseries, Northampton, by Protheroe & Morris.
- Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, Oct. 24
- Established and Imported Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Oct. 25
- Dutch Bulbs, at Stevens' Rooms, and also at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—48°.8.

Jams and Preserved Fruits.

We had awaited with much curiosity the exhibition instituted by the Royal Horticultural Society of the articles of food which are usually included under the heading given above. It was, doubtless, hoped also by the Society as by ourselves, that the private makers of preserves—and they must be exceedingly numerous in our rural districts—would have given their support to the Society, and thus have aided the large manufacturers in making an exhibition worthy the name.

The display, unfortunately for people in general who like preserves, and see the need for the further development of the trade in them in this country, was not at all equal to the expectations and hopes of those concerned in inaugurating it. So much the worse for all of us. Perhaps the failure to bring the matter to the notice of amateurs in good time may be accountable for the smallness of the show; but, from whatever cause, the housewives of the country did not put in an appearance. So that we are still in comparative ignorance of what their capabilities may be in the art that is, as regards many households, becoming obsolete. Most middle-aged persons can recollect the time when home-made preserves were to be found in almost all households in the country, and were by no means unknown in urban ones; and the same was also true of wines made from bush fruits and Grapes ripened on sunny walls. Perhaps the ready communication afforded by the advent of railway and steamboat has altered all this, and has also helped to bring fruits preserved in a variety of ways from the Continent, and from America, to the tables of the humblest in the land. We do not think that this is altogether a matter which we should deplore too greatly, as without this influx of foreign products, many of our people would have gone wanting. But to the Englishman, this incident of the business has naturally provoked a desire to excel in the manufacture of preserves of such fruits as his not too unfavourable climate allows him to cultivate successfully. Hence the rise of the great firms, the goodness of whose wares has become a household word, and the noticeable dwindling of private manufacture.

The exhibits of the few firms of preservers at the Drill Hall on Tuesday showed how well these goods look to the eye, and how much can yet be done in this country with the fruits that we possess. Those who obtained Medals on that occasion, namely, Messrs. T. W. Beach & Sons, Brentford; Chivers & Sons, of Histon, Cambridgeshire, had the most diversified exhibits, tastefully set up in the glass jars or bottles, in which they are retailed to the public. Messrs. Veitch & Sons, Chelsea, had the most novel and interesting exhibit in the Hall, consisting, as it did, of sweetmeats, preserves, and nuts and seeds consumed by the Turk at Constantinople, and we doubt not in other populous towns in Turkey and the East generally. Our readers will find a full list of these comestibles in our report of the show on another page. The fruit syrups seemed particularly nice to the senses of sight and smell, and all were tastefully placed in stoppered bottles of clear glass. We recognised an old acquaintance in the syrup of the Cornelian Cherry, and ordinary Cherry, and Mahaleb Cherry, and in seeds of the Sunflower and Pumpkin.

The cider from Messrs. Gaymer & Son, Attleborough, Norfolk, was very good of its kind, and reasonable in price, as it should be. Some vegetables dished up as fruit looked fairly appetising, and we can understand such substances taking the place of fruits in a bad fruit year, or on the score of economy.

What we missed were the dried fruits, of which our growers of Apples, Plums, and Cherries might make enormous quantities in abundant fruit years, instead of allowing so much fruit to remain ungathered, or to fall from the trees and rot on the ground.

Perhaps when the readier and cheaper methods of drying employed on the Continent become known in this country, fruit will be more generally so treated by our growers and manufacturers. We should like to see a preserve made that would resemble the Bovidal or Plum jam of Hungary and Bosnia, which, being made by long boiling without any added sugar, is cheap and wholesome, and excellent for *compotes*, and keeps for years without deterioration.

The matter of preserving fruits should not be taken in hand by the Royal Horticultural Society alone, but is one in which the larger horticultural societies of the country should endeavour to take a share, and afford encouragement to, by the offer of reasonably large prizes.

The Treasurer of the Royal Horticultural Society. — The following has been forwarded to us for publication:—"Mr. D. Morris is about to resign the post of Honorary Treasurer to the Royal Horticultural Society, which he has held for such a length of time. At a meeting of the Council held on the 14th inst., he formally tendered his resignation. Mr. Morris is about to sail to the West Indies on a Government mission, and as this will necessitate his absence from England for a period of three or four months, he feels that under these circumstances he could not attend to the duties of Treasurer to the Royal Horticultural Society to his entire satisfaction. During Mr. Morris's term of office he has been most energetic in bringing the financial affairs of the old Society to a satisfactory state, and that he has succeeded, and his services been appreciated, may be seen from the following resolution passed by the Council:—'The Council of the Royal Horticultural Society, in accepting with unfeigned regret Mr. Morris's resignation of the post of Honorary Treasurer, which he has filled with such signal success and advantage to the Society, beg to express to him their grateful sense of the value of his services, of the judgment and discretion with which he has conducted his duties, and of the devotion with which he has in every way forwarded the interests of the Society.'"

Pavilion in Finsbury Square, London. (See Supplementary Sheet). — The pavilion, of which we give to-day a photogravure, was designed for the Committee of Finsbury Square Gardens, London, by Mr. Fawkes, author of *Horticultural Buildings*, and constructed by the firm of Crompton & Fawkes, of Chelmsford, Essex. The building is cruciform, 24 feet by 18 feet, and nearly 40 feet high to the top of the finial. The whole of the mouldings and details were designed specially for this building, and the mouldings are very refined and delicate. All the sashes are double moulded in the solid, so that the raw, plain appearance on the glazing side of the sashes is entirely avoided. The mullions have pilasters with moulded caps and bases. Each of the gables faces a different way, and is similarly ornamented by enriched panels in relief. The roof is covered by red tiles, and the interior has a mansard ceiling of pitch Pine. The building is placed on a mound in the central part, and is partially hidden by shrubs and a few trees of medium height. It is therefore relieved of the harsh, rigid appearance which new buildings usually possess. The trees and shrubs, which are grown with a fair degree of success in the Finsbury district, which is one of the smokiest of central London, consist of a larger number of species and varieties than would commonly be supposed. In the Square we find Elms—Ulmus lucida and U. montana Wych Elm, and its weeping variety; U. campestris does not grow so well, and loses its leaves at a late part of the summer. The Lombardy or Black Poplar, Populus nigra, is a tree that does well, and grows to a large size, besides retaining its foliage till late in the autumn, as do the Oriental Planes; and it is one that is found in the Square in small numbers, but largely planted in Finsbury Circus Garden. Lilac and Privet find a good deal of employment either as hedge plants or in other ways. The turf in the Square is as fresh and healthy-looking as one could wish, yet firm and elastic to the tread.

The Guildhall Fruit Show: A Present to the Queen.—On Thursday, the 9th inst., some sixty dishes of the finest varieties of Apples and Pears exhibited at the Guildhall show from many parts of the country were forwarded to Her Majesty at Balmoral, by the Fruiterers' Company, in order that Her Majesty might see what fine fruit can be obtained in this country. The superb examples of Peasgood's Nonsuch Apple, shown by Mr. Barlow, and the dish of fruit of Pyrus spectabilis, from Messrs. J. Cheal & Sons' collection, represented the two extremes of size in the collection. With the fruit was also forwarded a handsomely-bound copy of Mr. J. Wright's prize essay on "Profitable Fruit Growing." A similarly bound copy was also presented to the Lord Mayor. The extent of tabling required for the exhibits at the Guildhall amounted to 11,700 superficial feet; and 4,500 plates were required to accommodate the fruit.

Apple Peasgood's Nonsuch.—The five very fine examples of this Apple staged by Mr. Samuel Barlow at the recent show at the Guildhall were grown by him in an orchard-house at Shimddahir, his residence at Llandudno. The tree is of bush



PAVILION IN FINSBURY SQUARE.

DESIGNED AND CONSTRUCTED BY CROMPTON & FAWKES, CHELMSFORD.

form, 5 feet in height, and six years of age, and it produced fifteen fruit. The weight of the five Apples was 9 lb. 2 oz.; the smallest weighed 27 oz., and the largest 30 oz. Last year this tree also produced some very fine fruit, which created quite a sensation when exhibited at Manchester.

United Horticultural Benefit and Provident Society.—The quarterly meeting of this Society was held at the Caledonian Hotel on Monday evening, October 13, Mr. G. W. Cummins, in the chair. The committee are pleased to report that the Society continues to make steady progress, both financially and numerically. No death has occurred amongst the members during the quarter, and there is only one sick member on the funds. All members are invited to contribute to the Convalescent Fund, which was opened in July last. The fund is voluntary, and entitles members to a sum not exceeding 30*s.* for change of air after illness. Letters were read by the Secretary on various subjects, and the usual vote of thanks to the Chairman ended the meeting.

Honours to Nurserymen and others.—In the official list of the jurors' awards at the Edinburgh International Exhibition just issued, we observe the under-mentioned firms have received honours:—Thomas Methven & Sons, nurserymen, Edinburgh, the Diploma of Honour for a collection of Conifers and decorative plants. James Carter & Co., seedsmen, &c., High Holborn, London, the Diploma of Honour, for an exhibit of Wheat. Dicksons & Co., Waterloo Place, Edinburgh, the Gold Medal, for a collection of Conifers and decorative plants. David Lowe & Sons, hot-house builders, Edinburgh and Manchester, the Gold Medal for an ornamental conservatory. James Dickson & Sons, Hanover Street, Edinburgh, the Silver Medal for a collection of Conifers and decorative plants. Mackenzie & Moncur, horticultural builders, Edinburgh and Glasgow, the Silver Medal for an ornamental conservatory. J. G. Inman, Stretford Road, Manchester, the Silver Medal for rustic houses, garden seats, and vases. John Petrie, horticultural builder, Edinburgh, the Bronze Medal for an ornamental conservatory. M. Brodie Sherriff, West Bank Potteries, Portobello, N.B., the Bronze Medal, for excellent fine art garden pottery, terra cotta vases, &c.

Primroses in Bloom.—A correspondent at Hawkhurst, Kent, tells us that wild Primroses were to be found in bloom on the 2nd inst., he himself picking eleven fully-open fragrant flowers from one root.

Memorial to the Late William Holmes.—A well-attended meeting of the members of the National Chrysanthemum Society and friends of the late Hon. Secretary, took place in the Board Room of the Royal Aquarium, on the 15th inst., over sixty persons being present, when Mr. R. Ballantine presided. The Chairman said a widespread feeling existed in favour of some memorial being raised to their late friend and colleague. A resolution having been unanimously passed affirming the expediency of raising a memorial fund, Mr. E. Molyneux, Mr. D. B. Crane, and others put forth suggestions; and eventually a committee of sixteen persons, with the officers of the Society as *ex officio* members, was formed, with Mr. Castle as Hon. Secretary.

Southwark Park.—The show of Chrysanthemums will be opened at Southwark Park on Saturday the 18th, and will continue to be open to the public daily during the season of bloom from 10 A.M. till dusk.

National Auricula Society.—National Carnation and Picotee Society.—The annual general meeting of the above Societies will be held in the room of the Horticultural Club, Hotel Windsor, Victoria Street, by kind permission of the members, on Tuesday, October 28, 1890, at 4 P.M. precisely. The business of the meeting will be, the election of officers and committee, receiving the Secretary's and Treasurer's report, the election of judges for the ensuing year, and any other necessary business as may pertain to the annual general meeting. *James Douglas, Hon. Secretary.*

Mr. John Hancock.—This well-known naturalist died at his residence at Newcastle-on-Tyne, on Saturday, October 11, in his eighty-fourth year. He inherited a taste for natural history from his father, and to the departments of entomology and ornithology early devoted his attention. The results of his life-work in the direction of taxidermy now adorn the shelves of the Museum of the Natural History Society at Newcastle, and they form one of the finest collections of British birds in the kingdom. In 1851, at the Great Exhibition in London, Mr. Hancock exhibited a series of groups illustrative of falconry. These are now in the Museum at Newcastle, and form part of the collection presented to the Natural History Society.

Grape Culture in Beluchistan.—Mr. Cleghorn describes the method of cultivating Grapes in trenches about 1½ foot deep by 4 feet wide, the earth removed being heaped on the edge of the trench to about 2 feet high, the trenches running parallel with each other. The rods are trained over the banks and kept short, the plants being 10 feet apart in the trenches. "When Mulberry trees are available, one Vine is always trained on a tree, and in this case the main stem is kept long. I have seen some stems 6 inches in diameter." Melons are grown in the same way, but the space between the trenches in their case is 12 to 15 feet, whereas it is of 6 feet where Vines alone are planted. The trenches are flooded with water once in eight days. Grapes grown in trenches are more prolific than those on trees.

Royal Horticultural Society of Aberdeen.—The Acting-Directors of this Society met in the Secretary's Office, Bridge Street, Aberdeen, on Friday evening, October 10, Mr. Alexander Robson, Vice-Chairman, presiding. The draft report and statement of accounts, showing a surplus of £60 6*s.* 5*d.*, were approved of. The annual meeting of the Society was held on Saturday, October 11. The meeting unanimously agreed to request Mr. James Murray Garden, Advocate, Aberdeen, to continue to act as Chairman of the Society. Mr. Robson was thanked for presiding.

Consols.—The Bank of England gives notice that they are prepared, in accordance with instructions received from the Treasury, to give Facilities for the Investment of Dividends on Consols, and to undertake the investment in the same Stock, of the quarterly dividends upon £2 15*s.* per cent. Consolidated Stock, commonly called "Consols." The investment of a dividend will not take place until about a month after it is due, thus giving a stockholder the opportunity of taking any particular dividend if circumstances render it desirable. Such taking of any dividend, or dividends, by the stockholder will not interfere with the investment by the Bank of England of subsequent dividends. For each pound, or part of a pound, invested, there will be a charge of one penny. Should a stockholder wish to be informed of each investment, the Bank of England will furnish particulars for an additional charge of 3*d.* per quarter. These charges will be deducted from the dividends before the investments are made. Orders for the investment of dividends will be cancelled by the death of a stockholder; or, by the Stock reaching the sum of £1000; and may, at any time, be withdrawn in writing. Forms can now be obtained on personal application at the Head Office of the Bank of England, or at any of the branches. Written applications should be addressed to "The Chief Accountant, Bank of England, London." In a short time forms will also be obtainable at Money-order offices.

Beluchistan Fruit.—Mr. J. Cleghorn, writing (in the *Proceedings of the Agricultural and Horticultural Society of India*) from Peshin, referred to the profusion with which Apples and Grapes grow in Beluchistan. He sent several boxes of fruit, packing them in different ways, in the hope of finding the best method of packing them for the long journey of six days from Peshin. The Apples sent by Mr. Cleghorn were of a small variety, about the size of Crab-apples, but sweet, though with but little flavour. They grow in great quantities in ropes and bunches, and are sold at an exceedingly low price. The fruit, when ripe, has a transparent yellow or almost white skin, and is of a very attractive appearance. Of the Grapes, Mr. Cleghorn wrote:—"A Pathan knows not the name of a bird, or a tree, or a flower, but they all appear to pride themselves in knowing the names of the hundred and odd varieties of Grapes." Of the many varieties cultivated, the Pathans consider that the Black, the Long, and the Seedless varieties are the only ones that will bear packing and will keep. Mr. Cleghorn tried packing in saw-dust, in half-dry grass, and wrapping each bunch carefully in packing paper. In all these cases, a very large proportion of the fruit was completely spoiled, and the remainder damaged. He then tried a few bunches cut with a portion of the stem, and to these cut ends he attached India-rubber tubing filled with water, the ends being plugged. The Grapes and Peaches packed in this way arrived quite fresh, and remained in fairly good condition for two days.

Stapelia gigantea.—This curious interesting plant has again flowered at Pendell Court Gardens, Bletchingly, and Mr. Ross exhibited a flower, which measured over 11 inches across, at the last show at the Royal Aquarium on Wednesday last, when it formed an important feature. The plant which has produced this flower is, we believe, a portion of the original piece imported from South Africa; the flower is creamy-white, with transverse bars of red-brown covered with translucent hairs, and was last illustrated in these pages on December 22, p. 728; a figure also appeared in the *Bot. Mag.*, t. 7068. It has an interest as being one of the largest flowers known. The species was discovered about thirty years ago, by Mr. Plant, in Zululand, and was introduced into England by Mr. Cooper, who sent a cutting to Pendell Court. The plant is also to be seen at Kew and in other Botanical Gardens; but it has not yet flowered in any of them.

Preparing for the Winter Moth.—Mr. J. Masters writes to the *Evesham Standard* as follows:—"As the season of the year is approaching when the winter moth will be making its appearance, a few hints, by way of reminder to fruit growers, may not be out of place:—

"1. The wingless female moth will be soon making its ascent of the tree, to deposit its eggs for the future brood of caterpillars.

"2. The best proved method of intercepting the moth is to band the trees with cart-grease. Buy none unless guaranteed as free from tar. Numbers of young trees have been killed by injurious compounds sold as grease.

"3. Do not use oil in the grease to make it thin. If the daub is stiff, it will last the longer. It is important to have it sticky, and look after it and keep it so, otherwise the moth will creep over it.

"4. If trees are young and the bark is smooth and tender, some grease-proof paper should be tied next to the bark of the tree, and the daub placed on the paper. If trees are matured and the bark is rough, good grease will not injure the tree.

"5. Trees where grease-proof paper is used will not require so much grease, as the paper prevents the bark from absorbing it. If all the trees were banded with paper, it is probable that the saving of

the cost of grease would be an equivalent for the cost of paper banding.

"6. Grease may be applied with the hand, or a thin flat piece of wood, or a small brush; in either case put on a thick layer of the grease.

"7. Grease banding should not be delayed after the second week in October, and will require attention until the end of November.

"8. The appearance of the moth may be known by taking out a light in the dusk of the evening when the male moth, if any are present, may be seen. If no male moths are seen, you need not trouble to grease-band the trees.

9. "Do not be discouraged if, after all your pains, some caterpillars are found; when numerous they are not to be exterminated in one season."

List of Famous Horticulturists.—The following extract is from the *Journal of Botany* for August:—

"Rogers, John (1752—1842): born Richmond, Surrey, Feb. 10, 1752; d. Southampton, Nov. 9, 1842; bur. All Saints' Burial Ground, Southampton. Gardener in Royal Gardens, Richmond. Had a herbarium. Autobiog. w. etched portr. by Frank McFadden, 1889.

"Ronalds, Hugh (1759—1833): b. Brentford, March 4, 1759; d. Brentford, Nov. 18, 1833. Nurseryman and seedsman. 'Pyrus Malus Brentfordiensis,' 1831, illustrated by his daughter Elizabeth. Formed a herbarium of Kew plants. Gent. Mag. 1834, i. 337; Pritz. 268; Loud. Gard. Mag. x. 96.

"Roscoe, William (1753—1831): b. Liverpool, March 8, 1753; d. Toxteth Park, Liverpool, June 30, 1831. F.L.S., 1804. Founded the Liverpool Bot. Garden, 1802. M.P. for Liverpool, 1806. Correspondent of Smith. 'Scitamineæ,' 1824—28. Contrib. to Linn. Trans., 1806—1814. Pritz. 269; Jacks. 599; R. S. C. v. 274; 'Life,' by his son Henry, 1833; Sm. Corresp. ii. 301; Gent. Mag. 1832, ii. 179; Allibone; Hoefer; Michaud Wedgewood Medallion. Portr. at Kew, engrav. fr. cast by J. Gibson. *Roscoea*, Sm.

"Roxburgh, William (1759—1815): b. Craigie, Ayrshire, 1759; d. Edinburgh, May, 1815. M.D., F.L.S., 1799. H.E.I.C. Medical Service. Superintendent, Calcutta Garden, 1793—1814. At Cape and St. Helena on way home in 1814. List of St. Helena Plants in Beatson's 'Tracts relating to St. Helena.' 'Pl. of Coromandel Coast,' 1795—8. 'Hortus Bengalensis,' 1814. 'Flora Indica' (posthumous), 1820—32. Plants at Brit. Mus. and Kew, MS. Fl. Indica and drawings of Palms in Bot. Dept., Brit. Mus. Other drawings at Kew and Calcutta Bot. Gard. Pritz. 271; Jacks. 600; Pref. to 'Flora Indica' and 'Coromandel Pl.'; Cott. Gard. vi. 65; R. S. C. v. 314; Allibone. Portr. at Kew, engr. by Warner fr. pen-and-ink sketch by Sir W. J. Hooker. Monument in the Calcutta Garden. *Roxburghia*, Dryand.

"Royle, John Forbes (1799?—1858): b. Cawnpore, 1799?; d. Acton, Middlesex, Jan. 2, 1856. M.D., Munich, 1833. F.L.S., 1833. F.R.S., 1837. Surgeon in H.E.I.C. Medical Service in Bengal, 1820. Curator, Saharunpur, 1823—1831. Prof. Mat. Medic. King's Coll., London, till 1856. Sec. Roy. Hort. Soc. 'Manual of Materia Medica,' 1847. 'Botany of Himalayas,' 1834—38. 'Fibrous Pl. of India,' 1855. Pritz. 271; Jacks. 600; Proc. Linn. Soc. 1858, xxxi.; Flora indica, 64; R. S. C. v. 316; Gard. Chron. 1858, 20; Cott. Gard. xix. 225, 249. *Roylea*, Wall.

"Rusholm, — (fl. 1686). Last Gardener of Westminster Physick Garden. Garden pl. in Herb. Sloane, 24—26 and 110.

"Russell, John, 6th Duke of Bedford (1766—1839): b. July 6, 1766; d. London, Oct. 20, 1839. Succeeded 1802. F.L.S., 1816. 'Salictum Woburnense,' 1829. Pritz. 274. 'Letter on the late Duke of Bedford,' by Sir W. Hooker. *Bedfordia*, DC.

"Sabine, Joseph (1770—1837): b. 1770; d. Hanover Square, London, Jan. 24, 1837; bur. Kensal Green Cemetery. F.L.S., 1798. F.R.S. Barrister. Sec. Hort. Soc. 1810. List of Plants in Clutterbuck's 'Hist. of Herts,' 1815. Pritz. 275; R.S.C. v. 354; Gard. Mag. xiii. 144; Cott. Gard. vi. 363; Mag. Nat. Hist., n.s., i., 390; Pryor Fl. Herts. xli. Litho. portr. after Eddis at Kew. *Sabinea*, DC.

Sadler, John (1837-1882): b. Gibleston, Fife, Feb. 3, 1837; d. Edinburgh, Dec. 9, 1882; bur. Warriston Cemetery. Assistant to Prof. J. H. Balfour, 1854. Sec. Bot. Soc. Ed. 1858. Curator Bot. Gard. Ed. 1879. Papers in Trans. B. S. Ed. Mosses in Brit. Mus. Jacks. 601; Journ. Bot. 1882, 31; Gard. Chron. 1879, i. 76, 81, w. portr.; 1882, ii. 793; Hist. Berwick Nat. Club, x. 72; R. S. C. v. 360. *Salix Sadleri*, Syme.

"Salisbury, Richard Anthony, *né* Markham (1761—1829): b. Leeds, 1761; d. London, March, 1829. Of Chapel Allerton, Yorksh., and afterwards of Mill Hill. F.L.S., 1788. F.R.S. First Sec. Royal Hort. Soc. 'Icones,' 1791. 'Prodomus stirpium in hort. ad Chapel Allerton,' 1796. 'Paradisus Londinensis,' 1805—8. 'Genera Plantarum,' ed. J. E. Gray, 1866. Descended from Lyte. Contributed to E. B., 17. 21, 262. Had garden at Chapel Allerton and Collinson's at Mill Hill. Drawings and notes in Bot. Dep. Brit. Mus. Pritz. 276; Jacks. 601; R. S. C. v. 378; Lambert, 'Pinus'; Rudge, 'Pl. Guian.' pref.; Pref. to his 'Genera of Plants.' Pencil portr. by W. J. Burchell, 1817, at Kew. *Salisburia*, Sm. = *Gingko*.

"Salisbury, William (fl. 1797—1816). Nurseryman of Chelsea. Partner and successor to Curtis in Brompton Garden, afterwards in Sloane Street, where he had botanical classes. 'Hortus Paddingtonensis,' 1797. 'Hortus Siccus Gramineus,' 1816. 'Botanist's Companion, 1816. Pritz. 276; Jacks. 601; Loudon, 'Arboretum,' 75.

TRAINED CHRYSANTHEMUMS.

Already the grower of "Mums" for exhibition is scenting the battle near at hand, and is in the throes of earnest preparation for the contest which will this month and next be waged in all parts of the country. Our illustration (fig. 90), shows two well-flowered and grown plants of popular varieties, which were shown at the Chiswick Chrysanthemum Conference of last year by Mr. G. Potts, jun., gardener at Elmside, Northam, East Surrey.

The examples struck us as exhibiting a good style of growing these plants for small conservatories and greenhouses, and for standing in bowls and vases in the dwelling. The pots were 32's, and the total height of the plants not more than 20 inches—decidedly improvements on the lanky examples all round, which had evidently many unclothed legs to stand upon.

HONEYDEN, NORTH CRAY.

The residence of J. Todd, Esq., is a couple of miles from Bexley Station, and its fine old gardens contain many objects of interest. Fronting the house are some noble trees, including a grand Cedar of Lebanon; to the right is a large Tulip tree, and on the left a magnificent Weeping Beech of more than 50 feet in height, a perfect specimen, and a pleasing picture. The whole of the gardens are filled with interesting shrubs and climbing plants; in the small orchard at the end of the kitchen garden the Apple trees were heavily laden with fruits—a noteworthy fact in this year of admitted fruit scarcity. But it is in the glasshouses that the fine plants and rare specimens, brought by Mr. R. A. Todd from Demerara and other parts of the Tropics, as well as purchased at home, that the interest mostly centres. Foremost among these, was flowering for the first time under cultivation, the handsome Aristolochia longicaudata (Masters), a specimen of which was brought by Mr. Todd from Demerara, and which fortunately has thriven. As this plant will be illustrated in these pages shortly, it will suffice to say that it is a very singular and beautiful flower. Other handsome climbers were in bloom in this house, and on the stages was observed a well-cultivated collection of diverse flowering and foliage plants, most of them consisting of such as are not usually found in gardens, but all are undeniably beautiful when grown as they are here by Mr. Todd. Among them we noted the charming rosy-salmon flowered Crossandra undulæfolia, the noble yellow-flowered Aphelandra chrysops, with its green leaves lined with white; the scarlet and yellow flowers of the climbing Lily — Gloriosa superba; Mascarenhasia Curnowiana, a charming shrub with carmine-coloured flowers, and sent out some years ago by Messrs. H. Low & Co.; the orange-coloured Curcuma Roscoeana, and the blue C. petiolata and others of allied species; Anthurium ornatum, A. Andreanum, and other Anthuriums; the pretty white Toxicophlæa Thunbergii; some charmingly flowered small plants of Ixoras, and with them a well-flowered Vanda Sanderiana; some Cypripediums, &c. Here, too, the Calanthes was observed to be growing to perfection, and sending up spikes strongly.

An adjoining house was devoted to Orchids requiring an intermediate temperature, and in it Cattleyas and Lælias throve, and the Catasetums—favourites of Mr. Todd—appeared in vigorous condition. Catasetum macrocarpum was just gone out of bloom; C. Bungerothii was in bloom, and various interesting species were showing flower-spikes. Here were several well-flowered specimens of Oncidium ornithorynchum; Cattleya Harrisoniæ, with eight flowers on a spike; Oncidium bicolor, and Cattleya bicolor. A grand piece of Lælia cinnabarina had five or six stout flower-sheaths; Brassia Lawrenceana is well-flowered; and a rather poor but very singular-looking greenish-white Brassavola was covered with flowers. Cœlogyne speciosa and others, too, are in bloom, and Cymbidium eburneum was again sending up two spikes from the same growth which produced two spikes last year—a circumstance of singular rarity.

In the other houses was found a good collection of well-cultivated Ferns, amongst them being unique specimens brought from Demerara. In the cool houses and pits, curious and rare bulbous plants were noted; some Cyrtanthi were here in bloom, and in a cold house was the best example of Lælia majalis that we have seen; it is growing on a block, and flowers freely every year from the wonderfully large pseudobulbs. The conservatory was daintily decorated with Begonias, Pleione lagenaria, Statices, Rochea falcata, Petunias, Rivina lævis, the blue Salvia cacaliæfolia, Euphorbia splendens, Vallotas, Nerines, &c., with Ferns, scented Pelargoniums, &c. In this cool structure, the pretty Rogiera gratissima, which most people spoil in a stove, was covered with its fragrant blush-white flowers. The gardens at Honeyden give a good example of a garden in which the owner has notions of his own as to the beautiful, and to which no new things are admitted that have not a good warranty, and never to the exclusion of old favourites.

ROSES.

THE ROSE IN POTS.

The autumn is a fine one for Roses. Madame Berard has proved herself a very useful autumn-blooming Tea, very vigorous in growth, and much like Gloire de Dijon in this respect, but the flowers are of a richer colour and better form; it is certainly the best climbing Rose of its colour. A useful Rose to cut in the bud state is Madame Falcot; we have had large numbers of them this month, and they have been surpassingly beautiful. We have many young and old plants of Souvenir de la Malmaison, and all of them produce flowers abundantly and of good form as late in the season as any other Rose; but there is now a great wealth of beautiful Tea Roses to select from. From a bed of 30 feet long by about 7 feet wide, containing some thirty varieties, we have cut Tea Roses all the summer and autumn. The best varieties in the bed are Alba Rosea, Belle Lyonnaise, Catherine

Mermet, Niphetos, Comtesse de Nadaillac, Etoile de Lyon, Hon. Edith Gifford, Madame Berard, Madame Falcot, Madame Margottin, Marie van Houtte, Miss Ethel Brownlow, Perle des Jardins, and Safrano. The very double varieties do not open their flowers quite so well in the autumn as one would like. When the flowers fail to open out-of-doors from frost and wet, the supply of cut blooms can be continued for a month or six weeks longer, or, if it is really necessary, all through the winter, from plants in pots, grown in a light airy house in a moderately dry atmosphere; but it must not be forgotten that such plants, having had no rest, would not be of much use to begin producing flowers again in March. The plants intended to be forced early ought to be kept now comparatively dry at the roots, and they should be pruned about the first week in November. If they are rather dry at the roots when pruned, there will be no bleeding from the cuts, and the wounds will heal up in less than a week. Such plants should have well filled the compost in the pots with small fibrous roots, and, be it observed, that the natural result of over-dryness would be to cause the best of these roots to shrink up and perish; and this must be provided against by giving the plants a good supply of water before the soil is dust-dry, but keeping them generally dry enough to prevent any active growth.

Soon after Christmas the plants should be started in a moist atmosphere, and not a very high night temperature to begin with. Under rather than over 50° as a minimum is a good temperature at the first, but as information of this kind is more for gardeners and amateurs who have more often than not but scanty glasshouse accommodation, it may be useful to add that the best early Roses I ever had were started into growth with the early Vines in December, with a minimum temperature of 45°, and as I employed the rather old-fashioned plan of making up a bed of fermenting manure and leaves in the houses, the Roses were placed over this bed—the slight heat of the bed started the roots into growth rather more rapidly than the leaves, which resulted in vigorous growth, but the roof of the house would become well clothed with Vine leaves before the Roses came into bloom, and as by that time the temperature had advanced to 60° as a minimum instead of 45°, which we started with, it was thought best to remove them into the second vinery, and there, with more light and a lower temperature, the flowers opened well.

For early forcing, even more than for those grown to produce very late blooms, careful attention is necessary to prevent the spread of mildew and green-fly, both of which attack the young and tender leaves. It is not always convenient to fumigate the house just because there may happen to be a few Rose bushes in it, and dustings of tobacco powder may kill the first flight of insects, and the mildew may be stopped in the early stages by lightly dusting the leaves with flowers-of-sulphur.

I am rather inclined to recommend Roses on their own roots for pot culture, especially the Tea-scented varieties. They can be readily struck in the autumn from cuttings put in sandy soil in frames or hand-lights. They may either be planted in pots or in the soil under the glass lights. I would put them in any time in October, and expect them to form roots slowly during the winter; but the best results I ever had from cuttings was by planting them in 5 and 6-inch pots early in August, and placing them in hand-lights behind a north wall. Cuttings from 5 to 6 inches in length, taken off with what gardeners call a heel attached to them, are the best. The heel is the part of the cutting where it is attached to the old wood—they require to be inserted firmly in the soil; and all such cuttings will strike roots freely any time during the late summer or autumn months. When fairly well-rooted, each plant may be placed singly in 4 or 5-inch pots, using the ordinary potting soil, and it is astonishing how freely they grow under glass; when the leaves are kept quite free from parasites, they will produce beautiful blooms the following season. *J. Douglas.*

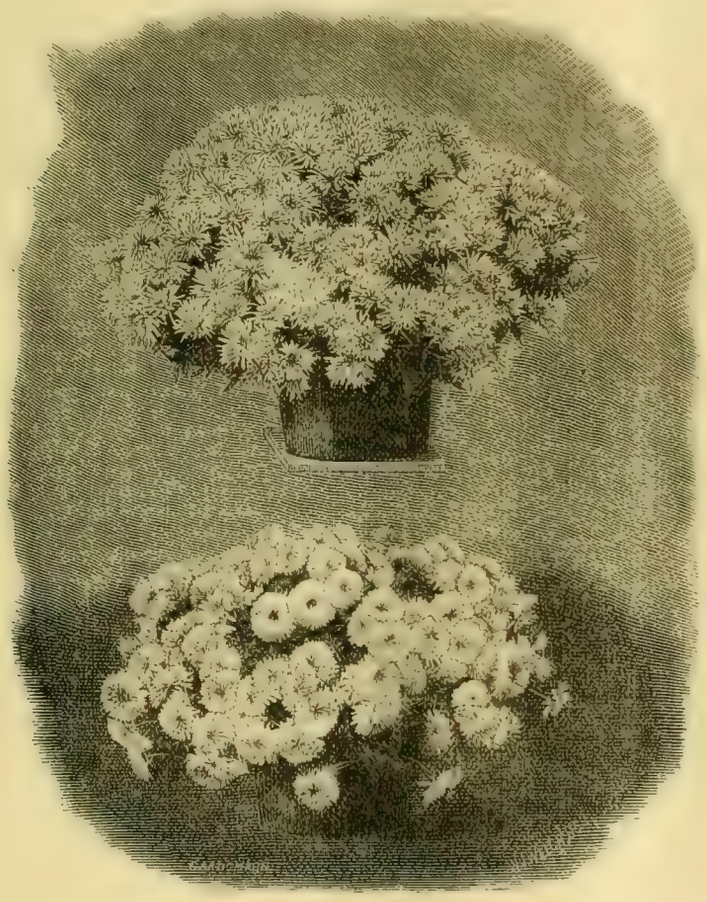


Fig. 90.—Trained Chrysanthemums: upper one, Fair Maid of Perth; the lower, Elaine. (see p. 444)

GLEANINGS FROM NORTH NORFOLK.

(*Continued from p.* 381)

Numbers of pots of the showy South African Liliaceous plant, Veltheimia glauca were noticed, under the front wall of a pit, ripening off in the open air. It is a plant rarely seen in quantity in any garden, but here it really was grown in quantity; the densely clustered flowers, rose and yellow, on a terminal raceme, appear in March. The same kind of culture is pursued with these as with Amaryllis. It was observed that some of the fruit tree borders next the wall, for a distance of half-a-dozen feet, were laid with turf, but the appearance of the trees—Peaches, &c.—does not warrant the general adoption of this idea, and even here it may be one of the results of severe economy in garden expenditure. Turf is commonly used as a border to the kitchen garden walks, and very well it looked in these extensive enclosures.

Holkham is a model estate, and as a result, it has model cottages, a row of which stand on either hand of the approach road leading from the railway station; neatly trimmed Quick hedges partially hid the cottages and the extensive garden plots, and on the 15 yards wide turf margin of the approach road stood, at widish intervals, in straight line, and on either hand a row of evergreen Oaks. These trees took away the disagreeable effect that long lines of Thorn hedges have, and gave no injurious shade to the gardens beyond the hedges.

The village is not quite modelled on the newest pattern, and does contain a commodious well-built inn, where refreshment can he obtained of good quality for man and beast—a matter of some moment when we consider the large number of persons visiting Holkham during the summer season.

The fruit trees in the village betrayed a good degree of knowledge of pruning, and in some few instances carried full crops; and the wall Pears, &c., appear to be managed with care, although this year the crops are light ones generally. The situation is high and dry, and would suit Cherries admirably.

My steps afterwards led me to Old Hunstanton Hall, the residence of H. L'Estrange, Esq., a very ancient place, surrounded with a moat, and containing much of the ancient building, and some rare antiquities. The gardens, rather extensive, are surrounded by Beech hedges, 9 to 10 feet high and a yard in thickness. These are several miles in length, and afford capital protection from the sea winds to all within their boundary. The inner intersecting lines and avenues consist of Yew chiefly, and in one of these avenues there are specimen trees of the upright Irish Yew, planted to form an inner avenue. These are about 12 feet high, and stand about 10 feet asunder in the line. The effect is good, because it is in harmony with the formality seen everywhere around. A good idea, and one worth copying, was seen in a circular enclosure of 15 yards in diameter made of a Yew hedge many feet thick, and perfectly shorn to a flat close surface outside and inside. Outside, the face of the hedge was almost perpendicular, but inside it was so cut as to form a slightly arched pent-house, with a thick roof, under which a person could get shelter from the rain from whichever quarter it came. This enclosure was buttressed at wide intervals by thick suitably-shaped masses of Yew.

The gardens, under the charge of Mr. G. Nesbit, an old Sandringham man, showed many points of

interest. The flower garden was as gay and cheerfully-looking as anyone could desire, his best effects having been obtained by a liberal use of the best kinds of perennial plants, of which he had long borders and big beds. The ordinary bedding plants were likewise in favour, but not to an overwhelming extent.

The moat was utilised for the growth of Lilies and other aquatic plants, so that instead of being an eyesore as usual, it was really a thing of beauty.

Fruit was here a scarce commodity, as elsewhere; still, some Apple trees were in extraordinary good bearing, notably Worcestershire Pearmain, which is here said to be of first-rate quality; certainly, the colour of the fruits left nothing to be desired. Mr. Nesbit, like Scotchmen everywhere, carefully tends his "Kailyard," and many excellent crops were observed therein—Onions, the *crux* of good gardening, being superlative. *A Wanderer.*

Home Correspondence.

PHLOX DRUMMONDII.—It was with pleasure that I read Mr. Dean's remarks on Phlox Drummondii and its many varieties at p. 421 of the *Gardeners' Chronicle* for October 11, and I would like to add a little more to what he there said about raising the plants. It is quite good practice to raise the seeds in gentle heat, and place the plants out in beds where they are to bloom when large enough. It is just in the interval after germination, and before they are large enough to be transferred to beds, that the treatment they get either mars or makes them. Mostly the seeds are sown too early in the spring, with the sure result that the stem for an inch or two above the ground becomes partially woody, and growth after that is weak, spindly, sparse, and wiry, and the flowers are comparatively few in number. The seeds should be sown thinly in shallow pans in the first week of April for raising plants to go out-of-doors in the second or third week in May. Pans are better than pots, because the seedlings cannot root deeply, and are more readily disentangled and freed from soil without breaking the roots. It may be remarked, in connection with the sowing of small seeds in pots and pans, that the upper layer of soil should be very finely sifted—that it should not be more than ½ inch deep, and should have directly beneath it a layer of siftings of soil about the size of Marrowfat Peas. Into this lower layer the roots of the seedlings readily enter, they being led thither in following the downward percolation of the water afforded the pan or pot. The roots seize on these pellets of soil, and when the seedlings are removed, each will be found attached to several of these, and little check is experienced from the operation. In the case of Phlox Drummondii, the soil to which the seedlings are transferred should be light sandy loam enriched by one quarter leaf-mould and one quarter decayed manure, for what is wanted is rapid growth. The pricking out of the young plants should take place when two pairs of true leaves have appeared; and if many plants are required, a slight hotbed frame may be utilised, in which the warmth will last about one month. The soil above recommended may be laid level and pressed down firmly, and the seedlings put out at about 4 inches apart; after being kept shaded during sunshine, covered up at night, and close for three days, the frame may be slightly tilted at the back by day for a fortnight, when more air may be afforded by day, and a trifling amount allowed at night, with covering of mats. The frame may be sprinkled about 3 P.M., and closed until 7 P.M. Airing the frames is a matter that the gardener has to arrange in accordance with the weather, and no precise directions can be given for doing it; in any case, his object should be to secure bushy plants without drawing (etiolation). Full air should be given by day for a week before planting the Phlox in the open ground. *An Old Hand.*

SINGLE DAHLIAS.—Messrs. Laird & Sons, Edinburgh, grow a large selection of these useful Dahlias, the stock containing only varieties which are of first-class merit. Some of the best were:—John Pearson (Laird), dark lilac, a perfect flower in form and substance. James Scobie (Laird), yellow spotted and striped red, the flowers large, perfect in form, and of great substance; the habit very dwarf. Duchess of Fife (Ware), beautiful amber, the florets margined with deep orange-red. Maude (Ware), pure white, margined with deep maroon, a very beautiful flower, said to be constant. Tweedside (Laird), deep maroon, very fine flower, and very dwarf habit. Benmore (Laird), rose, shaded crimson, perfectly formed flower, and very dwarf habit. Eclipse (Cheal), salmon, shaded with mauve, with a crimson ring round the disc, a very attractive variety. Mrs. Henderson (Henderson), bright crimson, first-rate form and substance. The foregoing are all new sorts. Among older varieties which struck us as being equal to any of these and also very distinct, were the following:—Florie Fisher, deep mauve, with white disc; Amos Kerry, rich velvety-maroon; Fire King, rich crimson; Terra Cotta, a handsome flower, colour as per name; Albert Victor, crimson-lake; Beauty of Uplands, crimson, tipped with gold. *W. S.*

THE GRAPE CONFERENCE.—In penning this short paper in reference to what I saw there, I must confine my thoughts and remarks to what affects me more particularly as a market grower. In private places, while one has to grow to suit the wishes of one's employers, unfortunately the market growers have to ignore their own tastes, &c., and grow that which pleases the public. To begin with the Black Hamburgh, of which variety very few samples of any importance were staged. I must not forget what I saw of it as a growing crop in the large vinery, and sold as they were that day to Fellows and the general public. It is no use for us to ignore the fact that at this meeting at which they were sold at 1*s.* and 1*s.* 6*d* per lb., not very much margin for profit was left to the grower. The season from June to November being a long one, in which the Black Hamburgh is in season—and no Grape being so easy of cultivation—I foresee a long day for it yet, even though it is in some places being discarded. I am well aware that there are one or two other black Grapes which excel this Grape in weight of crop per Vine, but these are produced at a higher cost. As I say, the growing crop at Chiswick does very much to open the eyes of the wavering market man. Of course, I well know we cannot put up such buildings as those, nor is it necessary; still the idea is there—plenty of air and light. Another idea one can carry away is the extension of rods. Good Hamburgh Grapes are grown on single rods, and will be so grown, but the question is—if one has the chance to extend the Vines is it not wise to do so? The variety has faults, but one thing is quite sure, and that is that no other variety excels it as an early or mid-season Grape. *S. Castle, Ashford Vineyard, Fordingbridge.*

TROPÆOLUM SPECIOSUM (p. 418).—I should like to make an addition to "E. M.'s" remarks on this beautiful climber, and partly as a query. It is well known that it will grow like a weed in some places, and in others nothing will induce it to grow. It is seen at its best in the North; but I am quite certain it is not a question of North and South, for it grows well in many parts of Surrey, Sussex, Hampshire, Kent, &c. Here I have tried it over and over again, and always failed, and I have come to the conclusion that it will not grow in soil charged with lime, as mine is. I got the hint from seeing it in wonderful vigour at a rectory near here, where the soil is red sandstone strongly charged with iron. Since then I have been making many inquiries, and always with the same result; that where Rhododendrons and Azaleas will grow, there also you can grow Tropæolum speciosum, but in soil charged with lime and magnesia it is labour in vain to attempt it. Perhaps some of your readers will be able to confirm or deny this. *Henry L. Ellacombe, Bitton Vicarage.*

SEEDLING TUBEROUS-ROOTED BEGONIAS.—I purchased a packet of Begonia seed of double and single-flowered kinds last February, and sowed at the end of that month; the seedlings were shifted into 48-pots at the end of May, and placed in a cool-house, where they were in great beauty the whole summer. So true do Begonias from good sources come from seed, that there is scarcely anything left to be desired. Those I had were sturdy, compact, and required no supports, only forked sticks for the heavier double blossoms. The broad regular petals of the doubles resembled those of a well-formed Camellia, and differed greatly from the Begonias of a few years since, and measured in some instances 4 inches across. The colours were in great variety, and ranged from deep crimson to the purest white. *E. Martin, Hall Place, Canterbury.*

AGARICUS AGGREGATUS IN A MUSHROOM-BED.—I send you herewith a sample of a fungus (Agaricus aggregatus), that has come up in a bed of Mushrooms. The question arises, Is the fungus in the spawn or in the material of which the bed is composed? Have you heard of such a case before, and can you throw any light on the subject? I have not seen the bed, nor can I at present say if any sawdust litter was amongst it. If there was, the thing would be accounted for, as A. aggregatus is a frequent outcome of such material in beds. *R. V.* [The presence of this fungus upon the Mushroom beds has no connection with the Mushroom spawn used. The beds have been infected from spores carried in the air. Such cases are common, and many different fungi luxuriate on Mushroom beds. Ed.]

CONVOLVULUS SEPIA.—This climbing perennial plant is a capital subject in gardens, and looks well amongst Hops, where it has a good effect with its pure white, long-stalked, trumpet-shaped flowers, 3 inches wide at the mouth. The foliage is large and of a glossy green. We have it planted at the base of a late-flowering Laburnum, whose branches overhang a small waterfall, and up the stem and among the branches of which tree the Convolvulus finds its way each year, and makes the Laburnum ornamental long after its own beauty has departed. About the base of the stem of the Laburnum are planted dwarf species of Rhododendrons, and the peaty soil needed for these just suits the Convolvulus which rambles over the Rhododendrons, and from these hangs down almost to the water's edge, making altogether a very pretty group during July and August. *E. M.*

CASSIA CORYMBOSA.—What a grand plant this is for a large conservatory, where convenience exists for planting it out, and allowing free expansion of its branches. In the conservatory at Rooksbury Park, Wickham, there is a plant which has been there a number of years, and at the present time this plant is—and has been for the last three months—smothered with bright orange-yellow blossoms, which form such an agreeable contrast with the deep green of its foliage. The plant in question is fully 20 feet high, and half as much in width. Red spider is a pest that affects it, and should be kept in check by supplying abundance of moisture to the roots, and syringing the foliage before the flowers appear. An occasional application of manure to the soil causes rapid growth, and increases the number of the blossoms. *S.*

Societies.

ROYAL HORTICULTURAL.

October 14.—The several Committees of the Society met in the Drill Hall on Tuesday last, when the three days' exhibition of jams and bottled fruits opened. Exhibits were of a varied character, and of good quality. Some capital Apples were exhibited, and a good number of Orchids included some rare and interesting plants. Sir C. W. Strickland, Bart., addressed a good audience in the afternoon on Crinums—a genus of plants on which he is specially qualified to speak.

Floral Committee.

Present: John Fraser, Esq., in the chair; T. Baines, R. Dean, B. Wynne, W. C. Leach, J. Walker, R. B. Lowe, T. W. Girdlestone, H. Turner, H. B. May, G. Paul, C. Jeffries, and the Rev. H. H. D'Ombrain.

The range of subjects presented, doubtless arising from the late period of the year, was restricted. The chief place was taken by a characteristic collection of choice market Ferns, Crotons, Palms, Isolepis, &c., occupying the entire length of one of the centre tables down the Hall, from Mr. H. B. May, of Edmonton. All the stuff was in the usual market-sized pots, and very admirably grown, the Crotons especially showing superb colourings. Added to these was a basket of the new white Bouvardia Purity, for which Mr. May was awarded a Certificate of Merit. The plants were blooming freely at 12 inches in height, the flowers resembling those of Humboldti, but somewhat smaller.

A neat collection of Pteris in variety, Adiantums, and other excellent decorative Ferns, came from the Society's gardens, Chiswick.

From Mr. H. J. Jones, The Nursery, Green Lanes,

came a capital collection of Chrysanthemums in pots, forming a couple of attractive groups. Specially well-bloomed were William Holmes, the very pretty round Pompon Madame Elise Dordan, and the pleasing apricot-coloured Japanese Pynaert van Geert.

A Certificate of Merit was awarded to Mr. Jones, and also to Mr. T. S. Ware, of Tottenham, for a pink sport from Madame Lacroix; flowers same character, but produced on plants 2 feet in height; this was, after being certificated, named Annie Clibran, and will, doubtless, in time, prove to be a useful variety.

An odd little Calla in a 6-inch pot, and carrying two expanded spathes, at about 14 inches in height, with two or three others about to open, came from Mr. Elliott, of Jersey; this was shown under the name of Richardia æthiopica Little Gem, and worthily received a Certificate of Merit. Doubtless, in the hands of our experienced market growers, this attractive Arum will develop into a popular plant.

Mr. Robson, Altrincham, showed a miniature seedling Lycopod unnamed, and also a Carex resembling japonica, the plants carrying Flag-like, handsome, drooping foliage, at about 18 inches in height; this received a Certificate of Merit.

An interesting hardy plant was found in Cunilla Mariana, a pair of which was exhibited by Messrs. Pitcher & Manda, Hextable, Swanley. It was about 12 inches in height, the flowers were trumpet-shaped, being borne densely in racemes, and were of a pale mauve colour. This also received a Certificate of Merit. The same firm had cut Chrysanthemums, Elliot Shepard, a fine broad-petalled, rich yellow Japanese; Mohawk, reddish-chestnut on the upper side of the petals, but marred by the pallid hue of the under sides when incurved, a very large and possibly good Japanese; and Florence Bryant, which is of the size and character of Christine, was a pleasing brimstone-yellow colour.

Mr. F. Salter, gr. to T. B. Haywood, Esq., Woodhatch, Reigate, showed Memoir Chrysanthemum, a sport from Mr. H. Wellam, also shown. The sport had a yellow centre, with soft pink outer petals, and had the thin purple stripe of the original variety also. It requires to be seen later.

In addition to the Chrysanthemums named above, Mr. T. S. Ware showed a pleasing salmon-carmine Cactus Dahlia, G. Benthe, and Salmon Bull, a pretty Pompon variety.

The most striking floral feature of the meeting was undoubtedly a large quantity of cut Roses, set up by Messrs. W. Paul & Sons, Waltham Cross. The flowers were, of course, not large, but beautifully-coloured, and included the late Mr. Bennett's Mrs. John Laing; W. A. Richardson, Captain Christy, Perle des Jardins, Corinna, Danmark, Marchioness of Lorne, Madame Falcot, Madame De Watteville, Madame Hoste, Marie d'Orleans, Gloire de Margottin, &c. To exhibit so glorious a display of cut Roses in the middle of October is, indeed, a fact worthy of notice, and the collection well deserved the Silver Banksian Medal awarded.

Mr. C. Turner was enabled to show how possible it is, in spite of some early frosts, to have show Dahlias in capital form so late in the year. His twenty-four blooms included: Colonist, W. H. Williams, Eldorado, Henrietta, William Rawlings, and James Cocker; of selfs and of tipped flowers, Ethel, H. Walton, Mrs. Hendall, &c.

Messrs. Jas. Veitch & Sons had numerous bunches of their pretty hybrid Rhododendrons, which seem to be perennial bloomers. Of these, Princess Christian, yellow; Dante, apricot; Luteo roseum, and Apollo were charming.

A singularly delightful exhibit was one of cut Roses, Begonias, Cactus and single Dahlias, Chrysanthemums, &c., set up in baskets, vases, &c., in charming bunches, elegantly grouped on a white cloth, dressed with Ferns and other suitable greenery. The Chrysanthemum flowers were very fine, and included some of the best of the Japanese section. The exhibit well merited the Silver Banksian Medal awarded, and was arranged by Mr. E. Mawley, of Berkhampstead, the whole of the flowers being of his own growing.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. J. O'Brien, J. Douglas, E. Hill, J. Dominy, H. M. Pollett, L. Castle, and S. Courtauld.

There were a few interesting specimens submitted here, among the chief of which was a series of varieties of the new Cattleya Warocqueana, sent from the nurseries of the Horticulture Internationale, Parc Leopold, Brussels, and very beautiful they looked too, after coming inside from a fog which hung round all day. In C. W. delicata is a pretty form, with sepals and petals of pale rose, and the lip, which in the type plant is very richly coloured, in strong contrast to the white sepals and petals, is here paler, the blotch being also reduced in size. The variety regalis has flowers of rose colour, with the petals very broad, and the ground colour of the lip darker. The next is flammea, with better formed flowers, having a tinge of lilac in the rosy-carmine which predominates; the lip is coloured almost like the rest of the flower, and bears on the median lobe a central blotch of crimson; but in a variety shown under the name of amethystina is the richest colouring of all, the flowers being of a deep rosy-crimson, well-formed, and the lip expanding, while its colouring is a deeper rosy-lilac than the sepals and petals, with the exception of a narrow edging, which just corresponds. Altogether, they form a charming series of plants, and the flowers have a distinct colouring which is quite peculiar. From the same source came flowers of Cattleya du Buyssoniana, named in compliment to the Comte de Buysson, a Belgian amateur; this is a new form of the same section as C. granulosa and Schofieldiana, the sepals and petals are obovate-oblong, pure pale yellow, and the petals slightly waved along the margin, the lip is very distinctly three-lobed, the lateral pair clasping over the column, and are exteriorally dull rose; while the median lobe, which is clawed and crimson-rose in colour, is carried well out, about 1 inch, the blade being almost cuneate. Cattleya aurea Lindeni, a form with very deep yellow petals and sepals, and the colour of the lip deep brown, together with Catasetum Bungerothi Randi, rich yellow; Lælia grandis, the curious Mormodes maculata, and the very elegant Aganisia cyanea, with its numerous flowers slightly tinged with violet, completed the group.

Sir Trevor Lawrence, from Burford Lodge, Dorking, a good specimen of Epidendrum radiatum fucatum and Bulbophyllum amplum, a plant with long narrow flowers of no great beauty, but attractive by reason of their peculiar appearance, the sepals and petals are linear-lanceolate, yellowish, spotted with brown, and are directed upwards or downwards, so that the breadth of the flower is not great; the lip is brown, and is well set off by the colour of the other parts.

Some well-grown specimens were staged by Baron Schroder, The Dell, Egham (gr., Mr. Ballantine), among which some splendid examples of Dendrobium Phalænopsis, with their rich crimson flowers, were conspicuous; but equally attractive was a plant of Cattleya Imschottiana, which had flowers recalling C. aurea, but the sepals and petals are pure white, and the whole flower smaller; it is a charming species: also C. fausta×, a hybrid of C. Loddigesi and Lælia exoniensis×, with small flowers of light rosy-lilac, with a purplish blotch on the lip, below which is golden-yellow.

Odontoglossum grande was represented by a fine specimen from Mr. A. Sanders, 146, Camden Road, N.; Angræcum Kimballiana, with a couple of racemes of its small pure white flowers came from W. Vanner, Esq., Camden Wood, Chislehurst (gr., Mr. W. Robbins): the sepals and petals of this species are long, very narrow, and curiously twisted. Lælia Arnoldiana, from Messrs. Pitcher and Manda, Hextable Nursery, Swanley, had a number of its bright rosy-crimson flowers; it is, indeed, a very elegant species, the shading off of the colour from the apex of petals, &c., giving a bright appearance. Flowers of a good form of Vanda cœrulea came from W. C. Atkinson, Esq., Aigburth, Liverpool.

Captain Hincks sent flowers of Masdevallia stella × from Estradæ, fertilised by Harryana, the resulting flower leans to the first-named parent in general features; it is light rose with yellow tails, and each sepal is larger and broader than those of M. Estradæ. By a photograph which was exhibited, we see that the flowers are borne high up on erect stalks, as in M. Harryana. Lælia Perrini and the Oncid-like Odontoglossum Londesboroughianum were sent by J. Crespin, Esq, Fishponds, Bristol.

Fruit Committee.

Present: Sir C.W. Strickland, Bart., in the chair; and Messrs. J. Lee, R. D. Blackmore, W. Wilks, T. F. Rivers, R. Hogg, G. W. Cummins, J. Wright, W. Denning, W. Bates, J. Smith, G. Wythes, J. Hudson, H. Balderson, F. Q. Lane, A. H. Pearson, P. Crowley, J. Cheal, and J. Willard.

There was some good fruit shown. Messrs. Wm. Paul & Son, Waltham Cross, exhibited a collection of Apples, embracing specimens of average quality of the principal varieties, and also a few fruiting examples of a Raspberry with good-sized fruits, called October Red; a variety with yellow fruits was named October Yellow—they seem to be good fruiting varieties.

Messrs. Jarman & Co., Chard, contributed several seedling Apples of good appearance generally. A collection of Apples was also sent by Mr. Gaymer, Attleborough, Norfolk, who grows for the manufacture of cider, samples of which were on view; it is bright, sparkling, and very agreeable. The ordinary cider Apples are largely used, but some of the better sorts are also included.

A varied collection of cottage garden fruits came from Mr. Robert Fenn, Sulhamstead, Reading, among them being several Apples, Nuts, Plums including the Bullace, and Brown Turkey Figs, ripened on a cottage wall. He also had samples of Gooseberry wine, some of which was over twenty years old, and very good in flavour.

A capital lot of Golden Noble Apples came from Mr. J. Hudson, gr. to Messrs. Rothschild, Gunnersbury House, Acton, all being very clean, and of large size; it is a variety which evidently suits the district well. Apple D. T. Fish was shown by Mr. Balderson, Hemel Hempstead; it has a yellow skin, flushed with red. Apple Beauty of Stoke was sent by Mr. H. Pearson, and was considered favourably by the committee; it has a deep green colour, but of its merits we are unable to speak. And an award was also made to a new red-flesh Melon, Westley Hall, sent by Mr. A. Bishop, Westley Hall Gardens, Bury St Edmunds.

Mr. Wythes, Syon House Gardens, Brentford, showed a couple of very fine fruits of Monstera deliciosa, and also large fruits of a Banana; while from the Society's gardens at Chiswick were a few Apples, Aubergines, and the Tree Tomato, Cyphomandra betacea, illustrated in our issue for March 19, 1887. Mr. Faulknor, Inkpen, Hungerford, had samples of wines made from Raspberries, and also from Gooseberries and other garden fruits.

Awards were made as follows:—

By the Floral Committee.

Awards of Merit.

To Richardia æthiopica Little Gem, from Mr. H. E. Elliott.

To Bouvardia Purity, from Mr. H. B. May.

To Carex sp., from Mr. J. Robson.

To Chrysanthemum Pink Lacroix from Mr. H. J. Jones.

To Cunilla Mariana, from Messrs. Pitcher & Manda.

By the Orchid Committee.

First-class Certificates.

To Cattleya aurea Imschottiana, from Baron Schroder.

To Cattleya Warocqueana flammea, from M. Linden.

To Cattleya Warocqueana amethystina, from M. Linden.

Awards of Merit.

To Cattleya aurea Lindeni, from M. Linden.

To Cattleya Du Buyssoniana, from M. Linden.

To Catasetum Bungerothi var. Randi, from M. Linden.

Botanical Certificates.

To Bulbophyllum amplum, from Sir Trevor Lawrence.

To Angræcum Kimballianum, from Mr. W. Vanner.

By the Fruit Committee.

First-class Certificates.

To Melon Westley Hall, from Mr. A. Bishop.

To Apple Beauty of Stoke, from Mr. H. Pearson.

Medals.

Silver-gilt Banksian, to Mr. H. B. May, for a group of foliage plants and Ferns.

Silver Banksian, to Messrs. W. Paul & Sons, for cut Roses; to Mr. H. J. Jones, for a group of Chrysanthemums; to Messrs. W. Paul & Sons for collection of Apples.

Silver Flora, to Baron Schroder, for a group of rare Orchids.

Bronze Banksian, to Mr. C. Turner, for a collection of Dahlias; to Mr. W. Gaymer & Son, for a collection of Apples.

The Jams, &c.

October 14, 15, 16.—The exhibition of jams and bottled and preserved fruits was decidedly a disappointment, and the exhibits were very few; but at the same time, as far as jams and whole bottled fruits are concerned, the purpose of the exhibition will, perhaps, have been served, as there is a great similarity between the various firms' productions. Amateurs contributed some curious samples, among the chief of these being those from Mr. A. Dean, Bedfont, who, in the absence of fruits proper, has supplied the omissions with preserves of Tomato, Carrot, white Marrow, and Beetroot, the two last being to our mind the most successful; but the Carrot is not to be despised.

Mrs. Fenn, Sulhamstead, had a very large collection of several varieties of home-made jams, embracing the usual home productions, and mixtures of Apple with Mulberry, Blackberry, &c.; but the Strawberry jam was thought most of.

Sir C. W. Strickland, Bart., Hildenley, Malton, sent pots of preserve made from the wild Strawberry and the Blackberry; Mrs. Shore, 16½, Paul's Place, Newington Green Road, N., sent Blackberry jam and Orange marmalade; and Lady Susan Byng, Sherborne House, Gloucester, sent some very good coloured Apricot and Red Currant jams.

But an "out-of-the-way" product was that of Mr. W. Roupell, Harvey Lodge, Streatham, S.E., who contributed a pot of jam made from the Muscat of Alexandria Grape, which was considered to be of good flavour; but it is, of course, a jam which is not likely to be made in any quantity, as the demand for the Grapes is too great.

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, S.W., made a most interesting display of various syrups, preserved fruits, &c., from Turkey, where Mr. H. J. Veitch has recently been visiting, and we append a complete list of what was included:—

Syrups.—Orange, Madella Cherry, Rose, Raspberry, Verjuice (sour Grapes), Strawberry, Mandarin Orange, Pine-apple, Cornel, Tamarind, Isnicola Raspberry, and Grape Treacle.

Preserved Fruits.—Arabian Apricot, Cornel Berries, Orange, Madella Cherries, Apricot, Quince, Broussa Peach, Pear, Apple, White Plum, Citron, Egg Plant, Walnut, Date, Peach, Strawberry, Jujube, Fig, Prunes, Raspberry, and Rose.

Candied Fruits.—Pear, Apricot, Orange, Persian Fistiks, Almonds, Citron.

Dried Fruits.—Mecca Dates, Smyrna Pears, Arabian Apricots, Manna, Cretan Locust, Arabian Apricot Paste, Madella Cherries from Kutajah, Anatolia.

Sweets.—Vanilla, Black Cherry, Rose, Bergamot, Mastik (handed to guests to be taken by spoon, with water afterwards). Also Tomato Paste, and Black Olives.

Besides the foregoing, there was a collection of several common articles of food offered for sale on barrows in the streets of Constantinople, which included baked and unbaked Teblebee, baked Nuts, St. John's Bread (John the Baptist's Locust), baked and unbaked Pistacio Nuts, American Earth or Butter Nut, Persia Apricot, baked Pumpkin seeds, Sunflower seeds, Stone Pine seeds— used for kitchen purposes, pastry, &c. The group of articles of food was particularly interesting and instructive.

Among the trade collections of jams, &c., the largest was that of Messrs. T. W. Beach & Sons, Ealing Road, Brentford, to whom a Silver Knightian Medal was given, and whose bottled fruits were an attractive display; and it may be mentioned, that the fruit from Lord Sudeley's fruit farms at Coddington is preserved by this firm, samples of Plums and other fruits grown on the estate being shown. Messrs. Beach also grow fruit largely. The chief jams were those made from Strawberries and Raspberries. As regards the last-named, the variety Semper fidelis is found to be the most suitable for jam-making, on account of its acidity; it also preserves with a splendid rich colour. Several varieties of Plums, bottled whole without sugar, were shown under name, the following being the varieties:—Bryanston's Gage, Sultan, Pond's Seedling, Warwickshire Gage, Gisborne, Prince Engleheart, and Pershore, which last finds great favour in the northern counties. Raspberries, red and black Currants, Damsons, and green Gooseberries were also shown, and each appears to preserve well.

Messrs. Chivers & Sons, Histon, near Cambridge, made another equally good but smaller display of practically the same fruits, preserved in the same way, but Plum, Blackberry, and green Gooseberry jams should be specially mentioned, and that made from Green Gage was of splendid clear colour. Bottled fruits in variety were also included, and a Bronze Knightian Medal was awarded.

Mr. J. E. Austin, 44, Clarence Street, Kingston-on-Thames, had several sorts, including green Plum jam, which was very clear, and of a light green colour; and also Quince marmalade, which is of a brisk sweet flavour, and of a yellowish brown colour.

From Mr. J. Edmunds, 10, Stonefield Terrace, Liverpool Road, London, N., came some foreign fruit preserves, &c., of excellent quality, including Mango chutnee, a very tasty preparation; Tamarinds, and preserved Mango, which, with its beautiful clear yellow colour, and rich scent, was very attractive; but the flavour is somewhat disappointing and flat. Vanilla essence, together with beans and a living plant, were shown, and also ripe Mangos, Guava jelly, which is a favourite preserve in other countries, were also well shown.

General collections of jam, &c., came from Harrod's Stores, Brompton, and also from the Mid-Kent fruit factory, the latter also sending jellies, including Apple and Quince; and Messrs. Margetts & Co., 404, Kingsland Road, London, sent samples of Black Currant and of Strawberry jams; while candied peels and jams were also sent by Mr. D. Macgregor, West Savile Terrace, Edinburgh.

Tinned fruits in liquid were sent by Messrs. Ellis, Rislingbury & Co., 14, St. Mary Axe, E.C., who had Cherries, Green Gage, and Apricots, all Spanish produce, and known as the Matador brand. They were not of very great merit.

The "Frame Food" jelly was shown. It is said to be a preparation of Wheat phosphates, and is recommended in several forms as a staple article of food.

Awards were made as follows:—

Medals.—Silver Knightian, to Messrs. T. W. Beach & Sons; Bronze Knightian, to Messrs. S. Chivers & Son; and to Mr. D. MacGregor.

Highly Commended.—Mr. Austin, and the Mid-Kent Fruit Factory, Tonbridge.

Commended.—Sir C. W. Strickland, Bart., and Mr. Edmonds.

Honourable Mention.—Messrs. J. Veitch & Sons, for a collection of dried and preserved fruits from Turkey.

Certificates of Merit.—To Mr. D. MacGregor, for candied Orange and Lemon peel; Mr. Austin, for Mulberry and Apple jam; Mid-Kent Fruit Factory, for Quince marmalade, Quince jelly, and Black Currant jam; Mrs. Fenn, for Strawberry jam; W. Roupell, Esq., for Muscat Grape jam.

CRYSTAL PALACE.

October 9, 10, 11.—The exhibition of hardy fruits held on the above dates, proved to be a very fine display so far as regards Apples, which were not only numerous, but of fine quality and well coloured. From the open class for a collection of not more than one hundred dishes, orchard-house grown fruit was wisely excluded. Splendid samples of the most popular varieties came from Messrs. G. Bunyard & Co., Old Nurseries, Maidstone, who were awarded the 1st prize, but Mr. J. Watkins, Pomona Farm, Hereford, followed very closely, also showing finely-coloured fruits. Mr. C. G. Sclater, Devon Nurseries, Heavitree, and the English Fruit and Rose Co., King's Acre, Hereford, both of whom staged creditable collections, were respectively 3rd and 4th. There were also other collections in this class, to which no prize was awarded, but were of good quality.

The amateurs also showed Apples well, and the twenty-four dishes from Mr. G. Woodward, gr. to R. Leigh, Esq., Barham Court, Maidstone, deserve a good share of praise for their size and clean appearance, Queen Caroline and Golden Spire being very fine.

Mr. T. A. Killick, Weavering, Maidstone, had the best twelve dishes, with well-coloured specimens, especially of Gascoigne's Seedling and Lane's Prince Albert.

Pears were very poorly represented, and in the open class the 1st prize was withheld, and Mr. Woodward received the 2nd; he stood in the same position in the amateur's section, where the chief place was taken by Mr. W. Chisholm, gr. to Captain Harcourt Rose, Oxon Hoth Park, Tunbridge, who had Pitmaston Duchess and Glou Morçeau in good samples.

Vegetables from Mr. R. Lye, gr. to W. H. Kingsmile, Esq., Sydmonton Court, Newbury, were very good and clean, and his twelve dishes won the chief prize in the amateur's class. Leeks, Cauliflowers, and Parsnips were excellent; other collections also contained some well-developed specimens. A class for vegetables arranged for effect is still included in the Crystal Palace schedule, and Mr. T. A. Beckett, Cole Hatch Farm, Penn, Amersham, was awarded the leading honour.

A feature at this show is formed by the classes devoted to Pumpkins, &c. Mr. G. Shepherd, Pulborough, Sussex, had the heaviest specimen, which turned the scale at 71 lb. Mr. Sturgess, gr. to B. P. Fearon, Esq., Court House, Banstead, received a 1st prize for a collection of Pumpkins and Gourds, while Mr. Osman, gr. to the South Metropolitan District Schools, Sutton, stood 1st, with a good collection of ornamental Gourds in great variety.

Special prizes were offered by Messrs. J. Carter & Co. for their Potatos, Mr. W. Pope, Highclerc Castle, Newbury, having the best two dishes. Mr. R. Lye sent six fine dishes, which won him a 1st.

Messrs. Sutton & Sons offered prizes for a collection of vegetables, the chief of which went to Mr. C. J. Waite, Glenhurst Gardens, Esher, for a finely grown lot.

Miscellaneous exhibits, not for competition, included some good collections of fruit. Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, sent a large number of Apples, and some first-class Pears—about 150 dishes in all, and also a nice collection of Dahlias. Messrs. Jarman & Co., Chard, had about 180 dishes of Apples, in good specimens, including a number of the best Cider varieties. A lot of about 250 dishes, Apples and Pears, was staged by Messrs. J. Veitch & Son, Royal Exotic Nursery, Chelsea, S.W., including some uncommon varieties, as Histon seedling Apple with clear yellow skin and lightly speckled; and Pear Buerré de Mortellet, which resembles a highly-coloured Doyenné Boussoch in appearance.

Messrs. J. Laing & Sons, Forest Hill, S.E., had a collection of well-grown Apples, and also a table of Tuberous Begonias. Messrs. H. Cannell & Sons, Swanley, sent Begonias, Dahlias, and Gourds. Messrs. G. Bunyard & Co., Maidstone, showed Apples, Pears, Nuts, &c., and also a few varieties of Grapes. Mr. Gaymer, Attleborough, Norfolk, had Cider. Messrs. Reid & Borneman, Lewisham, Chrysanthemums; Messrs. J. Peed & Sons, Apples; and a display was also sent by the members of the British Fruit Growers' Association; while Mr. Beach, Brentford, contributed a number of jams and whole bottled fruits.

ROYAL AQUARIUM.

October 15, 16, 17.—A capital display was held on these days at the Royal Aquarium, Westminster. There were some good vegetables shown in the collections, and Apples were largely exhibited, while in the classes for Chrysanthemums, where the prizes were offered by the National Chrysanthemum Society, there were some very fine Japanese blooms staged.

The best stand of twenty-four Japs., distinct, was from Mr. C. Gibson, gr. to J. Wormauld, Esq., Morden Park, Surrey, who led with very fine blooms, in which E. Molyneux, Stanstead White, Etoile de Lyon, Mdlle. Lacroix, Golden Dragon, Stanstead Surprise, and W. Holmes were among the best, large and well coloured. Mr. J. Doughty, gr. to Mrs. Tomlin, Anglesea Park, Cranbrook, who followed very closely in a large competition, E. Molyneux, G. Daniels, Baronne de Prailly, Duchess of Albany, and Avalanche being well shown.

In the class for twelve Japanese, distinct, Mr. C. Blick, gr. to Martin R. Smith, Esq., The Warren, Hayes Common, led with very creditable specimens, Baronne de Prailly, Hamlet, and Monsieur Freeman looking fine. C. E. Shea, Esq., The Elms, Foot's Cray, Kent, followed, with Etoile de Lyon and Criterion, but his blooms although good were decidedly smaller.

Mr. C. Cox, gr. to J. Trotter, Esq., Brickendon Grange, Hertford, was placed 1st in the class for six white Japanese, showing a beautiful lot of Avalanche, large, pure, and of fine substance; Mr. C. Ritchings, Beddington, was 2nd, with the same variety.

The best six Japanese, any other colour, came from Mr. J. McKenzie, gr. to F. S. W. Cornwallis,

Esq, M.P., Linton Park, Maidstone, who led with Stanstead Surprise.

In the amateurs' class for six, distinct, there were not very good samples generally, but Stanstead Surprise and Criterion appeared well in the leading stand, shown by Mr. R. C. Notcutt, Anglesea Road, Ipswich.

Grapes were very good, and Mr. Goodacre, Elvaston Gardens, Derby, staged capital specimens; in the collection where he won the 1st prize, Foster's Seedling, Alicante, Gros Colmar, Muscat, and Alnwick Seedling were all equally creditable. He also showed the best three bunches of Muscat of Alexandria, beautifully finished, and large. Mr. J. Batten, gr. to A. Venables, Esq., Hollywood, Wimbledon Park, S.W., had the best three blacks, where Gros Maroc was very fine; and he also led for three Black Hamburghs; while for three bunches white Grapes, Mr. Osman, gr. to L. J. Baker, Esq., Chertsey, led.

Apples were of fine quality, and Messrs. G. Bunyard & Co., Maidstone; J. Watkins, Hereford; and J. Cheal & Sons, Crawley, were respectively 1st, 2nd, and 3rd, each having a large lot of well-grown samples. Mr. Ritchings sent six dishes of dessert varieties, which won for him a 1st prize, Ribstons and Blenheims being capital samples; and Mr. F. Bridger, gr. to Lord de l'Isle and Dudley, Penshurst Place, Kent, was 1st for the same number of culinary varieties, with good Warner's King and Peasgood's Nonsuch. Mr. T. Parker, Moreton Court, Hertford, had the best collection of eighteen dishes, with a fine lot of well-developed fruits, Peasgood's Nonsuch, Warner's King, and Golden Noble being very fine samples.

Pears were not much of a show as regards quantity, but Messrs. J. Cheal & Sons, who were deservedly awarded 1st in the class for a collection, although there were no others in competition, showed a very fine lot of about seventy dishes—well developed samples. For a collection of twelve dishes Mr. W. A. Cook, Compton Bassett, Calne, was 1st, staging good fruits of Pitmaston Duchess and Catillac in his lot; and for six dishes the prize went to Messrs. E. Palmer & Co., fruiterers, Waterloo Junction, South-Eastern Railway, London, Pitmaston Duchess, and Duchess d'Angoulême being really excellent.

For a collection of fruit, Mr. A. Miller, gr. to W. H. Long, Esq., M.P., Rood Ashton Park, Stourbridge, was placed 1st for an extensive lot—Grapes were a feature here, Alicante, Muscat, and Lady Downes being very well represented, while Apples and Pears were plentiful; Queen Pines, Countess Melon, Peaches, &c., were also shown; 2nd, Mr. Goodacre, for a smaller but more varied lot, Muscat, Alnwick Seedling, and Alicante Grapes were very good, also Countess Melon, Plums, Cherries, and Queen Pines.

Vegetables were of very good quality throughout, and the competition for the collections was severe and close. Mr. W. Pope, Highclere Castle Gardens, Newbury, led with sound, clean samples, Peas being included; while for prizes offered by Messrs. Sutton & Sons, Mr. C. J. Waite, Esher, was 1st, and the same exhibitor also their 1st prize for Tomatos, showing very well. Chief prizes in other classes for Tomatos, were taken by Messrs. Fellowes & Ryder, Northumberland Nursery, Orpington—a capital lot and by Mr. W. Wells, Redhill. Mr. Deverill, Banbury, offered prizes for Leeks and Onions, which were taken by Messrs. Lye and Wilkins respectively.

Trade exhibits, not entered for competition, were numerous. Messrs. J. Veitch & Sons, Chelsea, staged a very extensive lot of well-coloured Apples and Pears; and Mr. J. Miller, Ruxley Lodge Gardens, Esher, also had a good lot of Apples. Messrs. Jarman & Co., Chard, had a capital lot of cider fruits and others, also Pears, while other exhibitors of Apples were Messrs. J. Laing & Sons, Forest Hill, S.E.; Messrs. J. Peed & Sons, Roupell Park, S.E.; and the British Fruit Growers' Association. Messrs. H. Cannell & Sons, Swanley, sent a lot of Gourds and Dahlias. Mr. T. S. Ware, Tottenham, had Carnation and Dahlias; and a large lot of Gourds came from Mr. Osman, gr. to the South Metropolitan District Schools, Sutton, Surrey. Tomatos, well-grown plants, were sent by Messrs. J. Carter & Co. Mr. H. J. Jones, Lewisham, contributed a group of Chrysanthemums; and Messrs. J. Laing & Sons had Begonias, and a capital collection of Chrysanthemums in pots, including Souvenir de Monsieur Menier, a deep brown-crimson reflexed Japanese flower.

WOOLHOPE FUNGUS FORAY.

The Woolhope fungus week is a sort of institution which seems to come round annually, like Christmas Day, but it does not always finish with the same amount of enthusiasm and satisfaction. Many of the old visitors would deem it a sort of heresy to be absent, and yet, of late years, the results seem to grow "small by degrees, and beautifully less." Yet so it is, for every year seems to be worse than the last, fungi being so scarce that no amount of hunting can discover them. All who remember the old days when long tables were crowded and piled up with the results of the daily excursions, look with regret upon the meagre baskets of modern days. Then the specimens could be counted by hundreds, but now, alas! only by two or three score, and those obtained by much labour and extensive perambulations. Without staying to investigate or speculate upon causes, the fact remains in its naked truth, that the fleshy fungi have been decreasing in number every year for several years, and this year it was exceedingly difficult to find any, even of the commonest species of the olden times, which were then passed by in hundreds as unworthy of attention. Ten or twelve years ago, and as many square yards of an ordinarily prolific locality would have furnished as many individuals as can now be found, by diligent searching, in a week of excursions, and over miles of the old ground.

The mycologists assembled at Hereford on Monday, September 29, in rather diminished numbers, and the first excursion, on the following day, in the lawns and grounds of Whitfield, and the most successful of the week. The only two species of interest were a Cochnarius and a Collybia, both of which had been found in other localities, a few years since, but never named or described.

The Wednesday's excursion was taken at Belmont and Hayward Forest, and on Thursday at Dinedor Hill and the lawns and grounds of Rotherwas Court. Not a single noteworthy species was found, except perhaps a cluster of several specimens of Lactarius controversus.

During the evenings, papers were read on "Controverted Agarics," by Dr. M. C. Cooke; "On the unexpected appearance of two species of Fungus in a field which was under regular cultivation four years ago," by Rev. Canon Du Port; "Remarks on Teratology," by Rev. J. E. Vize; "The Florula of the Doward Hills Mosses," by the Rev. Aug. Ley; "Oyster Culture," by Dr. J. A. Crespi; and "Trapdoor Spiders," by the Rev. J. E. Vize.

The last excursion, on Friday, October 3, was taken in Devereux Park, but soon resolved itself into long straggling walks in search of the picturesque, more readily found than fungi. On the road back, the carriages were halted for tea at Lugwardine Court, the residence of the President, Sir Herbert Croft, who read a short paper of "Australian Notes," giving a few of his experiences in the colonies. The excursions were fairly well attended, but the customary dish of fungi at the public dinner "cooked from the club receipts" was absent, the first time for very many years, on account of the dearth of fungi. *M. C. C.*

ROYAL HORTICULTURAL OF ABERDEEN.

Annual Meeting.—The annual meeting of this Society was held in the Hall of the Christian Institute, Aberdeen, on Saturday, the 11th inst. Mr. J. Murray Garden, Advocate, President of the Society, in the chair.

Annual Report and Accounts.—The report by the directors to the members was read by the secretary (Mr. A. M. Byres) as follows:—The directors have pleasure in reporting to the members that the Society continues to carry out the objects for which it was formed, namely, the encouragement of all efforts to improve the knowledge of scientific horticulture, and to extend its practice in Aberdeen and the north of Scotland. The annual floral *fête* was held in the Duthie Public Park on Thursday, Friday, and Saturday, August 21, 22, and 23, and proved, notwithstanding the inclemency of the weather, a financial success. The entries numbered 1607, as against 1627 in 1889. A notable feature in connection with the *fête* was the two-part lecture, entitled, "How Plants Feed," delivered by Professor J. W. H. Trail, which proved highly interesting and instructive to those present.

The financial surplus amounted to £60 6*s.* 5*d.*, which, added to the balance brought forward from last year, makes £188 19*s.* at the credit of the Society. The directors beg to remind the members of the spring show to be held next year, and to request their cordial support in connection therewith. The best thanks of the Society are due to the Aberdeen Town Council for granting the use of the Duthie Park; to Professor Trail for his admirable lecture; and to Professor Milligan, for his services in connection with the opening of the *fête*. The Directors desire to place on record the deep obligation under which the Society lies to the Chairman, Mr. James Murray Garden, for the warm interest he has taken in the welfare of the Society, whose claims he has so successfully advocated to the citizens of Aberdeen.

After a lengthy and not altogether pleasant discussion of the affairs of the Society, the meeting proceeded to the election of office-bearers, and, on the motion of the Chairman, Lord Provost Stewart was, without dissent, reappointed Honorary-President of the Society. The Hon. Vice-Presidents and Hon. Directors were also unanimously reappointed.

Baillie Crombie, in proposing that Mr. James Murray Garden be requested to accept again the office of Chairman, said they all knew the great trouble and interest he had taken in the affairs of the Association for some years. It was the feeling of the present Directors that he should continue for another year, and he was perfectly certain that the Directors about to be appointed would wish he would again accept the office.

Baillie Byres, in seconding, said that no more efficient chairman could be got in the city of Aberdeen.

Mr. Murray Garden returned thanks for his re-election, and hoped the Society would continue to prosper.

Mr. Alexander Robson was unanimously re-appointed vice-chairman, the Chairman and Baillie Lyon alluding to the great interest which that gentleman took in the affairs of the Society.

The following were then appointed acting directors:—Professional gardeners: Gregor, Fairfield; Ogg, Heathcot; and Ross, Cranford. Market gardeners: Messrs. Milne, Queen's Road, West; Leslie, South Stocket; Davidson, South Stocket; and Anderson, Cornhill. Nurserymen, florists, or jobbing gardeners: Messrs. Troup, Gramtehill; Giles, Union Street; Cocker, senr., Sunny Park; and Mavor, jun., Holburn Street. Amateurs: Baillie Crombie, Messrs. D. M. Smith, Minty, and Pope. Working class: Messrs. Maitland, Edwards, Gillespie, and Bowers. Messrs. Alex. Robson and William Reid were re-appointed auditors. Mr. A. M. Byres was unanimously re-elected secretary and treasurer; the Chairman in nominating him, suggesting that the question of his remuneration should be considered by the directors.

The meeting closed with a hearty vote of thanks to the Chairman.

NATIONAL CHRYSANTHEMUM.

Oct. 15.—A meeting of the Floral Committee of this Society took place at the Royal Aquarium, there being a large number of novelties in the way of Chrysanthemums, with some other subjects. Mr. R. Ballantine presided.

Messrs. J. Laing & Co., Forest Hill, had a number of new Chrysanthemums, and a First-class Certificate of Merit was awarded to Souvenir de Mons. Menier, a reflexed Japanese, with large and full dull crimson-coloured ball-like flowers. Several there were of a promising character, but not in good condition on this occasion. Mr. N. Davis, Lilford Road, Camberwell, had the pink sport from Mdlle. La Croix, which was awarded a First-class Certificate under its first name, Annie Clibran. This sport appears to have occurred in several places, as it was shown by four or five exhibitors, and it was said that Annie Clibran is the best form of it. The same award was made to Japanese incurved Miss Annie Hartshorn, a large waxy-white variety, with massive petals, raised by Mr. W. K. Harris, of Philadelphia, U.S.A. Hamlet (Delaux), ruby-brown, and Bouquet de Dame, were very good also.

From Mr. E. Molyneux, Swanmore Park Gardens, Bishop's Waltham, came Japanese, Puritan, a large, broad-petalled, white variety, quite distinct in character; and Mr. Falconer Jameson, rich bright brownish-gold—a magnificent flower, of great size and beauty. Both the foregoing were awarded First-class Certificates of Merit.

Mr. E. Beckett, The Gardens, Aldenham House, Elstree, received First-class Certificates of Merit for

Japanese, W. H. Lincoln, a large golden incurved Japanese, of fine quality; and Charlie Sharman, pale bright rosy-lilac, shaded with plum, distinct, and pleasing in colour.

Mr. E. Boyce, Archway Road, Highgate, had several new varieties of promise. Mr. J. Dinsmore, The Cedars, Harrow Weald, sent Mrs. S. Fitzjohn, a golden sport from the Japanese M. Garner, which was thought to be too much like Sunflower.

Messrs. Pitcher & Manda, Swanley, had Japanese, Elliot F. Shepard and Mohawk, the latter in the way of Edwin Molyneux, but brighter. Mr. J. Doughty, Cranbrook Park Gardens, had Japanese George Daniels, delicate blush, with large florets. Messrs. H. Cannell & Sons, Swanley; and Mr. R. Owen, Castle Hill Nursery, Maidenhead, also had promising seedlings.

ESSEX FUNGUS FORAY.

The annual foray of the Essex Field Club was taken this year on Friday and Saturday, October 10 and 11, in Hatfield Forest, near Great Hallingbury, Essex, with head-quarters at the Chequers Hotel, Bishop's Stortford.

It was considered desirable, after having for twelve consecutive years explored Epping Forest in search of fungi, to make a diversion in favour of some other locality in the county, and a promising selection was made; but although the locality, arrangements, and even the weather were all that could be desired, the fungi were conspicuously absent. By dint of the most persistent effort, 120 species of all kinds were determined during the two days, but many of these were confined to single specimens. On the whole, the catalogue of Essex fungi was augmented by nearly twenty species, amongst which the most noteworthy were:—Agaricus (Clitocybe) geotropus, Agaricus (Clitocybe) opacus, and Gomphidius viscidus. It was humorously discussed during the day whether the last British Agaric would not soon disappear, and one of the disputants contended that circumstances favoured the conclusion—that in a few years the fleshy fungi would be extinct in Britain. Perhaps some horticulturists and agriculturists will hope that certain small fungoid pests and parasites will take their departure at the same time. *M. C. C.*

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (−) the Mean for the week ending Oct. 11.	Accumulated. Above 42° for the Week.	Accumulated. Below 42° for the Week.	Accumulated. Above 42°, difference from Mean since Jan. 1, 1890.	Accumulated. Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (−) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1890.	Rainfall. Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg	Day-deg.	Day-deg.	10ths Inch.		In.		
1	3 +	62	0	+ 170	− 79	4 —	203	42.1	25	25
2	5 +	76	0	+ 27	− 66	7 —	168	24.1	41	30
3	3 +	80	0	+ 120	− 96	4 —	142	18.9	30	30
4	2 +	85	0	+ 37	− 42	4 —	140	17.9	55	38
5	2 +	76	0	+ 7	− 34	4 —	137	17.2	47	33
6	2 +	91	0	+ 23	− 71	5 —	136	21.0	48	36
7	3 +	75	0	+ 53	− 77	7 —	173	39.4	28	32
8	3 +	82	0	+ 101	− 82	6 —	162	25.7	25	30
9	1 +	87	0	− 23	+ 11	5 —	164	27.9	43	36
10	4 +	81	0	+ 69	− 58	4 —	189	27.1	19	30
11	3 +	93	0	+ 73	− 16	2 —	176	30 8	28	33
12	0 av.	101	0	+ 37	− 22	8 —	157	24.2	57	44

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending October 11, is furnished from the Meteorological Office:—

"The *weather* was unsettled and somewhat rainy in nearly all parts of the kingdom during the first two or three days of the week, but subsequently became very fine and dry at all except our extreme N.W. stations.

"The *temperature* has been equal to the mean in the 'Channel Islands,' but in all other districts it has been above, the excess having ranged from 1° in 'England, S.W.,' to 4° in 'Ireland, N.,' and 5° in 'Scotland, E.' The day readings have been uniformly high, but towards the close of the week sharp ground frosts were experienced at the inland stations. The diurnal range was, therefore, at this time very high, maxima ranging from 66° to 70° being reported over Great Britain, while the minima were as low as 30° in 'England, S.W.,' 31° in 'Scotland, W.,' and 32° to 35° in nearly all other districts.

"The *rainfall* has been less than the mean in all districts.

"*Bright sunshine* has continued rather deficient over Ireland and the extreme north-western and northern parts of Great Britain, but over all the eastern and southern districts the percentage of the possible duration was large, the values ranging from 41 in 'Scotland, E.' and 43 in 'England, S.W.,' to 48 in 'England, S.,' 55 in 'England, E.,' and 57 in the 'Channel Islands.'"

MARKETS.

COVENT GARDEN, October 16.

Business quiet, with hothouse fruit in good supply. Apples short; Kent Cobs coming shorter, with prices higher. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	3 6	7 0	Melons, each	0 6	2 0
Cobs, Kent, 100 lb.	60	65 0	Peaches, dozen	3 0	12 0
Grapes, lb.	0 9	2 9	Pine-app'es, St. Michael, each	2 0	6 0
Lemons, per case	20 0	40 0			

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, each	0 4	0 6	Mushrooms, punnet	2 0	...
Beans, French, lb.	0 4	0 6	Mustard and Cress, punnet	0 4	...
Beet, red, per dozen	1 0	2 0	Onions, per bunch	0 5	...
Carrots, per bunch	0 6	...	Peas, per quart	1 0	...
Cauliflowers, each	0 3	...	Parsley, per bunch	0 4	...
Celery, per bundle	1 6	2 0	Shallots, per lb.	0 6	...
Cucumbers, each	0 4	0 6	Spinach, per bushel	2 0	...
Endive, per dozen	2 0	...	Tomatos, per lb.	0 9	...
Herbs, per bunch	0 4	...	Turnips, per bunch, new	0 4	...
Lettuces, per dozen	1 6	...			

Potatos.—Our market is gradually getting more settled. Best samples of Magnums and Bruce, 80*s.* to 90*s.*; Snowdrops, 85*s.* to 95*s.*; Imperators, 70*s.* to 80*s.*; ordinary and inferior samples, 45*s.* to 70*s.* Supplies not so heavy, and stock at Potato dépôts reduced this week. *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Ericas, various, doz.	8 0	18 0
Aspidistra, doz.	18 0	42 0	Ferns, in var., doz	4 0	18 0
— speci. plants, each	7 6	10 6	Ficus elastica, each	1 6	7 0
Asters, per doz.	4 0	9 0	Foliage plants, various, each	0	10 0
Begonias, per doz.	4 0	6 0	Fuchsia, per doz.	3 0	6 0
Bouvardias, p. doz.	9 0	18 0	Heliotrope, per doz.	4 0	6 0
Chrsanthem., p. doz.	4 0	18 0	Hydrangeas, doz.	9 0	18 0
— specimen plants, each	2 6	5 0	Liliums, various, per dozen	9 0	18 0
Coleus, per dozen	2 0	6 0	Marguerites, doz.	6 0	12 0
Cyperus, per dozen	4 0	12 0	Mignonette, per doz.	3 0	6 0
Dracæna terminalis, per dozen	30	60 0	Palms in variety, each	2 6	21 0
— viridis, per doz.	12 0	24 0	Pelargoniums, scarlet, per dozen	3 0	6 0
Euonymus, in var., per dozen	6 0	18 0	— per doz.	6 0	12 0
Evergreens, in var., per dozen	6 0	24 0	Solanums, per doz.	9 0	15 0

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Mignonette, 12 bun.	1 0	3 0
Asters, 12 bunches	3 0	8 0	Pelargoniums, scarlet, 12 spr.	0 3	0 6
— French, bunch	1 0	1 6	— dozen sprays	0 4	0 9
Bouvardias, per bun.	0 6	1 0	Primulas, double, 12 sprays	0 6	1 0
Callæthiopica, 12 bl.	2 0	5 0	Poppies, various, doz. bunches	1 0	2 0
Carnations, 12 blms.	1 0	2 0	Pyrethrum, 12 bun.	2 0	4 0
— 12 bunches	4 0	6 0	Roses, Tea, per doz.	0 6	1 6
Chrysanth., 12 bun.	3 0	6 0	— coloured, dozen	1 0	1 6
— 12 blooms	1 0	3 0	— red, per 12 bun.	2 0	6 0
Cornflower, 12 bun.	1 6	3 0	— Safrano, dozen	1 0	2 0
Dahlias, 12 bun.	2 0	4 0	— outdoor, 12 bun.	1 0	3 0
Eucharis, per dozen	2 0	4 0	Stephanotis, 12 spr.	3 0	5 0
Gardenias, 12 blooms	2 0	4 0	Tuberoses, 12 blms.	0 3	0 6
Gladiolus, 12 bun.	6 0	12 0	Violets, 12 bun.	0 9	2 0
Heliotropes, 12 spr.	0 6	1 0	— Parme, Fr., bun.	2 6	3 6
Lilium, var., 12 bl.	0 6	4 0	— dark, Fr., bun.	1 0	1 6
Maiden Hair Fern, do	4 0	9 0			
Marguerites, 12 bun.	3 0	8 0			
Michaelmas Daisy, 12 bun.	4 0	8 0			

SEEDS.

London: *Oct.* 15.—Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, London, E.C., write that to-day's market was thinly attended, and without any novel feature. Clover seeds all round are quiet but firm. Some fine new Brittany red Clover seed has been offering. Full prices are asked for Perennial and Italian Rye grasses. The sale for bird-seeds is meagre. Winter Tares are in moderate request at the remarkably low rates current; the ground is still too hard for Vetches to be sown. Blue Peas keep firm. In Mustard seed the tendency is downwards. Rape and Linseed are unaltered.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending October 11 and for the corresponding period in last year:—1890, Wheat, 30*s.* 11*d.*; Barley, 29*s.* 3*d.*; Oats, 17*s.* 5*d.* 1889, Wheat, 29*s.* 4*d.*; Barley, 29*s.* 8*d.*; Oats, 16*s.*

FRUIT AND VEGETABLES.

Spitalfields: *October* 15. — Good supplies of all kinds of farm and market-garden produce; demand, however, very slow, without material change in prices. Fruit scarce. Prices: English Apples, 4*s.* to 10*s.* per bushel; Pears, 3*s.* to 5*s.* 6*d.* per half-sieve; English Tomatos, 3*s.* to 4*s.* per peck; foreign do., 1*s.* to 1*s.* 6*d.* per box; Savoys, 2*s.* 6*d.* to 4*s.* per tally; Cabbages, 1*s.* 6*d.* to 2*s.* do.; Vegetable Marrows, 2*s.* to 3*s.* do.; Radishes, 2*s.* to 3*s.* 6*d.* do.; Spinach, 1*s.* to 1*s.* 6*d.* per bushel; Brussels Sprouts, 1*s.* 6*d.* to 2*s.* per half-sieve; Scarlet Beans, 1*s.* 6*d.* to 2*s.* do.; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Cauliflowers, 9*d.* to 1*s.* 6*d.* per dozen; Greens, 1*s.* 6*d.* to 2*s.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Carrots, 1*s.* 6*d.* to 2*s.* 3*d.* do.; Parsley, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Mint, 2*s.* to 3*s.* doz. bund.; Horseradish, 1*s.* 1*d.* to 1*s.* 4*d.* per bundle; Celery, 4*s.* to 9*s.* per dozen bundles; frame Cucumbers, 1*s.* to 2*s.* 6*d.* per dozen; natural do., 4*d.* to 9*d.* per dozen; Beetroots, 3*d.* to 5*d.* per dozen; Parsnips, 4*d.* to 8*d.* per score; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Cos Lettuce, 6*d.* to 1*s.* per score; Cabbage Lettuces, 4*d.* to 6*d.* per dozen; Leeks, 1*s.* 6*d.* to 2*s.* do.; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; English Onions, 4*s.* 6*d.* to 5*s.* per cwt.; Spanish do., 7*s.* to 7*s.* 6*d.* per case; Belgian do., 3*s.* 3*d.* to 3*s.* 6*d.* per bag of 110 lb.; Dutch do., 3*s.* to 4*s.* do.; Carrots, 20*s.* to 45*s.* per ton.

Stratford: *October* 15.—The supply has been good and a brisk trade done at the undermentioned prices:—Cabbages, 1*s.* to 4*s.* per tally; Savoys, 2*s.* 6*d.* to 4*s.* do.; Cauliflowers, 5*s.* to 6*s.* do.; Turnips, 20*s.* to 40*s.* per ton; Carrots, household, 40*s.* to 50*s.* do.; do., cattle feeding, 26*s.* to 32*s.* do.; Mangels, 15*s.* to 20*s.* do.; Swedes, 18*s.* to 21*s.* do.; Onions, English, 90*s.* to 100*s.* do.; do., Dutch, 4*s.* to 4*s.* 6*d.* per bag; Apples, English, 3*s.* to 7*s.* per bushel; Watercress, 7*d.* per dozen; Celery, 6*s.* to 9*s.* per dozen pods; Dutch Apples, 14*s.* to 18*s.* per cask; Walnuts, 4*s.* to 5*s.* 6*d.* per bag; Carrots, 2*s.* 6*d.* to 3*s.* per dozen bunches.

POTATOS.

Borough and Spitalfields: *October* 14.—Hebrons, 60*s.* to 90*s.*; Regents, 50*s.* to 70*s.*; Early Rose, 50*s.* to 60*s.*; Magnums, 50*s.* to 80*s.*; Imperators, 55*s.* to 80*s.* per ton.

Spitalfields: *October* 15. — Quotations:—Magnums, 50*s.* to 70*s.*; Regents, 50*s.* to 60*s.*; Champions, 45*s.* to 55*s.*; Imperators, 50*s.* to 70*s.*; Hebrons, 40*s.* to 65*s.*; Early Rose, 40*s.* to 45*s.* per ton.

Stratford: *October* 15.—Quotations:—Magnums, light, 55*s.* to 75*s.*; do., dark, 45*s.* to 50*s.*; Imperators, 55*s.* to 70*s.*; Hebrons, 50*s.* to 80*s.* per ton.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80*s.* to 105*s.*; do., inferior, 40*s.* to 75*s.*; hay, best, 60*s.* to 87*s.*; inferior do., 20*s.* to 50*s.*; and straw, 24*s.* to 40*s.* per load.

Enquiries.

"He that questioneth much shall learn much."—Bacon.

Weeding Walks. — Would any of our readers kindly inform R. B. L. & Sons where a horse-hoe for weeding walks may be purchased, and the cost of the same? [There is an implement used in market and Hop-gardens, called the Planet Cultivator, which can be fitted also with scarifiers, or hoes, that would serve our correspondents' purpose. Ed.]

Notices to Correspondents.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

Apple Trees not bearing: *F. C. T.* The blooms fall, but from what cause we cannot tell you. Examine the soil in which the trees are growing. it may be deficient in moisture; if such be the case, especially in the winter and spring, the fall of the bloom may be due to that cause. Manure will do good applied in spring and summer, if growth is less than it should be. It may be forked in or left on the surface as a mulch; if the soil is very hungry in its nature, apply it in both ways. Farmyard dung is best; the patent fertiliser you name would do much good.

Azalea Growers in Ghent: *B. H. E.* We cannot recommend dealers. Any one of the many firms in that place could supply you.

Bloom Dropping in Corridor: *W. S.* We are unable to advise you further than we have done already. There must be some reason for the loss of bloom and foliage, which might be detected by any good gardener who could see the place. Get a local gardener or nurseryman to advise you. Would you kindly send a small plant from the house to this office?

Boiler: *J. M.* Cannot advise without seeing the place. Consult a hot-water engineer.

Chrysanthemums: *W. H. D.* A species of sawfly—remedies as for Gooseberry sawfly. It was probably brought in the soil in which the plants were potted.

Chrysanthemum Marie Ernest Bergman: *J. F.* A variety so early to bloom and so floriferous as this one, is of value to gardeners generally. The colour, a shade of purplish-rose, is not common amongst early bloomers. It is pretty, and worth increasing.

Currants and Gooseberries: *F. C. T.* If the bushes are in full bearing, they will need manuring annually in early spring; or if growth be sparingly made, manure will be of benefit put on at the same time of year. Do not apply it if the wood is very strong.

Lawn: *New Lawn.* The coal-ash layer just under the turf answers for a time in keeping the worms below, but it starves the grass. Strong weeds will persist in coming through it.

Lectures on Agriculture, at 186, Aldersgate Street, E.C.: *W. R.* We are unable to inform you. Apply at the address you give.

Names of Plants: *H. S. K.* Sequoia sempervirens. —*F. Geeson.* Salix viminalis.—*G. C. J.* Mühlenbeckia complexa.—*R. and A. M.* Rosa rubiginosa, Eglantine, or Sweet Briar.—*A Five Years' Subscriber.* 1, Elæagnus longipes; 2, Punica granatum (Pomegranate); 3, Veronica sp.; 4, Abelia rupestris; 5, Cistus ladaniferus (Gum cistus); 6, Rhododendron variegatum; 7, Pittosporum undulatum; 8, Forsythia viridissima; 9, Basella rubra; 10, Daphne odorata; 11, send when in flower; 12, Strelitzia reginæ.—*C. B.* 1, Lælia Perrinii, a pale form; 2, Begonia sub-peltata rubra; 3, Justicea carnea; 4, Gymnogramma peruviana; 5, Bouvardia Hogarth; 6, Selaginella cæsia.—*H. E. G.* 1, Alternanthera paronychioides; 2, A. amœna; 3, A. paronychioides aurea; 4, A. magnifica.—*R. W.* Zephyranthes (Amaryllis) Atamasco.—*W. L.* 1, Viburnum opulus; 2, Oncidium prætextum; 3, Nephrolepis davallioides furcans; 4, Davallia pyxidata; 5, D. canariensis, probably; send fertile frond.—*A. W.* 1, Solidago serotina; 2, Chrysanthemum serotinum; 3, Hemerocallis fulva; 4, Malva alcea. —*J. E. B.* 1, Escallonia punctata; 2, Chrysanthemum serotinum; 3, Erigeron multiradiata; 4, Lonicera etrusca; 5, Olearia Haastii; 6, we do not recognise.—*E. M. A.* Quercus cerris.

Passifloras: *W. H. M.* Propagation by cuttings of about 6 inches in length, with a heel of old wood attached. Use sandy loam and leaf-mould, with a layer of sand on the top of the cutting-pot. Place in bottom-heat of 80°, under a bell-glass, or in a close frame.

Pear: *J. M.* The shoots are covered with scale insects. Wash the tree with petroleum emulsion or Gishurst soap.

Roots in Drain: *C. N.* It is unusual for the roots of plants in drains and excluded from light, to throw out "growing shoots." The roots, we should suppose, belong to some kind of plant which has one of its modes of increase by stolons. Can you not discover what the plant is whose roots have got into the drain?

Vine Fruiting Cane: *Hensell.* If you wish to fruit the cane, it may be planted in the Vinery at the present time. After excavating a hole 4 or 5 feet square in the inside border, and filling it with loamy soil, mixed with one-sixteenth of crushed bone, and as much mortar-rubble, the Vine may be cut back to a point 6 feet from the ground, at planting time, or at any time before growth begins. If the Vine is not to be cropped the first year, cut it back to rather less than half that length. Do not cut the roots, but spread them out. Another, and a very good method, of planting a young Vine, is to shake out the roots from the old soil late in March; spread them out on a raft—a mortar-board would do—with a few inches of rich soil laid thereon, and put about 4 or 5 inches of soil on the top of them. Start the Vine at a warmth of 45° by night, and 55° by day, gradually increasing the warmth as the season advances. The pruning may be as in the former case. Give the plant plenty of light, and proper ventilation, and water the soil when necessary. Keep laterals thinned out and stopped, and encourage the leader to grow. In June the plant may be slid off the raft into a properly prepared hole, and treated like the other Vines. This method is applicable to Vines planted in the outside border, as well. The only advantage that it offers over the other is, a quicker start, and therefore a longer season of growth.

Catalogues Received.

Ant. Roozen & Son, Haarlem—Pæonia sinensis.
W. Watt, Cupar and Perth—Bulbs and Roots.
Haage & Schmidt, Erfurt, Prussia — Novelties, Seeds, 1890.
S. G. Rumsey, Wrotham, Kent—Roses.
Messrs. Clark & Co., North Shields—Select Roses, and Select Bulbs.

Communications Received:—W. G. S.—A. M. B.—G. Gale —Dr. J. R. Bos.—E. S.—T. Trollope.—M. B.—A. W. S.—D. E.—C. K. (next week).—Bywater (will have the roots examined).—J. Allen.—J. J. W.—M. S. (examine our pages from time to time).—R. D. French.—G. B. C.—J. F. B —S. C.—Le Breton.—G. C.—F. F.—W. S.—C. B S.—F. R.—H. E.—R. W. Treseder.—J. P.—A. B. C. (next week) — J. H —Miss Sullivan.—Viola.

Lælia Schroderii Delicata.—Following the plate of the original L. Schroderii in the *Orchid Album*, i., t. 2, there now comes from M. Lucien Linden, l'Horticulture Internationale, Parc Leopold, Brussels, a noble five-flowered inflorescence, which may be appropriately designated as above. It is of the Lælia purpurata group, and, indeed, may merge into that species through L. p. Russelliana; but suspecting the influence of some other species, probably L. xanthina, the late Professor Reichenbach accorded specific rank to a still further extension in the direction of L. Schroderii, viz., L. Wyattiana, and Messrs. Williams and Moore, the sponsors for L. Schroderii, had a very good case in their *protégé*. The flowers of the charming variety alluded to are 6 inches across, the sepals and petals white, with the faintest suspicion of sulphur-yellow, the sepals also having a light tinge of rose at the back; the lip is white, with very fine lines of purple colour radiating from the base to the middle of the front lobe, where they are united by a patch of suffused lavender colour, which gradually fades as it approaches the tip of the labellum. It is pleasantly fragrant, and altogether a handsome plant. *James O'Brien.*

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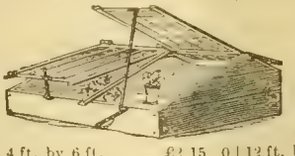


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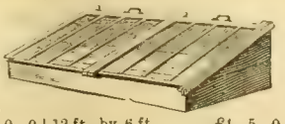


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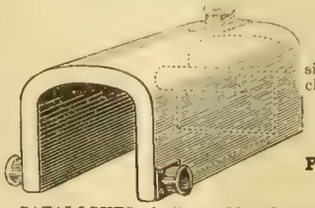
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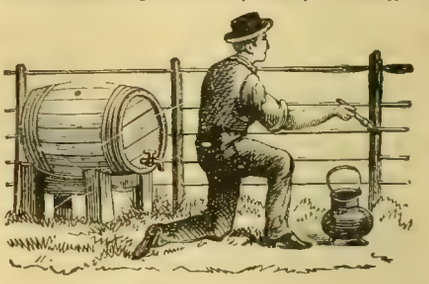
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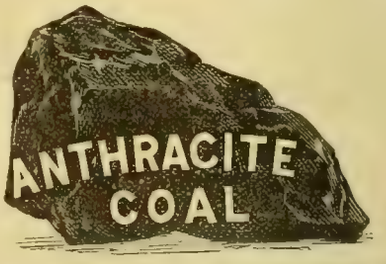
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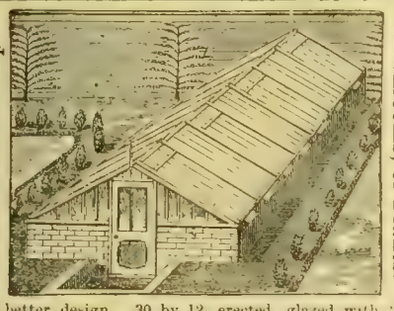
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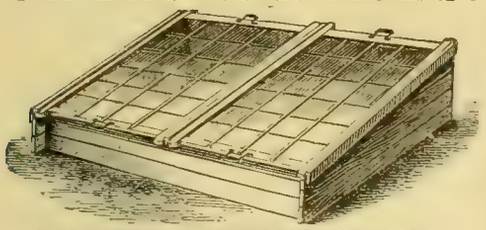
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Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position be guaranteed for advertisements occupying less space than an entire column.

Now ready, in cloth, 11s. 6d.

THE GARDENERS' CHRONICLE,
Vol. VII., Third Series, JAN. to JUNE, 1890.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

CRYSTAL PALACE.
GRAND EXHIBITION of CHRYSANTHEMUMS, FRIDAY and SATURDAY, Nov. 7 and 8.
Entries close October 31. Schedules on application to Mr. W. G. HEAD, Superintendent Gardens Department, Crystal Palace, S.E.

KENT COUNTY CHRYSANTHEMUM SOCIETY.
The THIRD ANNUAL EXHIBITION of CHRYSANTHEMUMS will be held in the Rink, Blackheath (opposite S. E. R. Station), on TUESDAY and WEDNESDAY, November 4 and 5, 1890. Over ONE HUNDRED and THIRTY-FIVE POUNDS in Money Prizes and Silver Cups. Special "Centenary" Class :—48 Blooms, 24 Japanese and 24 Incurved, distinct. 1st Prize, Silver Cup (value £10) and £8; 2nd Prize, £6; 3rd Prize, £4; 4th Prize, £2. Schedules, Entry Forms, &c., gratis of
H. A. NEEDS, Hon. Sec.
49, Ringstead Road, Catford, S.E.

PEMBROKESHIRE CHRYSANTHEMUM SOCIETY (affiliated to the N. C. S.).
The FIFTH ANNUAL SHOW and CENTENARY FÊTE at Pembroke, THURSDAY, November 6, 1890. The Centenary Medals of the National Chrysanthemum Show are offered for Competition. For Schedule of Prizes, &c., apply to
Mr. R. H. TREWEEKS, Hon. Sec., Pembroke.

BRADFORD and DISTRICT CHRYSANTHEMUM SOCIETY.—FOURTH ANNUAL EXHIBITION, NOVEMBER 7 and 8. Over ONE HUNDRED POUNDS in PRIZES. Entries close November 1. Schedules post-free.
GEO. R. TAYLOR, Hon. Sec., 102, Godwin Street, Bradford.

BRIGHTON and HOVE CHRYSANTHEMUM SHOW,
November 11 and 12.
Two Cups, £10 and £5, and good money prizes.
Schedules of—
MARK LONGHURST.
18, Church Road, Hove, Sussex.

CARTERS' CHOICE BULBS, as supplied to H.M. the Queen, the Royal London Parks, and the London County Council. For full particulars, see CARTERS' BULB CATALOGUE, containing a beautifully Coloured Plate of Christmas and Easter Flowers, gratis and post-free to Messrs. Carters' Customers; price 6d. to the general public, the amount to be deducted from first order.
237 and 238, HIGH HOLBORN, LONDON.

Chrysanthemum Exhibition.

LAING'S COLLECTION is now on View. All the Choicest Novelties and Best Standard Varieties, and many Seedlings can be seen. Inspection cordially invited. Catford Bridge (S. E. R.) Railway Station. Descriptive LIST, post-free.
JOHN LAING AND SONS, Forest Hill Nurseries.

LILIES OF THE VALLEY.
Best German Forcing-stuff.
Apply to H. DAMMANN, Jun., Breslau.

SCOTCH FIR.—Several thousands of tall healthy Plants for sale.
Apply to Mr. A. J. BURROWS, Pluckley, Ashford, Kent.

CARNATION (true pink Malmaison).—The Subscriber has a few hundreds to spare, at £4 per 100.
Apply, BROTHERSTON, Prestonkirk.

VIOLETS, for Winter Blooming.—Count de Brazza and Marie Louise, strong clumps, full of bloom buds, 16s. per 100.—Address, SHINGLER AND CHINERY, The Nurseries, Briston, East Dereham, Norfolk.

50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high. 15s. to £10 per 100, free on rail.
J. J. CLARK, Goldstone Farm, Brighton.

CUT MAIDENHAIR FERN all the year round. Present price, 100 fronds for 1s. 3d., Post-free, for cash. Special quotations for large quantities.
TAYLOR AND CO., Timperley, Cheshire.

J. CHAMBERS, Westlake Nursery, Isleworth, offers 20 good Plants in No. 12 pots, CŒLOGYNE CRISTATA, to sell cheap. VIOLA, Snowflake, 4s. per dozen.

RASPBERRY CANES. — 250,000 of the famous Fastolf variety for Sale. Price 25s. per 1000. In lots of 20,000 at 20s. per 1000, free on rail, Wisbech.
MANAGER, Osborne House Farm, Wisbech.

FRUITING VINES, extra strong.—Our stock of the above is exceptionally fine, and well worth an inspection by anyone wanting really first-class well-ripened Fruiting Canes.
H. LANE AND SON, The Nurseries, Berkhamsted, Herts.

CHOICE FRUIT — CHOICE FLOWERS. Highest Market Prices guaranteed. Prompt cash.
HENRY RIDES, Covent Garden, W.C.

WILLIAM NEWTON, FLOWER SALESMAN, Covent Garden, W.C., is prepared to RECEIVE CHOICE CONSIGNMENTS of CUT FLOWERS. W. NEWTON having a good connection, can guarantee highest Market Prices. Good references given. Account Sales daily. Cheques as desired.
Warehouse—29, Russell Court, Covent Garden, W.C.

WANTED, CHOICE FLOWERS of all kinds, for our Shop in Regent Street. Good prices given. Private Gardeners are solicited to correspond.
HOOPER AND CO. (Limited), Covent Garden, W.C.

WANTED, in October, 40,000 LARCH, about 2 feet transplanted, guaranteed raised from Tyrolese or Swiss seed. State price and particulars to—
H. T. ELWES, Preston, Cirencester.

WANTED, 500 strong well-rooted layers of MRS. REYNOLDS HOLE CARNATION.
PRICE AND CO., 60, Castle Street, Long Acre, London, W.C.

WANTED, to Purchase, a quantity of CHAMPAGNE RHUBARB.
Apply to C. B., Primrose Nursery, Sidcup.

WANTED, some good TURF, enough for two Tennis Lawns.
Address, LAVINGTON, Putney Heath, Surrey.

MARIE LOUISE VIOLETS, full of buds. Strong clumps, only 16s. per 100.
EASTY, Prospect Nursery, Sudbury, Suffolk.

FOR SALE, a few fine large KENTIAS and SEAFORTHIAS; also 18 fine healthy bearing PEACH TREES, 10 to 18 feet across, fibrously rooted, at reasonable prices.
W. ICETON, Granard Nursery, Putney Park Lane, S.W.

BULBS and FLOWER ROOTS. The cheapest offer of first-rate Bulbs in the Trade. Prices but little over auctions. Quality unsurpassed. See testimonials. Every article grown by a specialist. Early importations now to hand. CATALOGUES on application.
J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

NARCISSUS, Double White, price £1 per bushel; sample 50, post-free, for 2s. Cash with order.
J. J. CLARK, Goldstone Farm, Brighton.

SHOW and FANCY PANSIES, in Cuttings or Rooted Plants, of all the leading varieties, now ready for sending out.—M. CAMPBELL, Florist, High Blantyre, N.B.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

H. LANE AND SON solicit an inspection of their extensive Nursery Stock, covering over 150 acres, consisting of DECIDUOUS and EVERGREEN TREES and SHRUBS in great variety; ROSES, FRUIT TREES, RHODODENDRONS, FOREST TREES, CLEMATIS, IVIES, &c., all in fine healthy condition. Descriptive CATALOGUE free.
The Nurseries, Berkhamsted, Herts.

NEW WHITE CARNATION. "Mrs. Muir;" strong, healthy plants, now ready, 1s. 6d. each, 15s. per dozen, £5 per 100; also CARNATIONS and PICOTEES in all the different classes, 6s. per dozen; my own selection.—M. CAMPBELL, Florist, High Blantyre, N.B.

SCARLET CARNATION "Al. Alegatière."—A most handsome free flowering Tree Carnation, of sturdy compact habit, and bearing in great profusion well-formed brilliant scarlet flowers of great substance.
FINE STRONG PLANTS, covered with buds, in different stages, now ready to pot up for Winter-flowering in Greenhouse. Special cheap offer. 50s. per 100, 7s. 6d. per dozen.
Samples may be seen at 12, King Street.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

LARGE CAMELLIAS, ORANGE TREES, PALMS, &c., to be sold very cheap at Rothdaire.
COSTER, Rothdaire, Monasterevan.

LAING'S FRUIT TREES, ROSES, &c.—We cordially invite inspection of our large and fine stock of FRUIT TREES, ROSES, VINES, SEAKALE, Forcing Plants, &c. CATALOGUES, post-free.
JOHN LAING AND SONS, Seed, Plant, and Bulb Merchants, Forest Hill, London, S.E.

Plums and Damsons.

MESSRS. FLETCHER BROS. have a large quantity of the above, Standards and Half-standards.
Ottershaw Nursery, Chertsey, Surrey.

Strawberries, in 3½-inch pots.

FRANCIS R. KINGHORN offers very strong Plants of all the leading sorts, "La Grosse Sucrée," "Noble," "Latest of All," "Loxford Hall," &c. LIST on application.—Sheen Nurseries, Richmond, Surrey.

Prize Cob Filberts.

MR. COOPER, F.R.H.S. (late of Calcot Gardens), is the largest grower in the kingdom of Prize Cob Filbert Trees for Sale. Descriptive and Price LISTS on application to Mr. COOPER, Western Elms, Reading, Berks.

LAXTON'S "NOBLE" STRAWBERRY PLANTS, 30,000, at 25s. per 1000.
Apply, WM. CHAMBERS, Southfleet, Gravesend.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nurserymen and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Dutch Bulbs.

GREAT UNRESERVED SALES.
Four times Weekly.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, all received direct for Unreserved Sale, and lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Cliffe, near Rochester.

Adjoining the Cliffe Railway Station, South Eastern Railway.
Without Reserve.

GREAT ANNUAL SALE of FRUIT TREES.

Important to Nurserymen, Market Gardeners, Fruit Farmers, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Perry Hill, Cliffe, near Rochester and Gravesend, adjoining the Cliffe Railway Station, S. E. Ry., on MONDAY NEXT, October 27, at 12 o'Clock precisely, by order of Mr. W. Horne, 85,000 FRUIT TREES, comprising 35,000 Standards, Half-standard, and Maiden Apples, Pears, Plums, and Cherries; 30,000 Baldwin Black Currants, 5000 Raby Red Currants, 15,000 Gooseberries, 30,000 Raspberry Canes, 72,000 Strawberry plants, including 50,000 Laxton's Noble, 20,000 Sir Joseph Paxton, 2000 plants in 6-inch pots for forcing; 20,000 Connover's Colossal ASPARAGUS, one year; 6000 LIGUSTRUM OVALIFOLIUM, Evergreen Privet, 1 to 3 feet; 50,000 Myatt's Early Spring CABBAGE plants.

May be viewed one week prior to the Sale. Catalogues can be had of Mr. Horne, on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.

12,000 LILIUM AURATUM and other LILIES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, October 28, at half-past 12 o'Clock precisely, 12,000 LILIUM AURATUM, received direct; 7000 L. LONGIFLORUM, 2000 L. SPECIOSUM RUBRUM and ALBUM; also a portion of the extensive collection of fine-st-grown LILIES, from Mr. W. Gordon, of Twickenham, including L. Humboldtii, L. Washingtonianum, L. umbellatum, and L. elegans; choice Japanese IRIS, and various HARDY BULBS.

On view morning of Sale, and Catalogues had.

Tuesday Next.

12,000 LILIUM AURATUM,
7,000 ,, LONGIFLORUM,
2,000 ,, SPECIOSUM RUBRUM and ALBUM.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on TUESDAY NEXT.

On view morning of Sale, and Catalogues had.

Wednesday Next.

SPIRÆA JAPONICA, AZALEAS, CAMELLIAS, and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London E.C., on WEDNESDAY NEXT, October 29, at half-past 11 o'Clock to the minute, AZALEA INDICA and OTHER PLANTS, from the Continent; Spiræa japonica, in splendid condition; Stephanotis floribunda and Cyclamen persicum; Dutch Bulbs; a fine selection of Narcissus from a private grower; Hardy Bulbs; and 5000 African Tuberoses, just received in fine condition. Also 40 large Palms.

On view morning of Sale, and Catalogues had.

Norbiton.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Londesborough Gardens, Coombe Lane, Norbiton, on THURSDAY, October 30, at 1 o'Clock precisely, by order of Lord Londesborough, 450 EUCHARIS AMAZONICA, 500 ADIANTUM CUNEATUM, 400 CALLAS, 100 BOUVARDIAS, 200 TEA ROSES, CARNATIONS, and MISCELLANEOUS PLANTS.

May be viewed two days prior to the Sale. Catalogues may be had on the Premises, of Mr. J. R. M'PHERSON, and of the Auctioneers, 67 and 68 Cheapside, London, E.C.

Friday Next, October 31.

LÆLIA PURPURATA, CATTLEYA LEOPOLDI, CATTLEYA INTERMEDIA, ONCIDIUM MICROPOGON.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Charlesworth, Shuttleworth & Co., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 31, at half-past 12 o'clock, a fine consignment of the above ORCHIDS. The plants are in extra fine condition, having, without exception, dormant eyes, and being well-leaved. The LÆLIA PURPURATA are very fine; indeed, many of them will push their flowers. Amongst the lots offered will be found some gigantic specimens. These plants have been specially selected for good shape, and look almost like cultivated plants. Also 7 very fine plants of CATTLEYA LABIATA AUTUMNALIS, the true autumn-flowering C. labiata of the finest dark varieties, now so very scarce, and only represented in a few collections. A quantity of unflowered ODONTOGLOSSUM ALEXANDRÆ, together with many ORCHIDS in Flower and Bud, &c.

On view morning of Sale, and Catalogues had.

Cattleya labiata autumnalis.

MESSRS. PROTHEROE AND MORRIS will include in their SALE by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 31, at half-past 12 o'Clock, 7 very fine plants of CATTLEYA LABIATA AUTUMNALIS, the true autumn-flowering C. LABIATA of the finest dark varieties, now so very scarce, and only represented in a few collections.

On view morning of Sale, and Catalogues had.

Bagshot, Surrey.

HIGHLY IMPORTANT SALE of beautifully-grown NURSERY STOCK, by order of Messrs. JOHN WATERER & SONS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the celebrated Bagshot Nurseries, Bagshot, Surrey, within ten minutes' walk of the station, on MONDAY, November 3, and three following days, at 12 o'Clock precisely each day, several acres of NURSERY STOCK grown to the greatest perfection:—5000 Conifers in rich assortment, consisting of Cupressus, Thuias, Abies, Piceas, Retinospora, &c.; 6000 Evergreens, 2 to 6 feet, comprising Variegated and Green Hollies, Yews, Box, Portugal and Common Laurels; 5000 Rhododendrons, embracing all the choicest varieties in cultivation; fine standard Limes, 10,000 Spruce Firs, 2 to 3 feet, and numerous other Stock. Bagshot Station being situate on the property facilities are presented for the conveyance of purchases, and Messrs. J. Waterer & Sons will undertake to dispatch any goods bought at the Sale, simply charging for the time and labour incurred.

The Stock may be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tottenham, N.

GREAT ANNUAL SALE of NURSERY STOCK, HERBACEOUS PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Hale Farm Nurseries, Tottenham, N., adjoining the Hale Ry. Station, G. E. Ry., on TUESDAY, November 4, at 11 o'Clock precisely, in consequence of the large number of lots, by order of Mr. T. S. Ware, an immense quantity of NURSERY STOCK, HERBACEOUS PLANTS, &c. (for the growth of which these Nurseries are so celebrated), consisting of 25,000 Climbers of the very best saleable varieties, 80,000 extra strong Sealkale, exceptionally fine stuff; 5000 Ligustrum ovalifolium, 3000 Christmas Roses, 5000 Hollyhocks of an exceptionally fine strain; 25,000 Carnations and Picotees, including all the finest varieties in cultivation; 100,000 Berlin crowns Lily of the Valley in the finest possible condition; 10,000 Ornamental Trees and Shrubs, Standard and Dwarf Roses in great variety, 100,000 Forcing Plants and Bulbs in endless variety, and a grand lot of home-grown Lilies.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, and Leytonstone, E.

Exeter.

SIX DAYS' UNRESERVED SALE of exceptionally well-grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Exeter Nurseries, Exeter, on MONDAY, November 10, and five following days, at 12 o'Clock precisely each day, without the slightest reserve, by order of Messrs. Lucombe, Pince & Co., whose lease shortly expires, the particularly well-grown NURSERY STOCK, comprising 20,000 Fruit Trees, 15,000 Standard, Dwarf, and Pot Roses, 50,000 Conifers and Evergreens, 900 Fruiting and Planting Vines, 600 Hybrid Rhododendrons, 1000 Lucombe Oaks in pots, 12,000 Ferns of sorts, 4000 Palms, 6500 Heaths, several thousands of Azaleas, Bouvardias, Camellias, Clematis, Cyclamen, and numerous other stock.

The Stock may be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Sale of the renowned Collection of Orchids formed by the late E. HARVEY, Esq., of Aigburth, near Liverpool.

MESSRS. PROTHEROE AND MORRIS have been favoured with instructions from the Executors of the late E. HARVEY, Esq., to SELL by AUCTION, on the Premises, at Aigburth, near Liverpool, on NOVEMBER 10, 11, and 12, at 12 o'Clock precisely each day, the whole of the renowned COLLECTION of ESTABLISHED ORCHIDS, amongst which will be found the following fine plants:—

Laelia anceps Dawsonii
,, ,, stella
,, ,, alba
,, ,, Williamsii
,, ,, Amesiana
,, ,, Prothero ana
,, præstans var. nova
,, Gouldiana
,, elegans Wolstenholmiæ
,, ,, alba
,, ,, Blenheimensis
,, Philbrickiana
Lycaste Skinneri alba
Dendrobium Statterianum
,, Phalænopsis
,, nobile Cooksoni
,, ,, Sanderiana
,, ,, nobilius
,, Leechianum
,, chrysodiscus
,, splendidissimum
,, Griffithianum
Cœlogyne cristata alba
,, Massangeana
,, Dayana
Cypripedium œnanthum superbum
,, Charles Canham
,, Salmeri
,, vexillarium grandiflorum
,, œnanthum Wallisii
,, Barteli
,, Argus Moensi
,, vernixium
,, Harrisianum superbum
,, Morganiæ
,, ,, Burfordiensis
,, Hornianum
,, Leeanum superbum
,, fesselatum porphyreum
,, Mastersianum
,, Euryandrum
,, orphanum
Cypripedium politum
,, superbiens
,, tonsum
,, Niobe (new)
,, superciliare
,, Parishi
,, Saundersianum (rare)
,, Arthurianum
,, Horsmanni
,, Lemoinieri
,, Sedeni candidulum
,, Schrœderi
,, Ashburtoniæ
,, expansum
,, Crossianum
Maxillaria Sanderiana
Odontoglossum aspersum
,, crispum Mandeanum
,, lyroglossum
,, Chestertoni
,, Andersonianum
,, vexillarium superbum
,, ,, Chelsoniensis
Miltonia Moreliana
Oncidium macranthum
Cattleya Trianæ Backhouseiana
,, ,, Diadem
,, Mendeli varieties
,, Wagneri
,, Reineckiana
,, Exoniensis
,, Skinneri alba
,, crispa, fine plants
,, labiata, autumn flowering
Cymbidium Lowi
,, eburneum
,, Mastersianum
Vanda cœrulea
,, Sanderiana
,, Lowi or Renanthera Lowi
Angræcum sesquipedale

Also a quantity of Miscellaneous PLANTS and BULBS.

On view any day prior to the Sale. Catalogues had of the Gardener, on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Preliminary Notice.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on WEDNESDAY and THURSDAY, November 5 and 6, the whole of the valuable COLLECTION of ESTABLISHED ORCHIDS, by order of F. P. Leon, Esq., of Woodlands, Clarence Road, Clapham Park, S.W., who is relinquishing the growth of Orchids on account of his removal to Town.

Full particulars will appear next week.

Cooksbridge, Sussex.—Preliminary Notice.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. Wollard to SELL by AUCTION, on the Premises, The Cooksbridge Nursery, two minutes' walk from Cooksbridge Station, and two and a half miles from Lewes, Sussex, on FRIDAY, November 14, at 11 for 12 o'Clock precisely, a quantity of valuable and well grown NURSERY STOCK.

May be viewed any day prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Dutch Bulbs.—Dutch Bulbs.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots to suit all buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving weekly from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Clapham Common (West Side), First House from Nightingale Lane.

SALE THIS DAY.

MR. J. C. STEVENS will SELL by AUCTION, on the Premises, as above, this day, SATURDAY, October 25, at half-past 12 o'Clock precisely, by order of D. Wellby, Esq., a Small COLLECTION of STOVE and GREENHOUSE PLANTS, comprising Camellias, Azaleas, Palms, Ferns, Bouvardias, Gloxinias, &c. Also PHEASANTRIES, FOWL COOPS and RUNS, and SUMMER-HOUSE, together with about 100 lots of choice DUTCH BULBS, &c., &c.

On view morning of Sale, and Catalogues had on the Premises; and of the Auctioneer, 38, King Street, Covent Garden, W.C.

Tuesday Next.

SPECIAL SALE of DUTCH BULBS, Lotted to suit all Buyers

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, October 28, at half-past 12 o'Clock precisely, extensive consignments of BULBS and LILIES from Holland, comprising choice named Hyacinths, Tulips Crocuses, Narcissus, Scillas, Snowdrops, Lilies, White Roman Hyacinths, Paper-white Narcissus for forcing, Spiræas, Lily of the Valley, and other Bulbs and Roots, specially Lotted to suit all Buyers.

On view morning of Sale, and Catalogues had.

Wednesday Next.

Five hundred fine plants of AZALEA MOLLIS and A. INDICA, well set with buds, from Ghent. About 50 well-grown PALMS, &c.

MR. J. C. STEVENS will include the above in his SALE of DUTCH BULBS by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, October 29.

On view morning of Sale, and Catalogues had.

Thursday Next

SPECIAL TRADE SALE of DUTCH BULBS, 5000 LILIUM AURATUM from Japan, 20,000 White Roman HYACINTHS, 10,000 TUBEROSES, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 30, at half-past 12 o'Clock precisely, 5000 BULBS of LILIUM AURATUM just received direct from Japan in fine condition, 20,000 White Roman HYACINTHS from France for forcing, 10,000 TUBEROSES and AMARYLLIS from S. Africa, Home-grown LILIUMS in variety, 50,000 Berlin LILY or the VALLEY Crowns received direct. Also several hundred lots of first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS from Holland, specially lotted to suit the Trade and private buyers.

On view morning of Sale, and Catalogues had.

Potter's Bar.

Clearance Sale. First portion, by direction of Mr. E. Bennett, F.R.H.S., who is leaving the neighbourhood.

MESSRS. HARLAND AND SON will hold an extensive SALE of thriving NURSERY STOCK, on TUESDAY, October 28, 1890, at 1 o'Clock precisely, on the Premises, Little Heath Nurseries, Potter's Bar, within ten minutes' walk of the Station, G. N. R.

Catalogues of the Auctioneers, Barnet, N.

175 Cases of Lilium auratum.

MESSRS. POPE AND SONS will include the above in their SALE on THURSDAY NEXT, October 30, lotted to suit all buyers, for Sale without reserve.

Auction Rooms, 6, Phillips Street, Birmingham.

Every Thursday.—Dutch Bulbs.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY NEXT, and every THURSDAY throughout the season, at half-past 11 o'Clock A.M., large consignments of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland; also Roman HYACINTHS and Paper White NARCISSUS. Lotted to suit all buyers.

On view morning of Sale, and Catalogues had.

On WEDNESDAY and FRIDAY EVENINGS, at half-past 5 o'Clock, SALES of Choice CUT FLOWERS. Entries invited.

Nursery Stock Sales conducted and Valuations made.

Auction Rooms and Offices, 6, Phillips Street, Birmingham.

King Alfred Nurseries, Grove, near Wantage.

To Florists, Nurserymen, and others.

MESSRS. BELCHER AND ADKIN (late J. and E. Belcher) have received instructions from the Executrix of William Caudwell, Esq., deceased, late F.R.H.S., to SELL by AUCTION, on THURSDAY and FRIDAY, October 30 and 31, 1890, at 11 for 12 o'Clock each day, at the Nurseries, the whole of the valuable NURSERY STOCK, including 2000 Bush Rose Trees, 300 Apple Trees, 200 Ivies in pots, a quantity of valuable Plants, Bulbs, Seeds, and other Effects. The Auctioneers beg to call special attention to this Sale, which offers an opportunity of rare occurrence. The whole of the lots are the genuine property of the late Mr. William Caudwell, the well-known Rose and Seed Grower, and will be sold without the slightest reserve.

Catalogues may be had of Messrs. BELCHER AND ADKIN, Auctioneers and Valuers, Market Place, Wantage.

Addlestone Moor and Brox, Chertsey, Surrey.

UNRESERVED CLEARANCE SALE of NURSERY STOCK, in consequence of the Land being Sold.

MESSRS. WATERER AND SONS are instructed by Mr. Thomas Tillier, to SELL by AUCTION, upon the Premises, Addlestone Moor, on MONDAY, November 3, and following days, at 11 for 12 o'Clock, the excellent NURSERY STOCK, comprising 15,000 Standard, Pyramid, Trained, and Maiden Fruit Trees, in Apples, Pears, Plums, Cherries, Peaches, and Nectarines, all of the best sorts; 50 Large Fruit Trees, 15,000 Fruit Stocks, 5000 Gooseberry and Currants, 100,000 strong Quicks, 1500 Double Blossom Thorns, several thousand Lime, Birch, Beech, Mountain Ash, Spanish Chestnut, from 3 to 10 feet; 3000 Spruce, from 1 to 3 feet; 200 Pinus austriaca, 2000 Cupressus Lawsoniana, 3 to 5 feet; 500 American Arbor vitæ, from 4 to 6 feet; 200 Aucubas, from 1 to 3 feet; 200 Laurustinus, Rhododendron ponticum, bushy Plants; 1000 Bordered Shrubs for Ornamental Planting, 1000 Double Blossom Gorse, Jassamine, and Clematis, of sorts, in pots; 1000 Standard and Half-standard Roses, 1000 Dwarf, ditto, all of the best varieties; and other Stock.

May be viewed, and Catalogues had, seven days prior to the Sale, of Mr. TILLIER, Brox; and of Messrs. WATERER AND SONS, Auctioneers and Surveyors, Chertsey, Weybridge Station, and opposite the Station Entrance, Walton-on-Thames.

Manchester.

IMPORTANT SALE of a VALUABLE COLLECTION of about 1100 first-class ESTABLISHED ORCHIDACEOUS PLANTS, comprising over 700 exceedingly fine Cattleyas and Lælias, embracing many fine specimens of the rarest varieties; over 150 Dendrobiums, grand specimens of the choicest sorts, particularly Brymerianum and Wardianum, the former illustrated in the *Orchid Album*, and are the finest lot ever submitted to public competition; 250 Oncidiums, Cypripediums, Cœlogynes, Pleiones, and other assorted ORCHIDS; the whole are remarkably well-grown, in exceptionally fine and strong condition, and notably free from insect or deleterious matter.

MESSRS. ARTINGSTALL AND HIND respectfully notify the receipt of peremptory instructions from Mr. Wrigley to SELL by AUCTION, on WEDNESDAY, November 5, commencing at 11 o'Clock prompt, in a large Marquee, which will be erected in the grounds of Victoria House, Dukinfield, Cheshire, the entire contents of his DENDROBIUM, ONCIDIUM, and CATTLEYA HOUSES.

The whole may be publicly viewed on November 3 and 4, from 10 to 4 o'Clock each day, and on the morning of Sale, when detailed Catalogues may then be had, or earlier, together with further particulars, on application personally or by post, from the HEAD GARDENER, at the above residence, or from the Auctioneers, No. 45, Princess Street, Manchester.

FOR IMMEDIATE DISPOSAL, a FLORIST and SEED BUSINESS. Sole reason, ill health. Six-roomed House, six Greenhouses, in good condition; well heated Pits and Frames. Stock in Trade, and all Fixtures. Shop well fitted. Lease sixteen years. To be Sold at a great Sacrifice. Genuine, and a good opening for a Fruit Business.

Apply to R. HOLLOWAY, Florist, 87, Dulwich Road, Herne Hill, S.E.

FOR SALE, a SEED, FLORIST, and NURSERY BUSINESS in Yorkshire. The Nursery contains 3 Plant Houses, and 2 deep Pits heated with hot water, and a number of cold Pits, together with 5 Acres of good Nursery Land well stocked.

There is a good trade done in each department, and it will prove a splendid business for a retiring Gardener.

The disposers can give most satisfactory reasons why disposing, and to a likely man, will offer most liberal terms.

Address, M. A., 41, Wellington Street, Strand, London, W.C.

FOR SALE, with immediate possession, a SMALL NURSERY, 4 Greenhouses, Flower and Seed Shop, all fitted with Hot-water Pipes; half an acre of Land, Pits, and Frames. Good Stock. Held by owner 16 years. First-class position. No reasonable offer refused. On account of age.

Address, entrance to Queen's Road Station, Peckham.

FOR DISPOSAL, a Small FLORIST and JOBBING BUSINESS, with Sweet Shop attached, opposite a Board School.

Apply B., C. Fuller, Newsagent, High Street, North Finchley.

LAND for HORTICULTURISTS. TO BE LET, on specially favourable long leases.

TO BE SOLD, on liberal system of deferred payments.

TO BE SOLD forthwith, 3-4ths price remaining at 4 per cent.

Excellent for soil, water, and railway.

Apply to Mr. F. J. CULLIS, F.G.S., Marling Park Estate, Hampton-on-Thames.

To Gardeners and others.

TO LET, a seven-roomed HOUSE, with about half an Acre of Ground, well cultivated and stocked with Fruit Trees, good Greenhouse, Outhouses, &c.

Apply, Alexandra Cottage, New Park Road, Brixton Hill, S.W.

THOS. BUTCHER for High-class SEEDS, BULBS, and NURSERY STOCK. CATALOGUES gratis.

The Nurseries, South Norwood and Croydon.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

NEW DESCRIPTIVE PRICED CATALOGUE

Post-free on application to

THE VINEYARD AND NURSERIES,

GARSTON, near LIVERPOOL.

BULBS—BULBS—BULBS.—Our stock of Dutch Bulbs is quite ready for inspection. Customers at liberty to come and select for themselves at the—

NEW HAARLEM BULB WAREHOUSES,

34, Mansell Street, Aldgate, City, London.

Proprietors—MICHAEL RAINS AND CO.

Reg. Tel. Address—"Bioticus, London." Established 1856.

CATALOGUE on application.

Named HYACINTHS, 2*s.* 6*d.* per doz. 1st size Bulbs of any sort.

PRICED LIST ON APPLICATION.

SUTTON'S BULBS

GENUINE ONLY DIRECT FROM READING.

All Bulbs value 5s. and upwards Carriage Free.

CHEAP AND BEAUTIFUL FERNS

in 2-inch and 2½-inch pots for table decoration; or, planting out on Indoor Rockeries, potting into 5-inch pots, &c.:—

ADIANTUM WEGANDI, A. FRAGRANTISSIMA, A. PUBESCENS, A. FERGUSONII (new), POLYPODIUM AUREUM, ONYCHIUM JAPONICUM (beautiful for Greenhouse), LOMARIA GIBBA, all at 4*s.* per dozen, 25*s.* per 100.

6 GREENHOUSE FERNS, in 6 distinct varieties, 3*s.*, 4*s.* 6*d.*, and 6*s.*

12 GREENHOUSE FERNS, in 12 distinct varieties, 6*s.*, 9*s.*, and 12*s.*

6 STOVE FERNS, in 6 distinct varieties, 4*s.* 6*d.*, 6*s.*, and 9*s.*

12 STOVE FERNS, in 12 distinct varieties, 9*s.*, 12*s.*, and 18*s.*

CLIBRAN'S, Oldfield Nurseries, Altrincham; also Manchester.



PLANTING SEASON.

HARDILY-GROWN

FOREST, FRUIT,

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TREES & PLANTS,

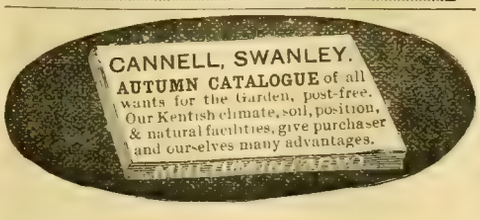
EVERGREENS, ROSES, &c.

NURSERIES 400 ACRES.

VERY EXTENSIVE STOCK. Inspection Invited.

Priced Catalogues Gratis & Post Free.

DICKSONS (LIMITED) **THE NURSERIES CHESTER.**



KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY. President, G. C. SHERRARD, Esq., J.P.

The FOURTEENTH GRAND SHOW of CHRYSANTHEMUMS, FRUIT, &c., will be held in the Drill Hall, Kingston-on-Thames, on TUESDAY and WEDNESDAY, November 11 and 12, 1890, when, in addition to Valuable Money Prizes, the Sixth Champion Challenge Vase, value 25 guineas, will be offered. Entries close November 6. Schedules, and other information, may be obtained from

Mr. GEO. WOODGATE, Hon. Sec.

Warren House Gardens, Kingston Hill, Surrey.

THE BATH CHRYSANTHEMUM SHOW, NOVEMBER 12 and 13, 1890.

Entries close November 7. For Prize Schedules, apply,

B. R. F. PEARSON, } Secs.
2, Northumberland Bdgs., Bath. W. JEFFERY, }

TWICKENHAM HORTICULTURAL and COTTAGE GARDEN SOCIETY.

The ANNUAL AUTUMN SHOW of CHRYSANTHEMUMS, FRUIT, and FLOWERS, will be held at the Town Hall, Twickenham, on TUESDAY and WEDNESDAY, November 18 and 19. Entries close on Friday, November 14. Particulars and Schedules may be had of

J. J. G. PUGH, Hon. Sec., 2, Heath Road, Twickenham.

ROYAL BOTANICAL and HORTICULTURAL SOCIETY OF MANCHESTER CHRYSANTHEMUM SHOW in the Town Hall, Manchester, on NOVEMBER 18 and 19. For Schedules, apply to the undersigned.

BRUCE FINDLAY, Old Trafford, Manchester.

SCOTTISH HORTICULTURAL ASSOCIATION.

CHRYSANTHEMUM EXHIBITION and WINTER FRUIT and FLOWER SHOW, Waverley Market, Edinburgh, NOVEMBER 20, 21, and 22, 1890. Prizes to nearly FOUR HUNDRED POUNDS in Money and Plate, including City of Edinburgh Prize value £20. Schedules, and all particulars, on application to R. B. FERGUSON, Secretary.

6, South St. Andrew Street, Edinburgh.

Competition.—Stockton-on-Tees.

THE CORPORATION of the BOROUGH of STOCKTON-ON-TEES, invite DESIGNS for the LAYING-OUT of a PUBLIC PARK, and are willing to pay £50, £25, and £10 respectively, for the Designs which are in the opinion of the Park Committee, first, second, and third, in order of merit.

Particulars, conditions, and plans of site, may be obtained on application to the Borough Engineer, Stockton-on-Tees.

Designs, &c., to be sent to "The Chairman of the Park Committee, Town Hall, Stockton-on-Tees," on or before the 25th of November, 1890. By order of the Committee,

October 13, 1890 MAT. B. DODDS, Town Clerk.

Vestry of St. Mary, Islington, N.

THE WORKS COMMITTEE of this VESTRY are prepared to RECEIVE TENDERS for the SUPPLY and PLANTING of about 269 English PLANE TREES, in certain Roads in the Parish, and for carrying out all the necessary work in connection therewith. Specification and Form of Tender may be obtained by application to the Chief Surveyor, at the Vestry Hall. Tenders, endorsed "Tender for Trees," must be received not later than 4 P.M. on MONDAY, the 3rd November. Each person, whose Tender is accepted, must be prepared to deposit a £10 Bank of England Note, to be returned on the execution of the Contract. Parties tendering are expected to be in attendance at the Vestry Hall at 8 P.M. on the above day. The Committee do not bind themselves to accept the lowest or any Tender, and they reserve to themselves the option of accepting portions only of the Tender.

WM. F. DEWEY, Vestry Clerk.

Vestry Hall, Upper Street, Islington, N.,
22nd October, 1890.

Landscape Gardening.

MR. ARTHUR M. KETTLEWELL, LANDSCAPE GARDENER, having great experience in all matters pertaining to the artistic arrangement or re-arrangement of Grounds, IS READY TO UNDERTAKE the Designing and Laying-out of Private or Public Gardens, Parks, Cemeteries, &c. Send for his Manual on the "Art of Landscape Gardening," excellently reviewed by nearly all the leading Gardening Papers, post-free, 7*d.*

Address, Titley House, Titley (R.S.O.), Herefordshire.

A Gentleman changing residence, wishes to

SELL THE FOLLOWING Named Plants:—

3 PANDANUS VEITCHII, in 11-inch pots.
7 GARDENIAS, in 11-inch pots.
5 GARDENIAS, in 8-inch pots.
11 EUCHARIS AMAZONICA, in 10 and 12-inch pots.
27 ORCHIDS of sorts.
2 CROTONS, in 7-inch pots.
1 BOUGAINVILLEA, in 11-inch pot.
1 CLERODENDRON BALFOURII, in 11-inch pot.

Can be seen any day this month.

Address, South Lodge, Champion Hill, S.E.

Rhododendrons cheaper than ever.

Over 30 Acres for Sale.

ISAAC MATTHEWS AND SON have to offer over 100,000 White, 100,000 Scarlet, in variety. Plants fit for immediate forcing. The above are all freely set with bloom buds, and are in the most healthy condition. We also have a very extensive stock of HYBRID and PONTACOMS from Seed, and can be had in all sizes, varying from 6 inches up to 4 feet, in any quantity. HOLLIES, AUCUBAS, YEWS, CONIFERS, THORN QUICK, Scotch SPRUCE, LARCH, ELM, ASH, ALDER, BIRCH, and all other General Nursery Stock in abundance. For Price LIST, &c., apply to—

ISAAC MATTHEWS AND SON, The Nurseries, Milton, Stoke-on-Trent. Our Nursery is very extensive and the Stock good.

OLD CRIMSON CLOVE CARNATION and OLD WHITE CLOVE (from layers), strong robust plants, 13*s.* 6*d.* per 100; 2*s.* per dozen; sample 3*d.* Herbaceous and Alpine CATALOGUE gratis.

H. DOBBIE, Floral Nurseries, Frettenham, Norwich.

GARDEN.

For whatever is wanted, mentioned or not in these columns, please to write immediately to H. CANNELL AND SONS, whose Seed and Nursery Stock is very complete and extensive, and where nearly everything for the Garden is grown and supplied in large quantities, in the finest possible condition, at the lowest prices, consistent with correctness and superior character. Send for CATALOGUES.

SWANLEY, KENT.

FRUIT TREES. Immense Stock of grand, hardily-grown trees, growing upon 75 acres, and believed to be unequalled. Descriptive Catalogue and Special Prices on application:—

DICKSONS NURSERIES, CHESTER.

FRUIT TREES—FRUIT TREES.

HUGH LOW & CO.

Offer, of good quality, and will esteem favour of Orders:—

APPLES.—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed, Pyramids, Standards.

APRICOTS.—Dwarf Maiden, Dwarf Trained, Standard, and Standard Trained.

CHERRIES.—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed Pyramids, Standards.

PEARS.—Dwarf Maidens, Dwarf Trained, Pyramids, Standards.

PLUMS.—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed, Pyramids, Standards.

DAMSONS FARLEIGH PROLIFIC.—Dwarf Maidens, Pyramids, Standards.

PEACHES and NECTARINES.—Dwarf Maidens, Dwarf Trained, Standards, Standard Trained.

Quantity Large.—Quality Good.—Prices Moderate.

INSPECTION INVITED.

Bush Hill Park Nursery, Enfield.

FRUIT TREES A SPECIALTY

STRAWBERRIES.—One of the best collections in the Trade, including Noble, and all the best and newest varieties. Descriptive List on application.

FRUIT TREES.—Apples, Pears, Plums, Bush Fruits, and all kinds of hardy fruit trees. New and rare sorts not obtainable elsewhere. Special quotations for market varieties in quantity. Catalogues free. Descriptive List, one of the most complete in the Trade giving much valuable information, 6*d*.

CABBAGE PLANTS.—Leading garden or field varieties, very cheap, in quantities.

JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford.

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JERSEY FRUIT TREES & ROSE TREES.

CARRIAGE PAID. PACKED GRATIS. An immense stock of strong, healthy, well-rooted trees. No starvelings. Before ordering, be sure to write for our Illustrated CATALOGUE.

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ROSES WONDERFULLY CHEAP. *The finest that money can buy.*

HIGH VIEW NURSERIES, JERSEY.

HARTLAND'S DAFFODILS. SECURE a Copy of HARTLAND'S "FLORAL ALBUM" of Conference DAFFODILS, and put away for a future generation. Price 2*s*. 6*d*., *Post-free.*

No better illustrated work of its kind published throughout the entire Trade. It is not only a Guide, but a regular work of art. If you are not pleased, the money will be returned.

WM. BAYLOR HARTLAND, F.R.H.S., Seedsman, 24, Patrick Street, Cork.

CONSERVATORY DECORATION

IN WINTER.

BEGONIAS, lovely winter-flowering sorts, 1*s*. each.
SOLANUMS, well berried, 9*s*. and 12*s*. per doz.
CYCLAMEN, extra fine flowers, and BOUVARDIAS, freest flowering sorts, at 6*s*., 9*s*., and 12*s*. per doz.; small, 3*s*. per doz.
CALLA (Lily of the Nile), strong, 1*s*. each.
SMILAX, lovely tresses of green foliage, 9*d*. and 1*s*. each.
RONDELETIA SPECIOSA MAJOR, beautiful, 1*s*. 6*d*. each.
PRIMULA OBCONICA, continual bloomer, 6*d*. and 9*d*. each.
INDIAN AZALEAS, in great variety, 1*s*. 6*d*. and 2*s*. 6*d*. each; Deutsche Perle, the finest white Azalea, for cutting, &c., can be had in bloom for Christmas, 2*s*. 6*d*. and 3*s*. 6*d*. each.
PALMS, 6, in six beautiful varieties, 9*s*., 12*s*., and 15*s*.; ditto, smaller, 4*s*. and 6*s*. per doz.
LATANIAS, extra fine, 5*s*. and 7*s*. 6*d*. each.
DRACÆNAS, in variety, in 3½-inch pots, 6*s*. per doz.; larger, 1*s*. 6*d*. and 2*s*. 6*d*. each.
PRIMULAS, CINERARIAS, and CALCEOLARIAS, from stores, 1*s*. 6*d*. per doz.; in small pots, 2*s*. 6*d*. per doz.; larger, 4*s*. and 6*s*. per doz.
Six distinct and beautiful Conservatory Plants, 6*s*.
Twelve " " " 10*s*. 6*d*.

GAS-RESISTING PLANTS.—Aspidistra lurida, 2*s*. and 2*s*. 6*d*.; ditto variegata, 2*s*. 6*d*. and 3*s*. 6*d*. Ficus elastica, 1*s*. 6*d*., 2*s*. 6*d*., and 3*s*. 6*d*. Grevillea robusta, 9*d*. and 1*s*. each.

CLIBRAN'S Oldfield Nurseries, Altrincham; also Manchester.

To Nurserymen, Builders, Local Boards, Vestries, and others who intend planting Trees and Shrubs this season.

ROBERT NEAL, The Nurseries, Trinity Road, Wandsworth, S.W., begs to offer an extensive stock of FOREST and ORNAMENTAL TREES, SHRUBS, ROSES, GRAPE VINES, FRUIT TREES, CLIMBING PLANTS, &c., which being grown in the neighbourhood of London, are especially suitable for town planting. Also a large stock of extra fine SEAKALE and RHUBARB for forcing, sample and price of Seakale sent by post if desired; descriptive CATALOGUE free.

LOVEL'S YORKSHIRE STRAWBERRIES. Good plants of Thury, Paxton, President, Noble, and others, 100, 3*s*. 6*d*.; 500, 15*s*.; 1000, 25*s*.; all carriage paid. Sample dozen, 6*d*. Descriptive LIST free.

W. LOVEL AND SON, Strawberry Growers, Driffield.

ORCHIDS a SPECIALTY.—A rare chance to those forming collections. Having bought a private collection of 3000 plants, beg to offer at about half their value. Write for List. 500 Odontoglossum Alexandræ in thumbs, 12*s*. per doz.; 650 ditto, in large 60's, strong growths, 30*s*. per doz.; 250 Masdevallias, 30*s*. per dozen, including M. Harryanum, M. Wagneri, M. amabilis, M. triangularis, and M. Lindeni; Lycaste Skinneri, fine plants, 2*s*. 6*d*., 3*s* 6*d*., and 5*s*. Six distinct Cattleyas for 21*s*., including C. Mossiæ, C. Trianæ, C. gigas, and C. Gaskelliana. Our specialty—an amateur's collection of Orchids, 12 distinct plants, 20*s*., 30*s*., 40*s*., and 50*s*. Specimen, carriage paid, 2*s*., 3*s*., 4*s*., and 5*s*. Cash with order.

W. L. LEWIS, Chase-side, Southgate, London, N.

QUICK, for Hedges, strong transplanted, 15*s*., 20*s*., 25*s*., and 30*s*. per 1000.

ELMS, English, fine trees for avenues, or singly in parks, 2*s*. 6*d*. each.

EVERGREEN HEDGES.—The best are formed of American Arbor-vitæ, 3 to 4 feet, 12*s*. per dozen; Thuia Lobbii, 12*s*. per dozen; English Yew, 2 to 2½ feet, 9*s*. per dozen.

SEASIDE EVERGREENS.—Austrian Pine, 3 to 3½ feet, 9*s*. per dozen; Arbutus, nice plants, 2½ feet, 12*s*. per doz.; Bays, 12*s*. and 18*s*. per dozen; Euonymus, best green, 4*s*. and 6*s*. per dozen; Evergreen Oaks, in pots, 3 feet, 18*s*. per doz.; Escallonia macrantha, in pots, 9*s*. per doz.

GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-yr. old flowering Crowns for forcing, and 2 and 1-yr. old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.

T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

STANDARD APPLES, fine trees for Orchard planting. Cash with order. £8 per 100, including:—

Blenheim Orange	Grenadier	Mr. Gladstone
Cellini	Hawthornden	Red Quarrenden
Cox's Orange	Irish Peach	Ribston Pippin
Duke of Wellington	Keswick Codlin	Sturmer
Fearn's Pippin	Lord Suffield	Warner's King.

STANDARD VICTORIA PLUMS, the most certain cropper, and best for cooking and preserving, £7 per 100.

GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

A LIST of SPECIALTIES on SALE, which includes VIOLETS, in large clumps, by the dozen or hundred; Border CARNATIONS, which include Mrs. Reynolds Hole, Gloire de Nancy, Dr. Waggott, and others, by the dozen or hundred. ROSE TREES, Standard and half-Standard; Teas and Perpetuals. An excellent stock of DIELYTRA SPECTABILIS, strong forcing roots, by dozen or hundred.

Veitch's Telegraph CUCUMBER, warranted true, by packet or ounce.

Also Gilbert's Royal family of the BRASSICA TRIBE, including new seed of Chou de Burghley. Universal SAVOY, Late White Victoria BROCCOLI; and lastly, but not least, Gilbert's King of the BRUSSELS SPROUTS. Send for particulars to—

R. GILBERT, High Park Gardens, Stamford.

W. DALE, having let his Nursery, offers the following well-grown clean healthy stock, which cannot fail to give satisfaction:—

1600 SPRUCE FIR, 2 to 8 feet.
100 Green HOLLY, very fine and bushy, 2 to 4 feet, 15*s*. doz.
9000 Common ASH, 3 to 4 feet, 30*s*. per 100.
1400 Scotch FIR, 2 to 4 feet. [30*s*. per 100.
1000 RHODODENDRONS, PONTICUM, very bushy, 2 feet, 1000 Common LAURELS, 2 to 3 feet, 25*s*. per 100.
2000 Irish IVY, 3 feet, twice transplanted, 15*s*. per 100.
600 Austrian PINES, 1 to 2ft. 500 POPLARS of sorts, 6 to 10ft.
300 FILBERT COBS, fine stuff, 3 to 4 feet, 6*s*. per dozen.
50 English YEWS, 3 to 4 feet, well grown, 15*s*. per dozen.
200 Portugal LAURELS, 2 feet, 30*s*. per 100.
100 WEIGELA ROSEA, and other stock.
20,000 RASPBERRY CANES, Carter's Prolific, 25*s*. per 1000.

On application. All in good condition for removal.

W. DALE, Knockholt, Kent.

SPECIAL CULTURE OF

FRUIT TREES AND ROSES.

A LARGE AND SELECT STOCK IS NOW OFFERED FOR SALE.

The Illustrated and Descriptive Catalogue of Fruits post-free.

The Descriptive Catalogue of Roses post-free.

THOMAS RIVERS & SON,
THE NURSERIES.
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Gardeners' Chronicle, October 18, 1890, p. 417.
The Garden, October 18, 1890, p. 381.
Journal of Horticulture, October 16, 1890, p. 340.
The Gardeners' Magazine, October 18, 1890, p. 645.
The Gardening World, October 18, 1890, p. 109.

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TO THE
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FOR
Next Week, November 1,
WILL BE
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OF
LÆLIA ANCEPS, var. STELLA,
GROWN IN
PARKFIELD GARDENS.



THE
Gardeners' Chronicle.

SATURDAY, OCTOBER 25, 1890.

KNOWSLEY HALL.

THIS fine demesne has grown gradually greater, like its owners. The original mansion was enlarged by the first Earl of Derby, the Lord Stanley of Bosworth field, who received the victorious Richmond here, and who had married, for his second wife, Margaret, widow of Edmund Tudor, and mother of the said Richmond, or, to give him his regal title, Henry VII. The alterations have reduced the ancient building to a small section of its original dimensions, and the remainder has been rebuilt in the embattled style with dark freestone. James, tenth Earl, erected the greater part of the existing mansion, which, however, the present Earl, objecting to the embattled style, is now modifying in his turn. The western front consists of an extensive range of red brick, surmounted with a balustrade, with the entrance in the centre. The chapel occupies the east front. On the south is a corridor of the Ionic order, over which are the armorial bearings of the tenth Earl, with this inscription:—"James, Earl of Derby, Lord of Man and the Isles, grandson of James Earl of Derby and of Charlotte, daughter of Claude Duke de la Tremouille, whose husband James was beheaded at Bolton, 15 October, 1652, for strenuously adhering to Charles the Second, who refused a Bill passed unanimously by both Houses of Parliament for restoring to his family the estates lost by his loyalty to him, 1732."

The house is large, and rather dreary-looking, and it seemed to me, after a rather superficial view, and without exploring the vast interior, with its treasures of art and literature, that the best part of Knowsley consists in its extensive parks, and well-kept grounds and gardens. Probably it owes its want of external cheerfulness to its low pitch, the vast extent of a two-storeyed building being fatal to beauty, and unfavourable to the expression of dignity. The outside of

the house hardly corresponds to the prestige of the illustrious family who have dwelt here for more than 200 years, as they had done previously at Lathom House for a still longer period. Within the house there are portraits of distinguished Stanleys who have served their country in different centuries, and whose deeds might remind one that the history of a nation may be read in the biography of its leading men. The Stanleys have been leaders, and their lives have been interwoven with the thread of our country's history for many centuries. One of the most interesting of the portraits to those who have read Scott's *Peveril of the Peak*, is that of the heroic Lady Derby, Charlotte de la Tremouille, who, in that delightful novel, is made so stately a *grande dame*, and so romantic a character. Another interesting memorial consists of a relic of "the Rupert of Debate," the manuscript volumes of note-paper on which, with hardly a correction, he wrote his excellent translation of Homer.

In laying out the grounds of this noble residence, Mr. "Capability" Brown acquitted himself with more than his usual facility. The lake which he formed would not be suspected for an artificial work. The water is pellucid, the shores winding and wooded, and the shape elongated, with a distant grassy background—and, as the poet says, "'tis distance lends enchantment to the view." Nothing could be handsomer and more ornamental than the châlet on its banks, forming at once a boat-house and a lodge. The great park of 2,500 acres is enclosed by a wall 14 miles long; but unfortunately the smoke-producing industries of Lancashire have not proved favourable to the vegetation of this great enclosure, and many of its trees have been much injured. Some of the old Oaks have lost their tops, some have been suffocated, and quite destroyed. "Everything bad comes from the east," is a saying here, due to the fumes from the chemical works at St. Helen's. Placing my hand upon a fence, it was at once blackened by a similar film of soot that covers the trees and fences. But the chemical fumes are more injurious than the smoke. The two trees now generally planted are the Sycamore and the Lime, which seem better able to battle with the atmospheric grievance than any others.

The surroundings of the house are very pleasing. All visitors will look with interest on Lord Derby's half-mile, which was measured at his desire, from the house along a carriage-drive to a point near a very handsome building, which looks too large for a lodge and too small for a rectory. It is, in fact, a combined lodge and boat-house. The building stands upon the margin of a lake of 90 acres, and on passing round the lodge you find behind it a boat-house under the same roof, and over the boat-house a tea-room, with wainscot walls and beautifully carved oak furniture. There is a charming outlook from this room over the lake, and also to distant parts of the park. The tower in the distance stands in the private racecourse formed in the park by the Earl of Derby, who founded the two famous races known as the Derby and the Oaks for males and mares respectively, naming the latter after his house in Surrey—Oak Lodge. Following Lord Derby's half-mile, the lake lies on the left, and on the margin of the road are specimen trees and shrubs with flowers and grass, and in front of the house is a large lawn which passes round to the south front. I think these two fronts, with their wide lawn, sloping and unlevel, with clumps of shrubs here and there, would please most persons better than the others. The clumps upon the lawn are planted with various shrubs, such as Broom, a common but a handsome shrub when blossoming in July, and the Japanese Rose, R. Rugosa, bearing large berries which, when ripe, are exceedingly ornamental. White Foxgloves are conspicuous in some of the beds, especially in a large one planted with White Lilac, Andromeda floribunda, Gaultheria Shallou, Heaths, and Berberis strenophylla, a shrub bearing flowers in May, yellow as gold. Great beds of Rhododendron ornament the same lawn. Among the Foxgloves was the white variety with the elongated lobe.

In spite of his numerous houses filled with exotics, Mr. Harrison, with a staff of thirty-two gardeners at command, pays great attention to the kitchen garden. A wall divides this garden into two compartments, and this arrangement affords ample space for a large quantity of wall fruit, Morello Cherries, Pears, Peaches, Apricots, Plums, Apples, Gooseberries, and Currants. Among the Pears Beurré Rance and Marie Louise, do well here, and Pitmaston Duchess and Beurré Superfin tolerably well. Among Peaches grown out-of-doors, Bellegarde, Walburton Admirable, and Sea Eagle are good. There are nine vineries, all under very successful management; two Peach-houses, and an orchard-house containing mixed fruits. Two houses of Muscats are particularly well loaded. Figs, of many kinds, such as Brown Turkey, White Marseilles, and Negro Largo among old and well-known sorts, and St. John's among less well known sorts, are grown in large quantities. Among Apples in the open garden are Winter Hawthornden, Cox's Orange Pippin, Pott's Seedling, and Sturmer Pippin. The crop is good this year, Pears not so good, and the Plum crop a very poor one. "The Superlative Raspberry is much liked here, and ought to be grown everywhere," says Mr. Harrison.

In growing Strawberries for forcing, the first step is to obtain the plants for potting, and with this object the rows are planted in the garden in the first week in August, 1 yard apart, and 15 inches from plant to plant. The wide space between the rows is found desirable to afford room for the pots next year, when the runners will be pegged down in them to obtain plants for forcing. The beds planted this year will yield a full crop of fruit the year after next. On July 30, the Lettuces, in perfect condition, were Paris White and All the Year Round; Brown Genoa and Sugar-loaf Cos were coming in. I have never seen better Brussels Sprouts. In saving the seed, the head of the plant is cut of, and the seed is taken from the Sprouts, a plan which it is said induces a desirable habit of growth, namely, a short stem, on which the crop grows close down to the ground. The Sprouts are small and solid, and do not run to waste; the leaves grow close together, and are not liable to be knocked about by the wind—careful breeding, which has worked wonders in horticulture, has here been applied with great advantage to the improvement of the form and flavour of a common vegetable. A very different plant, the Amaryllis, has also been successfully and largely grown here, and some excellent varieties have been obtained by crossing. The profit and delight of a garden are mainly dependent on its improvement, and I could quite understand Mr. Harrison's evident pleasure in showing us an old orchard which he has renovated, restored, and partly replanted. This pet orchard of his was formerly wet at the surface, sour, and unprofitable. After laying it up in wide ridges to throw off the water and give it depth of soil, it has been replanted, and is now beginning to bear nicely. Renovating composts and mixtures of soil are brought to the spot as occasion offers.

Among the houses, we passed through a Pine house, a matter to be mentioned in these days of imported fruits, when the growth of Pines at many great establishments has been abandoned. In a Eucharis stove, with Allamandas overhead, a number of very beautiful Caladiums and other specimen plants in pots had been collected for exhibition next day. It seems that a Cottager's show was to be held in the neighbourhood on the following day, and these exquisite examples of skill in the higher department of the gardening art, were intended for the ornament of the show and the pleasure of the people. I was reminded of one of Addison's essays, in which he describes the pleasures we may all derive from the possessions of the wealthy. Such pleasures have increased a thousand fold in recent times. Two minutes' from my door, I can enter Dulwich Park, a charming place which costs me nothing, and thence I can take several roads leading to the Crystal Palace, and in these wide thoroughfares stand the houses of scores of wealthy merchants and traders, all in gardens and shrubberies, non-existent fifty years ago, and now rivalling one another for their beauty and display of shrubs, flowers, wall creepers, and window boxes variously decked. The owners must enjoy these gardens immensely, and so may all the world besides, as I do for one. I am afraid we did not release Mr. Harrison till late in the afternoon, and then, after a cup of tea, obeying no eight-hour law, he would devote himself till supper time to labours for the public, and the decorations of the Cottager's show. The old saying that "property has its duties as well as its rights," is not ignored at Knowsley. *H. E.*

ACCLIMATISATION IN INDIA.

(*Continued from p.* 412.)

Brussels Sprouts do well from imported seeds, but the plant dies in the beginning of the hot weather without attempting to flower; and in order to possess it, we must grow it from imported seed. The Cabbage and all its varieties can only be had of good quality from imported stock. A weedy plant will sometimes flower and ripen seed, but in the following season this seed only produces plants made up of loose leaves, without any semblance of a head. I have sown acclimatised Cabbage for several seasons in succession, in the expectation of finding a plant return to the original type, but one never presented itself, and the task of acclimatising Cabbage was, therefore, given up as hopeless. Kohl rabi can be made to seed, but the produce of acclimatised stock is stringy, and soon becomes woody, and is, therefore, quite unfit for the table.

Kale does well from imported seeds, so far as outward appearances go, but the leaves when cooked are greatly wanting in softness and flavour. The Carrot arrives at great perfection when grown from imported stock, and it also acclimatises, but in a somewhat degenerated condition. If imported seeds are sown as early in the season as it is possible for them to germinate and thrive, and if the roots, when full grown, are transplanted after having been cut in half—I, of course, mean cut across, and the upper portion with top attached transplanted—these flower and seed, but very sparingly in the first season. If any seed secured is sown in the following season, the result will be a crop of roots nearly as good as those obtained from imported stock in the first instance, but somewhat lighter in colour than they were originally. Roots of this second crop, if transplanted when full grown, in the same manner as was done in the first season, produce seed freely. Seeds of this second crop sown in the third year, produce yellowish coloured roots, and in the fourth they become a pale yellow or white. If the variety began with be



Fig. 91.—Shoot of Pinus Montezumæ and separate leaf-tuft, natural size.

Scarlet Altrincham, for instance, its progeny, after four years of cultivation in India, practically becomes a White Belgian Carrot, or something which is hardly distinguishable from it. After the roots have faded to a pale yellow or white, the Carrot is then acclimatised, and always seeds freely afterwards. The natives cultivate a short-rooted Carrot, with a dark purple skin, and from what I can gather, has been grown by them from time immemorial. Its colour is fixed, and never shows any inclination to become white. It has probably originated from Daucus Carota, Linn., but I fancy it must have descended from a well-fixed wild variety of the type, or perhaps from a different species altogether; and whatever may be its origin, it is certainly a distinct variety, and not closely related to any of the European sorts, as none of the latter ever degenerate into anything approaching it in appearance. I am, however, digressing, and must return to my subject. Celery does well from imported seed, but as only the weeds of a crop form flowers the acclimatised strain is bad to begin with, and selection fails to bring it back to its original condition. It is, therefore, not a success as a table vegetable, except when raised from imported seeds. Mustard and Cress do well from both imported and acclimatised seeds. No difference is discernible between crops raised from either of the two classes of seed, but both plants being short-lived annuals, probably explains why they are so nearly equal. Endive from the two classes of seed is also of equal merit.

The Leek is sometimes met with, raised from imported seeds. An acclimatised strain is said to be grown in some districts, but I have never met with it, or yet succeeded in making a plant to flower, therefore, if acclimatised, which I very much doubt, it certainly does not acclimatise readily. The Onion is largely grown, and several good acclimatised strains exist, but, like the Leek, it does not acclimatise readily, and the strains we possess probably represent many years' work of selection. The Onion is usually sown in October, and the bulbs are harvested in April, and stored in summer much in the same manner as stored in Europe during the winter. In the following October the bulbs are planted out; they flower in March, and ripen seed in April. This vegetable, therefore, forms an exception amongst those from a temperate clime, by two seasons elapsing from date of sowing before seeds are harvested from it. It could, however, easily be bred into an annual, as when sown too early in autumn a large proportion of the plants flower in March, at the expense of the bulb, and as we require the latter for culinary purposes during the summer, we study to avoid sowing the seeds too early.

Parsley thrives well from imported seed, until it is killed by the heat in summer. The curled varieties never attempt to flower, but the plain-leaved kind flowers and seeds freely. The progeny from these acclimatised seeds, although similar in outward appearance to the imported parent, is utterly devoid of taste or flavour, and for this reason it is worthless. Parsnips are seldom or ever met with, owing to the seeds received from Europe generally failing to germinate. The imported seed of all vegetables sown in India in autumn invariably belong to the crop harvested in Europe in the previous season, and are therefore, nearly a year old before we sow them, Parsnip seed will not keep in our climate for so long a time, but if arrangements are made to get it sent out in the autumn of the same year as harvested in Europe, it never fails to come up, or to thrive, but it never attempts to flower.

The Pea thrives well, and like most of the other annuals, it acclimatises readily. The pod and contents, in the case of some varieties, become smaller, but as a rule this is not the case. All varieties are however, inclined to become taller. The tall kinds do not increase to any great extent in height, but all medium and dwarf peas lengthen out, and in the course of a few years they are of the same uniform height as the tall kinds. The Radish does well here, and acclimatises readily. Each variety if grown from carefully selected roots, remains true to name and colour, and we are therefore quite successful with it. Spinach does fairly well from acclimatised seeds, but the produce of imperfect stock is always superior in size of leaf, crispness, and flavour. The Tomato thrives well, and no difference is discernible between the produce of carefully selected acclimatised seed, and that raised from imported The Turnip has been successfully acclimatised; but as in the case of the Cauliflower, the acclimatised seeds must be sown early. When sown late, or at the time when it is most suitable to sow imported seeds, it shoots up into flower without forming a bulb, the same as Mustard. Another curious fact regarding our acclimatised Turnips is, that they all

belong to the white-skinned section. We readily acclimatise all the whites, or whites with purple and red tops, but the yellows refuse to adapt themselves. It must not be supposed that some of our whites originated from yellows, and have faded to white through climatic effects, as I have shown happens in the case of the Carrot. I have sown, grown, and transplanted yellow Turnips over and over again for seed, but never once succeeded in making a plant to flower. A few of the pot-herbs acclimatise, notably, Dill, Fennel, and Salsify, but the majority have to be raised annually from imported seed.

Having noticed most of the common vegetables, I shall now proceed to notice a few peculiarities observed in acclimatising Wheat from a temperate to a tropical climate, and also some peculiarities noticed in other plants when they were first introduced to India. *Wm. Gollan, Botanic Gardens, Saharanpur.*

(To be continued.)

PINUS MONTEZUMÆ.

This is a Mexican Pine, so extremely variable in size and even in shape of cone, as to have led to the formation of numerous reputed species, and to the consequent multiplication of specific names. It would be tedious in this place to deal with the very uninteresting (but sometimes necessary) question of synonymy. It must suffice to say that our illustrations are taken from a fine specimen growing in the Pinetum of J. Rashleigh, Esq., at Menabilly, near Par, in Cornwall.

What the particular variety may be, we cannot yet tell, as no perfect cones have hitherto been produced, but we have no doubt as to the species. The tree is about twenty years old, 17 feet high, 3 feet in girth near the ground, with a head of about 21 feet in diameter. It is at present of bushy habit (fig. 96), with the lower branches resting on the ground, and the tips curved upwards. The young shoots are cylindrical, clothed to the base, and the leaves in fascicles or tufts of five (fig. 91), and of a peculiar blueish-green colour. The bud is lengthened, conical, sharply-pointed, and covered with lanceolate fringed scales. The male catkins (fig. 94) are at the base of the young shoots, and never on the same branch as that which bears the cones. The young cones, as seen in August (fig. 92), were in clusters of from two to four, each about an inch in length, and of a rich, dark blue colour. They are mostly on the north-east side of the tree, and only on the lower branches. It will be interesting to watch them ripening. As the tree has produced such an abundant supply of pollen, it is hoped that ripe seed may eventually be obtained. About five years ago, Mr. Rashleigh received from the British Consul in Mexico a box of cones and seeds of a variety known as P. Lindleyana, and of which he has now a stock of young plants reared out-of-doors, each from 18 inches to 2 feet in height.

It is of very rare occurrence that the five-leaved Mexican Pines ripen their cones and produce perfect seed in England, indeed, we do not call to mind a single instance. The few fine trees of Pinus patula which occur in gardens in the West of England, and one of which was figured in our columns in 1885, January 24, p. 109, have it is believed, never produced perfect seed, though the pollen is yielded in abundance.

Pinus Montezumæ cannot be recommended for planting in any but the southern and western counties of England and Ireland, as our spring frosts are very injurious to it. It was introduced to this country in 1839, by the Royal Horticultural Society through, the agency of their collector Hartweg.

Presentation to Mr. George Ward.—A testimonial in the form of a handsome marble clock, was presented to Mr. Ward, on Saturday last, as a mark of esteem and respect by the *employés* of Kensington Gardens, where he has acted in the capacity of foreman during the past five years. Mr. Ward leaves Kensington to take charge of the Public Park at Brighton, Sussex.

New or Noteworthy Plants.

BEGONIA BAUMANNI, *n. sp.*

This apparently exceedingly handsome plant, of which seeds were first sent to Herr E. N. Baumann, of Bollwiller, in 1886, from Cochabamba, in Bolivia, by Dr. Sacc, is now being distributed for the first time to the public by Monsieur V. Lemoine, of Nancy, who has acquired the entire stock from Herr Baumann. In the *Revue Horticole* of Paris for



Fig. 92.—Young cones of Pinus Montezumæ, and detached scale-leaf, natural size.

August 1, 1886, Dr. Sacc thus describes this new Begonia:—"This fine plant, which is one of the largest-growing of the whole family, is met with in plenty in the moist valleys of the Northern Cordilleras, where it is much sought for by cattle. The dimensions of this Begonia are large, its tubers frequently reaching the size of a small Melon, and weighing 375 grammes, or 12½ oz. The flowers are



Fig. 93.—Plan of section of leaf of Pinus Montezumæ, magnified.

of a very bright shade of rose colour; the leaves are large, fleshy, and of a very deep shade of green. The flowers also exhale a most agreeable perfume, resembling that of the Primrose. The culture is the same as that adopted for Auriculas—good light soil, plenty of water, and partial shade, as the full sun causes the flowers to turn yellow and fall off. This Begonia is also well suited for room and window-sill culture, and produces flowers for nine out of the twelve months of the year, and only going to rest for the three winter months. The flower-stems are produced most freely, as many as twenty-five at a time from a single plant, each of which bears from three to six flowers; the male flowers, which are larger and handsomer than the females, being also twice as numerous. This plant should be a decided acquisition." *W. E. Gumbleton, Belgrove, Cork.*

Angræcum Henriquesianum, *Rolfe, n. sp.**

This is a neat and pretty little Angræcum, which was introduced from the island of St. Thomas, West Africa, and flowered in the Botanic Garden of the University of Coimbra, Portugal, during 1889. A living plant was sent to Kew, for determination, by Prof. J. A. Henriques, but it could not be identified with any species in the Herbarium. The plant was sent to the garden here, and, having become established, it has now produced another raceme. As I still fail to determine it, I venture to describe it as above, naming it in honour of Professor J. A. Henriques, Director of the Botanic Garden at Coimbra. It is closely allied to A. bilobum, Lindl., and A. apiculatum, Hook., which probably represents one and the same species, but is a much smaller plant in every respect. *R. A. Rolfe, Herbarium, Kew.*

GARDENING AT BREAMORE HOUSE, SALISBURY.

Breamore, one of the principal seats of Sir Edward Hulse, Bart., is a fine commodious red-brick mansion, in the Elizabethan style, picturesquely situated on an eminence in a well-wooded park on the borders of Wiltshire and Hampshire, about 8 miles south-east from Salisbury and 3 north of Fordingbridge. Sloping gradually in a downwards and southernly direction from the front of the mansion, is a broad expanse of park land extending for a considerable distance, until the ground ascends rather abruptly to some Pine woods, which form the distant background.

At a short distance from the mansion, and nestling among the spreading branches of ancient Cedars of Lebanon, is the pretty church, near to which stand two handsome specimen trees of Picea cephalonica and P. Pinsape; and in other parts of the pretty grounds, Cupressus Lawsoniana, Cryptomeria japonica, Junipers, &c., appeared to be growing vigorously in the red loamy soil. Araucaria imbricata—some in the open and others closely surrounded by taller trees—are furnished from the ground upwards with vigorous growth. The purple-flowered Magnolia Soulangeana flowers freely, and this year, the trees being full of buds, they are likely to keep on flowering until nipped by frost.

A Yew hedge encloses a quaint but pretty flower garden, and is furnished at regular intervals with niches in which curious stone figures form, as it were, a guard of honour to those entering the enclosure from the Lime-tree avenue. In this garden the beds of Master Christine and Henrie Jacoby Pelargoniums, Zinnias, Golden Queen Calceolaria, and tuberous-rooted Begonias, were in profuse flower, as were the plants in the ribbon-borders, which were edged with blue Lobelia. These beds and borders of gay flowers formed, with the surrounding flowering shrubs, a very pleasing picture. The Begonias made a fine display of themselves, and consisted of several good-habited and distinct varieties, the size, form, and colour of whose flowers were very good indeed. On a terrace at the west end of the mansion stood large Orange trees, loaded with golden fruit and some fragrant blossoms, making a charming addition to the place. These Orange trees are removed to one of the glass structures on the approach of frost.

* *Angræcum Henriquesianum*, n. sp.—Stem very short, with about five leaves. Leaves oblanceolate-oblong, obscurely and obliquely bilobed, coriaceous, 1½ to 3 inches long, ¾ to 1 inch broad. Raceme pendulous, about 5 inches long, about ten-flowered. Bracts broadly triangular-ovate, obtuse, dark brown, 2 lines long. Pedicels 7 to 8 lines long, light buff-brown in colour. Sepals and petals lanceolate, acute, ½ inch long, white, faintly tipped with light buff. Lip lanceolate-oblong, acute; margins and apex a little reflexed, a little broader than petals, but otherwise similar, both in shape and colour; spur slightly curved, gradually tapering to apex, 9 to 10 lines long, white. Column clavate, half as long as segments, white; wings very short, broad, and truncate; rostellum curved, slender, and capitate; stipes of pollinia single, very slender.—From the Island of St. Thomas, West Africa. *R. A. Rolfe, Herbarium, Kew.*

The vineries and plant-houses are at the higher end of the flower garden. A small conservatory, gay with a variety of flowers, the roof draped with the red and white Lapagerias, adjoins the west end of the house, and Melon, Cucumber, and other pits are located in the walled-in kitchen garden, a short distance away. The houses are old-fashioned, and consist of several vineries, in small divisions, and the Vines in them are very old—in fact, too old to yield satisfactory crops.

In the orangery, several good healthy specimens of Azalea well set with flower-buds, were observed, which will, like the Camellias in an adjoining house, render good service in the dull season. A small house, span-roofed, and erected since Mr. Thompson, the present gardener, went there, nearly two years ago, contained excellent Tomato plants in pots. In another house was a small collection of Orchids, in which a good variety of Odontoglossum grande was noticed. Large, cold pits were being planted with Marie Louise and Parma Violets, for winter and spring supply; the plants, which were well grown, were lifted from the open ground with capital balls, and were being planted about one foot asunder each way.

The kitchen garden was found to be well stocked with vegetables, including good breadths of Autumn Giant Cauliflowers, Broccolis, Cabbages, and winter greens; also long rows of Celery, situated 6 feet apart, and looking very promising. On the walls enclosing this garden there are, in addition to a good many old trees, some flourishing young Peaches and others, which have been planted within the last few years, and which number it would be good policy on the part of the gardener to increase. One old specimen of Gansel's Bergamot Pear is growing in the angle of two walls, and has a south and an east aspect, and over which it has extended its branches for a distance of 40 feet right and left. *H. W. W.*

Florists' Flowers.

HOLLYHOCKS.

I was able to show some very fine examples of the Hollyhock-fungus at the end of the month of August; indeed, some of our plants were quite covered with it, and many quite denuded of their leaves. The season of bloom is now at an end, and the entire collection shows good new growth from the base upwards; and I take it that other growers are equally well favoured. The disease having been so bad in the summer, I thought it best not to take any cuttings from the lateral growths; I am, therefore, dependent on what I may be able to get in the spring from the base of the old plants. In order to make sure of these being in good condition in January and February, the plants have now to be dug up, and planted in frames, or pits, or in pots in good soil. The object of this special care is to obtain cuttings early enough in the season for them to make good large plants early in May. There is no disease on the young leaves formed at the base of the plants. I noticed this year that most rapid development of the fungus was coeval with the more virulent attack of the Potato-disease; and when fine continuous dry weather set in later, with cold nights, its progress was arrested. One may, therefore, prepare the ground and plant, in the hope that next season may be favourable to the Hollyhocks, and unfavourable to the fungus. The preparation of the ground is of much importance. The inexperienced cultivator of this, or any other class of plants, usually does not look far ahead, and is apt to forget, if he ever knew, that success in gardening is only for those who are careful to attend to the numerous details, however small, of the subject with which they are concerned. Being a gross-feeding plant, the Hollyhock likes a deep sound loam, rather inclined to clay, than sand, and it should be well enriched with manure. Let it be well trenched-up at once, and left with a rough surface exposed to the action of the weather during the winter, and fork it over, when dry on the surface, early in the spring. The more stirring and turning over it receives the better, but always when the surface is in a dry, never in a wet, state. Free drainage is also necessary, if water has a tendency to stand upon the surface in wet weather. I advise the use of Condy's Fluid, applied with a brush to the leaves of the plants, if the fungus should appear in the winter or early spring months. *J. Douglas.*

The Auricula in Autumn.

Auriculas in pots are slowly going to rest for the winter, the second rest of the year—the first occurring in June. Each period of rest follows a season of growth, but the summer rest of the present year was not so perceptible as usual, owing to the prevalence of moist cool weather. By December, the plants will have lost many of their leaves, which should be cleared away, and the soil stirred, and the drainage examined. Clean pots and clean surroundings

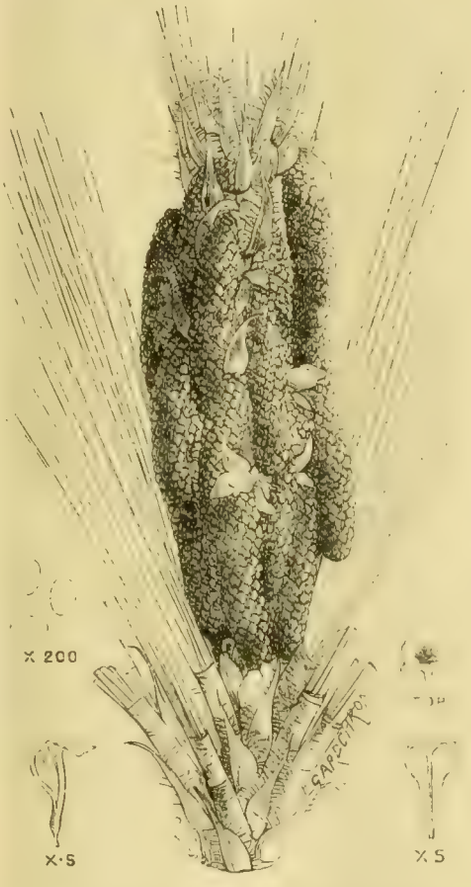


Fig. 94.—Male flowers of Pinus Montezumæ, with detached anthers.

generally are matters of much importance, and plenty of air should be afforded at all times when it does not freeze. As the month of October draws to a close, water must be carefully and very rarely applied. Not that I am in favour of keeping the soil in the pots quite dry during the winter, but the soil should be just moist enough to prevent flagging. External drying influences are slight in winter, and the moisture in the air suffices to keep the plants healthy without much water being afforded. It is not too late to pot off well-rooted young stock, if the pots used are small, the drainage good, and the soil of a suitable kind. Spring-raised seedlings may be pricked off into store pots, filled with a compost that largely consists of sand and cocoa fibre, but having in it enough of fine loam to give it firmness. Seedlings from seed sown as soon as ripe are coming through the soil, and these will be benefited by pieces of glass being put over the pans and pots, and by having all possible sun and light, provided the soil be kept moist enough to prevent any danger of the tiny plants becoming dried up. *R. D.*

Nursery Notes.

MR. G. BUNYARD'S FRUIT NURSERY, MAIDSTONE.

If Kent be the garden of England, certainly it more resembled a Hop-garden the other day than either a fruit or flower garden, as we were whirled along in the train from Swanley Junction, past Mr. H. Cannell's famous Home of Flowers, and his extensive seed farm at Eynsford. There were not lacking some striking floral effects, which evoked rapturous expressions of admiration from youthful passengers; but the floral beauty extended no further. There was very little of fruit in Kent just then, whatever there may have been earlier, and we saw far more of Apples on the small nursery trees in Mr. Bunyard's nursery than had been visible on orchard trees all the way between London and Maidstone.

Alighting at the Barming Station, from out of which opens a wicket-gate into the Allington nursery, we are met by Mr. Bunyard, the warmth of whose greeting is emphatically in accord with the atmospheric temperature, for on this open Kentish range of hillside the September sun pours down with all the strength looked for in July, and it is positively refreshing to find shade amidst the serried ranks of the standard Apple, Pear, Plum, and Cherry trees, which literally form groves of thousands upon thousands strong, and of the most perfect form and growth, whilst the various quarters of trees seem to be interminable in extent, and we conclude that generally two-thirds of the extensive area of nursery must be under fruit tree culture.

Taking stock generally of the condition of the land, almost everywhere the first thing which commands attention is the remarkably clean condition of the ground. Either weeds have little troubled Mr. Bunyard, or he has kept them down in the most successful way. It would be idle to assume that there was no connection between the splendid appearance of the stock and the clean condition of the soil, whilst the exceedingly free use of the cultivator or horse-hoe between the tree-rows shows that beyond keeping the weeds in check, the stirring of the surface of the soil which goes on so regularly is productive of much good. However, even these elements in cultivation are but secondary matters in the production of fine clean, even, and true stocks of fruit trees. Mr. Bunyard lays the greatest possible emphasis on the importance of making a good start with stocks of the right sort, carefully selected, and planted, and in well-prepared soil. The doing of all this constitutes one half of the battle in fruit tree culture. The next step is found in the selection of good buds, or grafts of good sorts from clean healthy stock, getting them in at the right time, and affording every possible nelp to growth later. At Allington we saw the budding stage just completed, the stocks in every direction by tens of thousands not long since worked, and as is so desirable, showing a tip of fresh green leaves at the points of the branches, evidence that the sap is in motion. Then we come across a huge quarter of maiden Apples, for instance, of perhaps fifty sorts, in so many long rows, each according to probable demand. These have made from the buds of last autumn really grand growth, of from 3½ to 4 feet, stout, clean, vigorous, and as even as can be desired, so that there seems not to be a single failure. These are on Paradise stocks, and amongst them may be seen that wondrously fine, ruddy-cheeked, and free-bearing Apple, Bismarck, fruiting literally on the ground from buds thrown out by the dormant buds of last autumn. In the same way, we see large breadths of maidens on the Crab stock showing much taller growth, for the Crab seems to develop shoots which are less thickly studded with leaves than is the wood from the Paradise; then follows the two-year-old stage, with the development of trees, whether dwarf or standard, into that condition which seems to be, on the whole, the best for transplanting; and still further, there are myriads of three-

year-olds available for those purchasers who "want a good tree at once, and blow the price." Among novelties in the training of three-year-olds, Mr. Bunyard has developed what he called the amateurs' standard. These are fine straight stems on the Paradise, which are fully studded with fruit-spurs, whilst the tops still show small heads of shoots. These are really upright cordons with standard heads, and, were the top-shoots restricted to one, they might prove really first-rate subjects for planting at 3 feet apart, beside broad garden walks, and training them overhead to form cordon Apple arches or bowers.

Walking over the nursery, with Mr. Bunyard for mentor, we note with admiration the very remarkable knowledge which he displays of the characteristics of each variety of fruit, Apples especially. The very leaves seem to be taken as readily as the fruits are, and literally he calleth them all by their names. A rogue in a quarter is detected by him as quickly as is a thief by a detective, but it must be admitted in evidence of the high degree of morality which exists at Allington, that "rogues" are few and far between. However it is not merely that this singular knowledge of character in fruit trees excites admiration; it, in a stranger way serves to excite confidence, because in all matters relating to sorts, Mr. Bunyard leaves nothing absolutely to his *employés*, but assures himself that everything, even the most trival kind, is absolutely true. That is very important in a nursery where orders are given for large market-growing purposes, and hundreds of one sort of fruit are required true to name.

Now the dominant ideas in our mind, created by an inspection of the nursery is, first, that Mr. Bunyard, and doubtless many other large growers of fruit trees, has great faith in the future of fruit culture. What more natural, when surveying the immense array of trees, than to ask, "From whence are purchasers to come?" Well, on that head there seems to be no doubt whatever; as certain as fruit trees have been in big demand for the past fifty years—a demand which has largely been increasing, so surely will trees be in great demand during the next fifty years—and beyond half a century at least—the fruitist troubles not himself. Then a further idea suggested is that, the future tree for Apples, whether for market work or for private gardens, is the dwarf on the Paradise stock. Did Mr. Bunyard have trees on the Crab stock only, hardly a fruit would he have to gather this season. It is pretty much the same usually, but seems to be markedly so this year; but turning to the Paradise quarters, fruit and grand fruit is found in great abundance. Indeed, it seems as if it were but needful to plant dwarfs on the Paradise pretty thickly, say some 4 feet apart, and then lift out every other one, and replant elsewhere some four years later, to solve the problem as to securing a supply, of fine Apples every year. Let us look at the croppers, and see how numerous they are. What truly grand fruits Grenadier is carrying; indeed, it is a marvellous bearer. So too is Gold Medal, the fruits not unlike those of Grenadier, but rather heavier, and a longer keeper. Golden Spire is another general cropper, and not less so is Cospatrick, one of Mr. Bunyard's favourites, a handsome half conical Apple of great excellence. One of the special Apples of the season has been Tower of Glamis. It has fruited widely; it is fine at Allington, and should be largely planted. Another capital market Apple is Graham's Jubilee, the raiser who, having gone to his long home, has left behind him a worthy memorial in this variety. "It is one of the coming Apples," says our mentor, and he knows. Another grand Apple, and one taking the place of Lord Suffield, is Lord Grosvenor, and is fruiting finely and freely. So too is Suffield on the Paradise, but evidence accumulates to show that it will not do many years on the Crab stock. Stirling Castle, again, is a grand Apple, fruiting wonderfully here; so too is Bramley's Seedling, and Pearson's New Northern Greening, a splendid late keeper, and other first-rate kinds. Blenheim Pippin, which fruits so sparingly on the Crab till it is aged, fruits quite early on the Paradise. So, too, does the capital robust growing variety, Waltham Abbey Seedling.

Pott's Seedling, Golden Noble, Newton Wonder, Seaton House, Manx Codlin, Northern Dumpling, Warner's King, Sturmer Pippin, New Hawthornden, Lord Derby, Cox's Pomona, Gascoine's Seedling, Prince Albert, &c., are but a few noted in haste of the sorts which fruit so freely in the quarters. Then of sorts which show colour really beautiful are the ruddy and grand-looking Bismarck, Baumann's, Reinnette, Opera, Colonel Vaughan, the early but still *en evidence*, Gladstone, one of the very best of first early market Apples; the fine and richly flavoured Lady Sudely, Beauty of Bath, Duchess of Oldenburgh, also doing well generally this year; Wealthy, one of the best of the American sorts; Peter the Great, one of the transparent varieties; Worcester Pearmain, Duchess's Favourite, High Canons, a pretty striped and flushed fruit; and many others are most valuable in creating beauty, not too abundant in fruits. Such varieties as Egremont Russet, Hubbard's Pearmain, Dutch Mignonne, Cox's Orange Pippin, King of the Pippins, and Summer Golden Pippin, are but a few of the varieties remarkable for flavour, but not displaying such attractive colours as some others. Not being willing to depend upon nursery stock alone for fruit, Mr. Bunyard planted last autumn a sloping quarter of ground with some two or three dwarf trees each of about 300 varieties, enough in all conscience, but still very difficult to pare down, for the excellent reason that some one is sure to ask for varieties even were there many more, and no trader likes if he can to turn away even the smallest order. The trees in this quarter are planted at about 6 feet by 6 feet apart, and as varieties prove to be worthless, they will be either removed or be regrafted with better kinds. A capital illustration is shown in one place of the value of double grafting—a practice which Mr. Bunyard proposes to adopt more widely in the case of some varieties—where Blenheim Pippin, double grafted into a moderate-growing variety, is fruiting remarkably early. The practice seems to be capable of wide application in the case of Apples; but beyond repeating that the Apple-tree stock, whether standard, dwarf, or trained—for there are lots of fine espalier or flat-trained trees, as well as single and double cordons—is in grand form throughout. We must take leave of our premier fruits now, and refer to the fact, that Pears form a prominent feature in the stock at Allington, but this year, here as elsewhere, they are producing very little fruit. However, it looks as though there will be plenty next year; and the fact that a big fruit crop seems so inevitable may well induce persons to purchase trees and plant, because the season has helped so materially to bring up stout bloom-buds in great profusion.

Stone Fruits.—Plums are in great abundance—of course we mean the trees—and all the best market varieties, such as Rivers' Prolific, Denniston's Early Gage, a wonderful bearer; Victoria, Monarch, Czar, Pond's Seedling, &c., are found by thousands as standards, on tall clean stems, and with heads which tower up some 8 feet high; of course there are plenty of dwarf Plums, as there are of Cherries.

Cherries, especially of Morellos and sweet Cherries, are very fine stock, and tempt one to plant because the trees are so handsome. Peaches and Nectarines, too, very fine trained trees, are in great plenty; better could hardly be looked for, the wood in this open, dry, and sweet soil ripening up hard, and setting fruit buds thickly. The Peach-house, a huge span structure, has three rows of trained trees down the centre, and consisting of dwarfs and riders, capable of filling houses, and furnishing walls at a day's notice. The side beds have several rows of trees in pots, all of which have fruited freely, and, properly treated, they will continue to do so for several years. Another span-house is devoted to Figs in pots—for Figs are just now very popular fruits; whilst others are full of Cucumbers for seed. A novelty which resembles a huge aviary is a house some 8 feet wide and high, and over 100 feet long, which is covered with small-mesh wire, and holds three rows of trees—viz., two of flat-trained Gooseberries, and one of Currants. The experiment will be watched with interest, as if thus protected from birds, the galvanised wire may generate a cold atmosphere. However, the usefulness of the house will soon be tested. Of course there is plenty of ordinary nursery stock at Allington. Trees, shrubs, choice and beautiful Conifers, Roses, hardy herbaceous plants—indeed, something of everything, almost—and what is lacking is found in the other smaller nurseries of the firm. But recently Mr. Bunyard disposed of his old seed shop, and has erected a very showy structure on a prominent and elevated site fronting the High Street. Mr. Bunyard, who is a most hard-working and conscientious nurseryman, has done something for Kent, and the county should repay him with interest.

Plant Notes.

Lagerstrœmia indica.

It is a significant fact that Lagerstrœmia indica is not often met with in gardens, and for what reason it seems hard to conceive, for a more beautiful object than a well-grown specimen of the Lagerstrœmia is not in cultivation.

Some will say that it is a "miffy" grower, while others will say it is such an unsightly object during winter. These are fallacious notions, as I will point out. I had spent twenty years of my gardening career before I ever saw this plant in flower, and I was much struck with its delicate beauty. A plant which I raised from a cutting was in four years 7 feet high, and 5 feet through. It was shown at a provincial show in a 1st-prize collection, and eventually selected from about forty specimens as the best plant in the show. This is several years ago, and I remember hearing the late Mr. Woodbridge remarking, "Yes, it is not only the best plant in the show, but the most charming plant I ever saw." Now, with regard to its untidy nature during winter. Why, it is one of the most accommodating plants we possess, for as soon as it has done flowering it may be turned out-of-doors till the appearance of frost, when it may be placed in any out-of-the-way spot, not necessarily under glass, but in a shed, provided it will exclude frost. In February it should be pruned into shape, cutting out all the superfluous growth. The ball should be reduced as much as practicable, and repotted in four-fifths of good loam and a fifth of charcoal and river-sand. Practically speaking, it is a spring-flowering plant, but it may readily be flowered twice in a season. As soon as the first lot of flowers is over, cut it back to within an inch of the old wood, when in August you will be well repaid for the trouble bestowed upon it. Red-spider is apt to be troublesome, but by dint of syringing, that pest and others may be kept at bay. *G. B. Claydon, Holbecks Park.*

Polemonium flavum.

May I be allowed to ask whether any correspondent has had this plant with white flowers? I was led to suspect this summer that it is not a good species, because amongst seedlings of it I had one or two plants which had the long-branched divaricate habit of P. flavum, while the flowers were white with purple reticulation in the throat, just as in the white variety of P. cœruleum. I sent specimens both of the yellow and the white-flowered forms to a botanist, who told me that my P. flavum did not seem typical, so it is possible that the seed was crossed. Lately, however, in a friend's garden, I saw a white-flowered Polemonium exactly similar to those I had grown as P. flavum, and, on asking its history, was told that it had come from seed of P. flavum. These Polemoniums are liable to cross in gardens, as I have had a plant for several years which I take to be P. cœruleum × P. reptans. Another I believe from its habit to be P. reptans × P. humile, but though three years old, it has not yet flowered. We should, probably, often find hybrids where several species are grown together, if the seedlings which come up round the parents were allowed to flower; but in that case they produce such a weedy wilderness that they are generally scuffled up as soon as they appear. *C. Wolley Dod, Edge Hall, Malpas.*

Plants and Their Culture.

The Forcing-houses.—An early opportunity should be taken to go over the stock of plants for forcing, and pot up all kinds of plants needed for winter, this being better done now than later, and where many new subjects for forcing purposes are required, these should be secured at an early date. Hoteia japonica, one of our best forcing plants, should be potted up from the open ground, and the pots plunged in ashes or cocoa-nut fibre. For the first lot for forcing I prefer the imported clumps, as they give a better return. Home-grown plants, to force well at an early date, should be grown on a south border, where the crowns will thoroughly ripen. A few pots of Polygonatum multiflorum and the stock of Dielytra spectabilis should be potted, taking every care in doing so not to injure their roots and crowns, and place them in a cold frame or plunge them in the open. The useful Christmas Rose should have a cold frame put over it, and a little warmth afforded them a short time before the bloom is required. Large plants out in the open ground will give much purer blooms if a handlight be placed over them, and means taken to keep slugs and snails from the blooms—a sprinkling of soot and lime, before placing the glasses over them, will do good. A few of the early flowering Azaleas may be placed in a temperature by day of 60°, 5° lower at night. The hard forcing of any kind of plants should be avoided at this date, most of them requiring more time now than at any other period of the year, and only well-ripened plants should be employed for early forcing. Capital Azaleas for early work are Fielder's White, Carmichael's Seedlings, and alba and Deutsche Perle.

The deciduous varieties of Azaleas I prefer for later forcing, for if these are forced rapidly there is a loss of bloom. The plants of these latter kinds should be potted up as soon as possible, and treated as advised for hardy plants. Deutzias, unless well ripened, will not force satisfactorily, therefore only a few should at this date be introduced into the forcing-house. I prefer leaving them for a short time longer. There are now some valuable additions to these plants. D. crenata Watererii and D. c. Wellsii bear much larger flowers, and force very easily. Another useful forcing plant is Philadelphus coronarius—mock Orange; it forces with but little trouble when established in pots. The Prunus in variety and Weigelas are all good when specially grown. Laburnums in pots do well also. Gueldres rose, Hydrangea paniculata, Lilac Charles X., and Staphylea colchica all force well, but Gueldres rose and Hydrangea need slow forcing, any attempt to hurry them being damaging to the bloom at this date; they are better at a later date. Lilacs and Staphylea force well if a warm bed of leaves can be given them, or if placed in a vinery just started, and kept well syringed. Callas, if grown in pots, may get a few degrees warmer temperature, but recently potted-up plants should be kept cool for some time yet. Rhododendron Cunninghami, a useful plant for early work if placed in a little warmth, soon comes into bloom. Our plants of this variety are full of bud, having been grown on a warm border for the purpose of forcing them early. Roses in pots that were forced last season, if repotted or top-dressed some time back, will now be showing flower-buds, and may be placed in a cool-house, they needing no forcing. Mildew is often troublesome on Roses, and should be checked at once by dusting the plants with sulphur, or washing them with water in which sulphur is dissolved. Tea Roses should be potted up annually, to take the place of worn-out plants. Now is a good time to pot them, placing them in the open air for a time, and plunging the pots in cold frames. These Roses will give a few nice blooms without forcing at a somewhat late period of the spring. A few H.P.'s, if potted up now, will be useful in the late spring. *G. Wythes, Syon House, Brentford, W.*

The Orchid Houses.

Cattleyas.—C. Bowringiana is perhaps one of the best introductions of recent date for flowering at this season of the year. As a rule, the long, erect, terete-stemmed Cattleyas may be classed as "miffy doers," but C. Bowringiana and C. bicolor are exceptions. My experience with the first-named plant is, that it does best when the roots are comparatively pinched for space in the pot, and I have always found these terete long-bulbed varieties of Cattleyas succeed if not allowed to become dry at any season. To those mentioned, I would add C. Harrisoni, C. Loddigesii, C. amethystoglossa, C. Leopoldii, C. velutina, and C. Schofieldiana. These species will succeed under identical treatment, and the Cattleya-house suits them, if they are grown in peat in pots, and stood altogether in one part of it if possible, where rather more moisture may be afforded them than the other occupants require. The number of blooms on a spike of C. Bowringiana, although sometimes reaching fifteen on individual spikes, are not so many as might be expected from the size of the growths. The temperature of the Cattleya-house should now be allowed to fall as the days shorten, maintaining a night warmth of 60°, or in frosty weather 3° or 4° less, which will have no injurious effect on the plants.

Odontoglossum-house.—The plants after repotting, which should be finished ere this, will claim little attention beyond looking over them once a week with the watering-pot, and affording them a dewing over with the syringe daily, the floors and walls of the house being kept moist.

Oncidium tigrinum is a charming Orchid to mix with Odontoglossums, and it does well under much the same conditions of culture, with this exception, that the plants will require no water from the time the spike of flowers dies off until the young growths are seen to be pushing away from the base of the pseudobulbs in March. This species of Oncidium is perhaps the best grower of the genus.

Odontoglossum blandum and O. nævium majus should now be placed at the warmest part of the house, but I do not advise their removal to any warmer house, being convinced that if the plants receive a temperature of from 48° to 50° at night, they will grow much better than plants kept several degrees higher. The syringe should be brought to bear upon them at least once a day, when the weather is bright, twice. If the general surroundings are what they should be, the plants will not suffer from damping. The temperature may fall to 45° at night, and then the heating apparatus may be utilised. *A. G. Catt, Parkfield, Hallow, Worcester.*

Fruits Under Glass.

Cucumbers.—The weather having been favourable to free ventilation, short-jointed growth will have been made, but the general good condition of the plants will not justify any want of attention to details, such as the frequent stopping, thinning, and tying-in of shoots, the removal of male and female blossoms, if fruit is not required, keeping the glass clean inside and out, as well as all parts of the house. To produce good results, the house must be properly heated, the atmosphere kept charged with ammonia from fermenting materials, principally tree leaves. If the lights may be covered at night with mats or canvas, or both combined, fuel will be economised, radiation will be checked, and the plants improved in health thereby. Another matter of some importance is the supplying of dryish and nicely-warmed compost at each top-dressing. Rich turfy loam is best adapted for winter dressings, and when this is heavy, it must be mixed with mortar rubble, sharp grit, or fresh horse-dung, and a small quantity of bone-dust is always desirable. The soil, whilst being pulled to pieces, must be carefully searched for wireworm. Plants grown in 18-inch pots, and raised on inverted pots or pedestals of bricks, are easily managed, and if stood about 6 feet apart, and a body of fermenting material put around them, a lasting bottom-heat will be obtained, and sufficient ammonia will arise from it to keep the plants in good health. When the bottom-heat declines, the mass should be turned over, and fresh material added, and this can be done without the plants suffering a check. Where bottom-heat is supplied by pipes passing through a tank beneath the bed, the soil near the bottom is apt to become soddened by the escaping vapour. I have sometimes had plants give good returns for the whole year under the large pot treatment, but at the same time I prefer to make spring and autumn sowings, better and more certain successional results being obtained. This kind of water-logging in soil over a tank bed is undesirable, and perfect drainage should always be secured, and caution exercised in watering. Day temperature, 70° 75°, with a few degrees more on sunny days; at night, 65° to 70°, varying a few degrees, according to weather; ventilate the house so as to change the atmosphere daily. Old plants in bearing should be kept thin, and cropped lightly, or the fruits will cease to grow straight. The temperature should be always kept a few degrees higher than that advised for younger plants, or the fruit will be acrid. For many years I was in favour of Master's Prolific as a winter Cucumber, but now grow Rollinson's strain of Telegraph, winter and summer alike. *W. Crump, Madresfield Court, Worcester.*

The Hardy Fruit Garden.

Apricots on Walls.—The pruning of these trees I used formerly to defer until the turn of the season, when, as it often happened, the weather was so severe that the work was still further delayed, and sometimes till the sap commenced to flow and the buds to swell. When pruning was thus delayed, the bleeding of the wounds made by the knife was followed later by gumming. To avert this danger to the trees, it is best to prune them when the leaves begin to fall, as at that stage the wounds heal before severe weather sets in. The fruit-spurs of the Apricot soon run away, and become long and untidy, and which harbour numerous insects. These long spurs should be cut back to a bud that is nearest to their base, and in the case of old neglected trees, all the spurs may be so cut off and a fresh set of fruit-spurs may be obtained the following season from the shoots that start all along the denuded branches. It is not advisable to nail or tie-in the trees forthwith, but if convenient, they may be detached from the wall and washed, the wall at the same time getting a thorough cleaning.

Medlars, Quinces, and Late Nuts.—These should now be gathered, and all late Peaches on walls should have glass lights placed in front of the trees. Although the flavour of these late varieties is not high, the fruits are very acceptable. *A. Evans, Lythe Hill, Haslemere, Surrey.*

The Kitchen Garden.

Asparagus Beds.—The fine weather has thoroughly ripened the Asparagus haulm, which, however, should not be cut off till it has withered; and if weeds have sprung up, the bed should be hand-weeded roughly. Young plants that were planted at wide distances apart in permanent beds, and the bed cropped between them with Lettuces and other low-growing crops, should be now relieved of all useless plants, and anything likely to prevent the haulm from properly maturing.

Jerusalem Artichokes may be lifted and stored like Potatos, taking care, when digging them up, to clear the soil of every tuber, otherwise much annoyance will be caused another season. Another way is to leave the crop in the ground, digging the tubers as required, after first cutting down the tops. It is well to litter the beds liberally, to keep frost out of the soil.

Rhubarb.—The Apple crop, being a poor one this year, there will be a greater demand than usual for Rhubarb in winter and spring. Rhubarb may be obtained from forced roots in a short time by taking up some of the roots and placing them close together in an open shed for a few days previous to putting them into heat. It is, however, yet early to begin to force Rhubarb roots, but as the leaves of the plants become withered, they should be cleared away so as to expose the crowns to the influence of the weather. It may be remarked that it is not so profitable to force young roots as those a few years old. The best flavoured stalks are gathered from Rhubarb which is forced in mild hotbeds in full light. In this way it is very little inferior in colour or flavour to that grown in the open air. Rhubarb may be forced in pots under stages in the glasshouses, in cellars, or under pots, with warm manure, but the flavour of the stalks is not so good as when the plant has sunlight. *H. Markham, Mereworth Castle, Maidstone.*

St. Petersburgh.—Our Correspondent reports that the display of fruit at the great Russian Horticultural Exhibition is of great extent, and much importance. Russian Apples are remarkable for their hardihood, colour, and flavour.

EDITORIAL NOTICES.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY,	Oct. 28	Royal Horticultural Society: Committees, and Lecture by Dr. Masters.

SALES.

MONDAY,	Oct. 27	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Fruit Trees, &c., at Cliffe, near Rochester, by Protheroe & Morris.
TUESDAY,	Oct. 28	Dutch Bulbs, at Stevens' Rooms. Lilies, at Protheroe & Morris' Rooms.
WEDNESDAY,	Oct. 29	Dutch Bulbs, at Stevens' Rooms. Plants and Bulbs at Protheroe & Morris' Rooms.
THURSDAY,	Oct. 30	Lilium auratum, Tuberoses, and Amaryllis Bulbs, Lily of the Valley Crowns, and Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Greenhouse Plants at Londesborough Gardens, Norbiton, and at Protheroe & Morris' Rooms.
FRIDAY,	Oct. 31	Established and Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Nov. 1	Dutch Bulbs, at Stevens' Rooms, and also at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—46°.3.

Cracking in Grapes.

That some varieties of the Grape show a greater or less tendency to the cracking of the berries is, unfortunately, well known to most gardeners. Those varieties in which it is most commonly observed are Madresfield Court, Muscat of Alexandria, the Grapes of the Sweetwater class, and especially Foster's Seedling. The loss of fruit from this cause, it may be taken, is not great, and it rarely equals that which follows the far more formidable shanking of Grapes. It is usual to attribute it to a sudden access of water to the roots, following a season of great drought, or when the soil of borders inside a vinery has been allowed to become very dry, and is then heavily watered. It is obvious that the causes which contribute to its infliction would operate more readily in an outside border, the conditions of the soil as regards moisture being less within the control of the gardener. But the cause does not appear to lie wholly with the conditions of the soil of the borders, for in the case of Madresfield Court, we have a Vine whose fruits crack just about the period of final swelling and colouring if the air of the vinery is moisture-laden. Whilst allowing that much that is said and written about the subject of cracking is mere guessing as regards its causes, it is in the main correct when it points at excess of water in the border or in the air as one of the predisposing causes. The other predisposing condition may be brought about by inordinate thinning of the berries, which, while it has the desired effect of increasing their size, does not increase the weight of the bunch, or make the skin of the remaining berries capable of much more stretching, so as to hold the increased mass of pulp. The skin provided by Nature is designed to cover a normal sized berry, and if we, by our manipulations, greatly increase its size, it will be at some degree of risk, because of the consequent splitting of the envelope, and any sudden influx of sap arising from water given in large quantities to the soil or by leaf-absorption is likely to bring about the mischief. Those of us who have grown Grapes out-of-doors in this country, and these fruits are usually unthinned, or those who have resided in European countries where the Vine is grown extensively, will doubtless have remarked on the immunity of the berries from the evils we speak of, notwithstanding the exposure of the Vines to every vicissitude of the weather.

It is a question whether our Vines in houses should not be made to endure some degree of imitation of the irregularity of the weather out-of-doors to which the vineyard or wall-grown Vines are exposed. We mean that these fluctuations should be in the direction of not keeping the soil in a constantly or uniformly moist condition, but of allowing it to fluctuate between a moderately dry condition and a moist one; the dry state of the soil being made to coincide with what are regarded the critical periods in the growth of the berry. By so doing, the plants would not remain excessively charged with sap, or the berries at the full stretch of their skins, and thus unable to find space for more supplies, except at the cost of splitting them. Another modification of the same idea, so as to avoid cracking, would be to thin out the berries to a less extent, and for ordinary table use this would scarcely be regarded as of much account, the varieties of Grapes most subject to suffer in this way being often made unnecessarily large in berry by too much thinning out.

Where Grapes are grown to be exhibited, and the tendency of judges to give prizes for size, and what is called "finish," irrespective of flavour, remains what it is, hard thinning will be put in practice, in spite of the risks the grower runs by so doing.

In some gardens splitting is very rare, and these will be found to overlie rock of some kind, or other porous substances, admitting free passage to the water, so that the roots travel wide in search of it, and yet never become surcharged. In other gardens, on the contrary, splitting is a common occurrence, not only in Grapes, but in Plums, Apricots, Pears, and Gooseberries, and the soil of such gardens is usually of a retentive nature; and, notwithstanding its probably good artificial drainage, water is long in passing to low levels.

The best Vine soil is a loam of medium lightness, well compacted by treading when dry; and which has lime-rubble and limestone broken small well incorporated with it; and is enriched when the Vines are in good bearing with phosphatic manure and potash salts. Except in very dry soils and warm districts, it is questionable if heavy mulchings of dung are wanted, or are desirable, provided the phosphates and potash salts have been afforded the soil. And shallow borders for Vines are, on the whole, preferable to deep ones, as in them the Vine roots can be made to keep within the warming influence of the sun, and manures are brought readily within reach of the roots.

Rosery at Effingham House.—The subject of our illustration (fig. 95) is a pretty Rose-garden belonging to C. E. Lambert, Esq., and differing much from those commonly seen in this country. This garden, as we are informed by Mr. Kemp, the gardener at Effingham, forms a circle, whose diameter is 63 feet; the height of the fifty supports to the arches, 10 feet; the height to the top of each arch, 12 feet; and the width, 4 feet. The arches were planted with Banksia Roses, Sweet Briar, Jasmines, and Honeysuckles, about twenty years ago. The interior parts of the circle have been improved in various ways, and laid out in the form of beds. The centre bed is raised 2 feet above the general level, and gravel walks with Box edgings have been formed. The beds are planted entirely with the best varieties of Hybrid-perpetual Roses. Inside of the boundary of pillars and arches, a grass verge 2 feet in width exists, and the four entrances to the garden are ornamented with climbing Roses, Wistaria sinensis, Clematis, &c. The photograph from which our illustration was taken, is by Mr. Roberts, Cookham, Surrey.

Royal Horticultural Society.—Next Tuesday, the 28th inst., Dr. M. T. Masters, F.R.S., will speak at the Drill Hall, on "Trees and Shrubs for large Towns," and the Council would be glad if exhibitors would, if possible, apart from the ordinary exhibits of fruit, flowers, and vegetables, contribute ornamental and useful specimens, by way of illustrating the lecture.

—— The Council of the Royal Horticultural Society intend to hold the following Conferences at Chiswick Gardens during the year 1891, viz.:—

July 7.—Hardy Midsummer Flowers; 8th, Strawberries, Raspberries, Currants, and other Small Fruits.

October 6.—Hardy Autumn Flowers, especially Michaelmas Daisies, Perennial Sunflowers, Autumn Crocuses, &c.; 8th, Conifers as Ornamental Trees, and for Timber.

The Council would be greatly obliged to anyone possessing good varieties of Michaelmas Daisies, or of perennial Sunflowers, if they would be kind enough to forward plants, without delay, to Mr. Barron, Superintendent of the Royal Horticultural Society's Gardens, Chiswick, London, W., as they are very anxious to obtain a thoroughly representative collection of these charming flowers, with a view to the selection of the best varieties, and the correction of their nomenclature, which seems to be at present somewhat confused.

"Die Natürlichen Pflanzen Familien."—We have before us the forty-first and two following numbers of the above excellent work. The forty-first contains Tetrasporaceæ, Chlorosphæraceæ, Pleurococcaceæ, Protococcaceæ, Hydrodictyaceæ, Ulvaceæ, Ulothrichaceæ, and Chaelophoraceæ; the forty-second, Euphorbiaceæ; and the forty-third Compositæ.

National Chrysanthemum Society.—The new and revised annual issue of the Catalogue of the above Society is now ready for distribution, and this season, in consideration of the celebration of the centenary of the introduction of the Chrysanthemum to England, it comprises features not included in former editions. It contains a history and bibliography compiled by Mr. C. Harman Payne, the Secretary of the Revision Sub-committee. The select lists contain all the latest show varieties, the A. B. C. has been augmented, and it now contains over 3000 names, including many American and other varieties not previously catalogued, and at the end a supplemental list of over 200 novelties sent out this year, and all the flowers certificated by the National Chrysanthemum Society are indicated by

the letters F. C. C. As a work of reference, it promises to be one of an exceedingly valuable character.

Memorial to the Late Mr. William Holmes.—A meeting of the members of the National Chrysanthemum Society and friends, convened by special circular, was held at the Royal Aquarium, on Wednesday, October 15, 1890, to consider the expediency of raising a memorial to the late Mr. William Holmes. Mr. R. Ballantine, Chairman of the Committee of the National Chrysanthemum Society, presided and there was a large attendance of sympathisers. The circular calling the meeting having been read, it was stated that letters expressing approval of the proposal had been received from Mr. John McKenzie, Linton Gardens, Staplehurst; Mr. J. T. West, Cornwall Gardens, Brentwood; Mr. J. C. Restall, Broad Street, Birmingham; and Mr. E. Wilson, Uffington, Stamford; and a letter was read from Mr. D. B. Crane, of Highgate, making some suggestions as to the form the memorial should take. The Chairman opened the meeting by setting forth the objects for which they were met, and inviting suggestions from those present, both as to the expediency of raising a fund to provide a memorial, and also as to the form the memorial should take. After some discussion, it was moved by Mr. T. Bevan, seconded by Mr. Witty, and carried unanimously, "That, in the opinion of this meeting, it is desirable to raise a memorial to the late Hon. Secretary of the National Chrysanthemum Society." Considerable discussion followed, and suggestions were offered by Messrs. Shea, Doughty, Broughton, E. Molyneux, E. Harland, and others, as to the form the memorial should assume. It was then resolved to raise a fund, to be called the William Holmes' Memorial Fund, and that a committee be formed to obtain subscriptions to the same, and to consider suggestions, and formulate a method of applying the Fund. It was also resolved that the following should constitute the committee, together with the officers of the Society, and the representatives of affiliated Societies:—Messrs. E. Sanderson, E. Molyneux, J. Laing, T. Bevan, H. Cannell, L. Castle, George Stevens, W. Roupell, W. Witty, N. Davis, C. E. Shea, E. Beckett, C. Gibson, G. Gordon, G. Prickett, B. Wynne, R. Owen, and E. F. Kemp. Mr. Harland, of Hull, proposed that Mr. Lewis Castle be desired to act as honorary secretary, and consent having been given, the proposition was duly seconded, and carried unanimously. Mr. Molyneux's suggestion, which was most favourably received by the meeting, was as follows:—"That the memorial take the shape of a class or classes in the schedule of the N.C.S., to be called the Holmes Memorial Class, to be competed for at the November Exhibition of the N.C.S., terminable at a period consistent with the amount of the funds forthcoming." Mr. Shea's suggestion was to this effect:—"That the form the memorial to Mr. W. Holmes should take be that of a medal or medals given triennially, after the manner of the Veitch Memorial Medal." Several subscriptions have already been promised, and all communications should be addressed to the honorary secretary, Mr. Lewis Castle, Hotham House, Merton, Surrey.

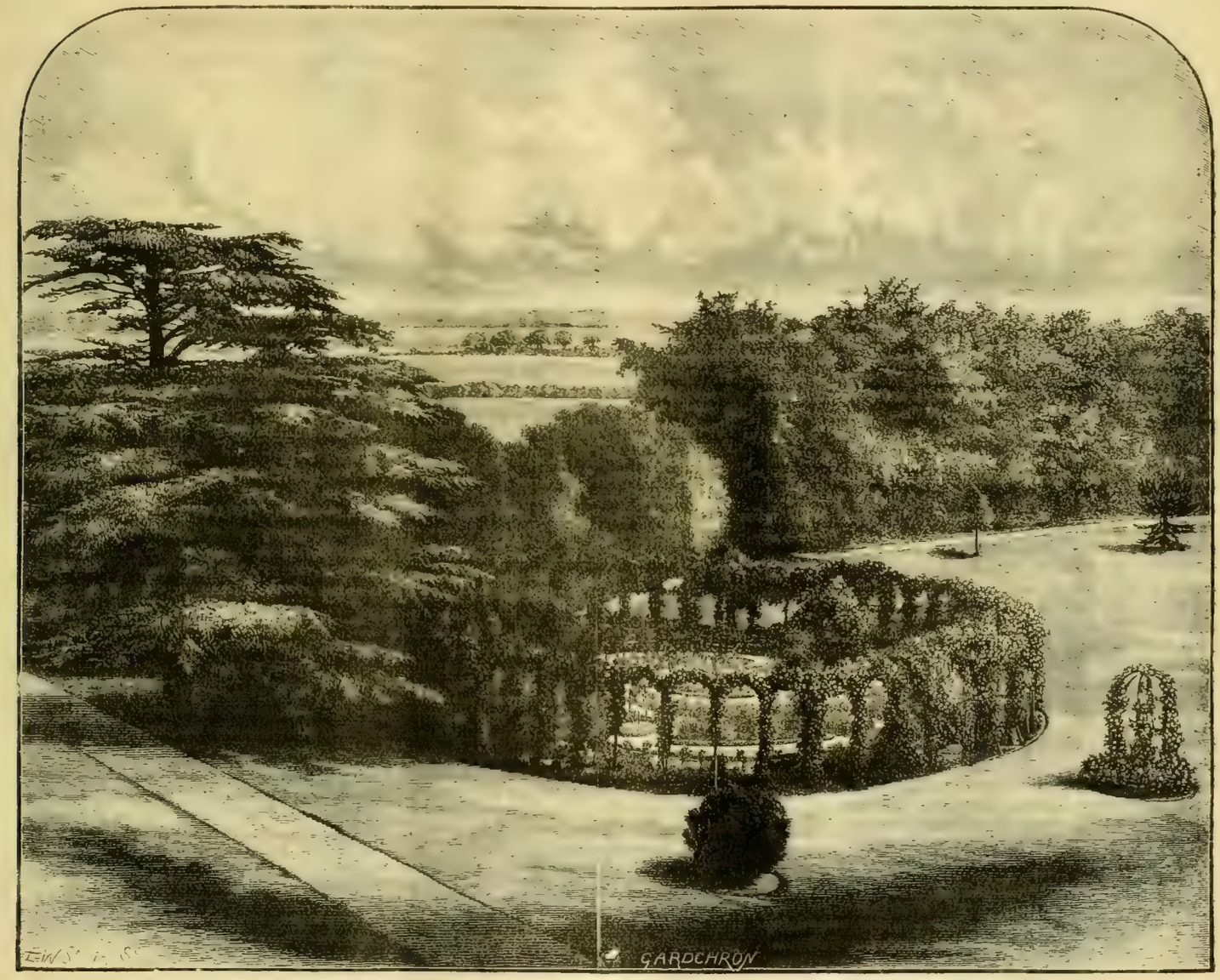


Fig. 95.—Rosery at Effingham House, Leatherhead, Surrey. (see p. 470.)

A Garden of Pampas Grass.—We read in *Garden and Florist* of a garden of Pampas-grass of 10 acres in extent, which is one of the objects of interest to tourists who visit Anaheim, California. This year about 40,000 plumes will be harvested, and the yield after the plants have become well-established, will average 100,000 plumes. These plumes are worth about 5 cents apiece.

Wireworm and Lime.—A correspondent of the *American Florist*, October 1, asserts that 3 or 4 lb. of unslaked lime to every bushel of soil to be used

will act so perniciously on the wireworms contained in the soil that they will give it a wide berth. The best way to use the lime is to spread the soil in a flat heap, say 10 or 12 inches high, and place the required quantity of lime on the surface, and when the latter is slaked, it should be pulverised and mixed thoroughly with the soil.

Paris Green and London Purple.—We hear of much recklessness in America in the use of this poisonous tree dressing, and others deleterious to human beings and grazing animals. The requisite quantity is often greatly exceeded, thereby adding to the cost and labour of its application. One farmer used it over a crop of Cabbages, and caused serious illness to those who partook of them. Too much caution can scarcely be taken in the employment of these preparations of arsenic. Sulphate of copper is somewhat less poisonous, and it is almost equally efficacious when used against the Codlin-moth and mildew.

Floral Parades.—These silly affairs, *fêtes des fleurs* of the French, and which are not unknown in this country, have been taken up by the "Society" people at Lennox, Mass., U.S.A., only there the *fête* is called a "tub" parade, tub being American for our somewhat slang term "trap," dog-cart, &c. We read in the *American Florist* of one backboard being decorated with white Hydrangeas. The cart that won the 1st prize was ablaze with Salvias and scarlet Gladiolus; another had Golden Rod decorations, and the occupant of the "tub" carried a parasol of the same. One phaeton was covered with wild Asters, and another with white Hydrangeas, and so on, and so on.

The Genus Masdevallia.—The first part of the Marquess of Lothian's *Monograph* of species growing in his collection at Newbattle, is announced as nearly ready. The work will contain hand-coloured lithographs and engravings of every available species. The descriptions and plates are by Miss Woolward, with notes by Consul Lehmann. The work will be issued in parts of imperial quarto size, at the price of £1 10*s.* each part, the issue being limited to 250. In the first part the following species are treated of: Masdevallia amabilis, bella, Chestertoni, ephippium, leontoglossa, macrura, peristeria, simula, torta, and Veitchiana. Subscriptions are received by Mr. R. H. Porter, 18, Princes Street, Cavendish Square, London.

Resistance of Plants to Salt Spray.—In the Isle of Wight, lately, we had an opportunity of observing the way in which certain plants resist the action of the salt-laden breezes. Some few weeks ago a salt blast occurred, the track of which, confined in width to a few yards only, was clearly traceable by its effects. Dahlias were blackened as by severe frost; Chrysanthemums, Ampelopsis Veitchii, Japan Honeysuckle, Roses, Elms, Clematis, Passiflora cœrulea, and Hydrangeas were all more or less injured, while plants of the same species growing a few yards off, and in the same aspect, were unhurt. On the other hand, Euonymus, Aucuba, Opium Poppies, Tropæolum, Ivies, Fuchsias, in the same line of fire, were completely unhurt.

Rio de Janeiro.—Señor Barboza Rodrigues has been appointed Director of the Botanic Garden of that City.

Sarracenias in the Open Air.—MM. de Smet Frères have been trying experiments with these plants, which deserve notice. Some of them were planted in the beginning of May, in a small pond exposed to the full sun; one pot contained a Sarracenia purpurea, and another a variety darker than the type. One-third of each of the pots was submerged in the water (it would be better, they say, to sink but a quarter of each pot). The two plants have developed remarkably well; the foliage is robust, and of a clear healthy colour. The S. purpurea obtained a Certificate for good cultivation at the Ghent meeting lately. Encouraged by the good result of this experiment, MM. de Smet Frères have recently (at the beginning of August) treated in the same way hybrid Sarracenias which had become much injured at the exhibition; the foliage was dried up, but now all these plants which were deemed spoilt, are beginning to shoot up afresh, and it may confidently be hoped that they will be finally saved. The experiment will be renewed next year, and if it is again productive of good results, will be valuable to all who have access to a little water, which they can also furnish, if they wish, with the original Sarracenias from the United States and Canada. The experiment of culture in the open air in this country has been tried by Mr. George Paul, Canon Ellacombe, and others.

Horticultural Club.—The first dinner and *conversazione* for the present session took place on Tuesday evening last, when, notwithstanding the miserable foggy weather, there was a good attendance. The chair was occupied by Mr. John Lee, and amongst those present were Messrs. Harry J. Veitch, Cousens, H. J. Pearson, Lindsell, Burrell, Walker, Rev. W. Wilks. The subject for discussion was the Gladiolus (hybrids of Gandavensis), which was opened by the Rev. H. H. D'Ombrain, who entered into various questions connected with its history and cultivation, and in opposition to some recent statements, showed specimens of bulbs; while Mr. E. Blackwell kindly brought up a number of beautiful spikes, to illustrate the subject. A very animated discussion took place afterwards, which was joined in by nearly all the members present.

New Parks for London. — The people of London, says the *Pall Mall Gazette*, perhaps hardly realise what a number of plums the Parks Committee of the County Council has in store for them. If the schemes contemplated by this committee are all carried out, nearly one hundred acres of land in different parts of the metropolitan area will shortly be thrown open for purposes of recreation. The biggest scheme is for the acquisition of the large Pine woods adjoining Bostall Heath, near Woolwich. The Heath, 55 acres in extent, is already in possession of the County Council, and Sir Julian Goldsmid has now offered to sell to the County Council the adjoining 74 acres of woodland for £200 an acre. Towards this the Plumstead District Board will contribute £100 per acre, so that the cost to the County Council of this splendid addition to the parks of London will be only £7400. The smaller schemes in contemplation are (*a*) the conversion of Victoria Park Cemetery into a recreation ground, and (*b*) the acquisition of the Bishop's Meadows at Fulham. Both of these pieces of land will be acquired by the Council on easy terms. The Bishop's Meadows, 12 acres in extent, will be given by the Ecclesiastical Commissioners, provided the County Council will lay out the grounds at an estimated cost of £1500, and build a retaining wall along the river front at a cost of £8800. The third piece of ground—a disused cemetery, covering 11 acres, in the crowded district of Bethnal Green—is now in the possession of a country clergyman, who has to pay for it a ground-rent of £43 10*s.* a year. Find-it somewhat of a white elephant, he offers it, subject to this charge, as a free gift to the County Council. At the same time the Metropolitan Gardens Association promises to spend £3000 in laying out the ground. Thus, to add up the sum, for a capital outlay of some £18,500 the ratepayers of London will get the use of three new parks, covering, together an area of 97 acres.

The Physic Garden at Chelsea.—A semi-official paragraph has been going the rounds of the Press to the effect that the Society of Apothecaries have finally resolved not to part with the Physic Garden on the Chelsea Embankment. It appears that the idea of throwing this piece of property into the clutches of the demon builder never originated with the Society. The Earl of Cadogan, who, as lord of the Manor, might ultimately claim certain reversionary rights in the event of the conditions of the original grant being unfulfilled, approached the Society on the subject, and the Society, which is not a wealthy one, applied in vain for help in maintaining the garden, to the Royal Society and the College of Physicians, the bodies which have in the first instance the reversion in case of the Society declining to continue the garden, but all negociations have been finally broken off. The usefulness would not be in the slightest degree diminished by making the garden more easily accessible. Without in any degree diminishing the power to admit or to keep out any particular class of people, or individual, the present system of catechising prospective visitors is annoying and absurd, and should be abolished. In the meantime the garden has a distinctly useful purpose to fulfil educationally, and every effort should be made to develop it in this direction.

Public Gardens in London.—The Metropolitan Public Gardens Association (the Earl of Meath, Chairman) has decided to give seats for recreation grounds in the Borough, Canning Town, and Southall; to plant trees in a space in Cleveland Street, W., Barking Road, E., and a small chapel yard in Walworth, S.E.; to commence laying out St. James' disused burial ground, Ratcliffe, E., and as soon as funds permit, and the question of their future maintenance is provided for, to lay out Bedford and Sidney Squares, E., Bartholomew Square, E.C., and Victoria Park Cemetery, E., and to contribute towards the laying-out of the ground in Great Church Land, Hammersmith, W. The Association is about to appeal to the public for more funds to carry out their useful work. When the Association has made a paradise of the east and south-eastern parts of London, which seems not far distant, we trust it will turn its attention to the west central parts, which sadly needs looking up. Why not begin with some of the squares? The enclosures in these parts are gloomy and deserted nearly all day long. Private rights in these cases are tantamount to public wrongs; and it seems scandalous that such handsome breathing spots in the very centre of London should be reserved for a few dozen people who never use them.

Mr. D. Morris.—We make the following extracts from *The Colonies and India*. Mr. D. Morris, formerly of the Jamaica Public Gardens, and now Assistant-Director of Kew, will proceed to the West Indies by the R.M.S. *Atrato*, sailing on November 12. He is going out, at the invitation of the Governments of the Windward and Leeward Islands, to advise in regard to the development of a scheme of Botanical Stations for the Lesser Antilles. The idea of supplying the smaller islands in the West Indies with some economical means for establishing new or improving old industries was suggested in the report of the Royal Commission of 1884. We gather that, since that time, with the aid of Kew, considerable progress has been made in the matter, and stations have been established, or are in course of being established, at Grenada, St. Vincent, St. Lucia, Antigua, St. Kitts, and Dominica. As a matter of general interest, we may mention that Mr. Morris will take out with him from Kew in November several Wardian cases containing Gambier plants. Gambier is a substance used by nearly every tanner in the kingdom. The present supply comes exclusively from the East Indies. It used to cost £10 per ton, and it now costs £40 per ton.

Ware and District Horticultural Mutual Improvement Society.—An ordinary meeting of this Society, the membership of which steadily increases, was held on the 14th inst., the Rev. A. E. Lofts in the Chair. A capital collection of fifteen varieties of Pears was staged by Mr. R. Smith, of Presdales, Ware; and a very interesting exhibit was staged by Mr. Alexander, of Poles, Ware, in the form of a collection of Onions in ten varieties, which showed evidence of superior culture. Apples and Chrysanthemums were also staged by other members. A paper was read on "Plant Stoves and their Occupants," by Mr. A. King, who treated the subject pretty exhaustively. A cordial vote of thanks was passed to Mr. King for his paper.

SCOTTISH FLOWER GARDENING.

The few degrees of difference in latitude between London and Aberdeen would seem to be sufficient to produce considerable variations both in character and hardiness of much of the materials employed for flower garden purposes. This is noticeable alike in public as well as in private establishments, and is more particularly apparent in the greater quantities of the old-fashioned florist flowers—Phloxes, Pentstemons, Antirrhinums, Violas, Gladioli, and Hollyhocks being grown. It is true, considerable numbers of these are also planted in the south, but they do not attain that luxuriance which characterises them in the north; nor is the reason of this far to seek, as they thrive best under a long, steady season of growth, which, speaking broadly, is essentially the climate of Scotland. Of course, it is a matter of common knowledge that there the days in summer are longer, so to speak, than in the south of England, or, in other words, the sun rises earlier, and sets later, thus making the day several hours longer. But although the north gets more hours of daylight, yet the maximum force of the sun is reduced, and it is consequent on those phenomena that the conditions are more favourable to the growth of hardy flowers — a fact which southern planters would do well to remember in allotting a position to this kind of plant. The brighter sun of the south hastens the flowering period, but as that necessarily shortens their season of growth, there is a corresponding reduction in the fulness of the crop of flowers, and, on the other hand, subjects which like bright sunshine and drier conditions generally, are not happy amongst those cooler things.

There are, of course, some plants which seem to do equally well almost anywhere — notably the tuberous Begonia—which is in many places largely displacing the zonal Pelargoniums. Again some plants, viz., Harrison's Musk, Lobelia Erinus, the accommodating Mesembryanthemum cordifolium variegatum, and, to a certain extent the Fuchsia; and, in a more or less degree, many other plants. The general tendency points towards the employment of as many hardy and half-hardy things as possible, and which we observed were well carried out in some gardens that I visited.

Being in the neighbourhood of Perth, I took the opportunity of visiting that famous old show place, Drummond Castle, Crieff. Although the Castle is some three miles from the town, yet many visitors walk there, and it is worth the extra exertion. The road, soon after leaving the town, turns westward through a fine avenue of trees, whose branches interlace, forming a delightful shady vista. On reaching the lodge gates there is another avenue of trees, considerably narrower and closer than that alongside the highway. This is the private avenue to the Castle, and passes through a finely-wooded, picturesque park with a splendid sheet of water. From this natural landscape scene, we pass through the gates under the old tower into the Castle-yard, when, on looking over the yard and upper terrace-wall, the scene is changed, and one of the noblest gardensque pictures lies before us. The design is large—and it takes some little time to fully comprehend it—but if there is one thing more than another which readily catches the eye of the spectator, it is the immense number of closely-clipped, pointed, columnar trees, and the masses of low round-headed shrubs, which are mainly planted in geometrical blocks, and of nearly every conceivable shade of green and variegated foliage. The columnar trees are planted around these masses, and behind the borders which run alongside the walks. Many of these trees consist of fine old variegated Hollies, variegated Oaks, Box, Cupressus, Yews, and similar naturally fastigiate trees. The main walks through the piece form a kind of diagonal cross, with a quadrant of fan-shaped beds, where at the point of intersection these beds are, for the sake of effect, planted in one block of colour: yellow, blue, or dark, as the case may be. But I noted some very effective beds of a plant I do not remember ever having seen used in the same way before. It was the reddish-purple topped Clary Salvia Horminum violacea. It is a hardy annual plant, easily raised from seeds, and owes its beauty not to the flowers, which are small and inconspicuous, but to the bright-coloured leaves at the tips of the shoots. Along the sides of the diagonal walks were contiguous masses of hardy plants, such as Myosotis, Monardas of sorts, Lythrum Salicaria var. splendens, Iceland Poppies, Aconitums, Pentstemons, Golden Rod, Cupheas, Larkspurs, Anemone japonica, Phloxes, Heuchera americana, Antirrhinums, Musk, Sweet Williams, &c.; we also noted a very dwarf red Dahlia, called Rising Sun, as being very effective.

In another border, which might have been a ribbon border, had it not been for specimens dotted about of the common garden Balsam, Impatiens glandulifera, which here seemed dwarfer and more floriferous than we are wont to see it in the south, the effect was good, especially when the border was seen from the top of the tower; and that is the point from which the effect is chiefly to be judged. There were circular masses of geometrically-shaped beds, filled with thriving Ericaceous plants, Menziesia polifolia being in fine bloom. Mention must also be made of the climbers on the retaining walls at the top of the terrace; the subjects used are, we think, almost unique for the purpose, and being more suggestive of a greenhouse wall than one exposed to the skies. Here were noticed many varieties of Clematis, Tropæolum speciosum and T. pentaphyllum, Maurandya Barclayana, Senecio macroglossus, Lophospermum scandens, many Roses, Pelargoniums as tall as a man, even such things as Verbenas, Cupheas, and Petunias were doing duty as if they had been climbers from the beginning. It was an exceedingly pretty wall, not soon to be forgotten. Indeed, looked at from all points, the place worthily maintains its right to the popular title of a show place.

On the way back to Perth, I visited the gardens at Methven Castle, where some capital floral gardening has been carried out. In one part, Cordylines were freely employed as dot plants in and among the beds, the groundwork in most cases being of the usual bedding plants. A somewhat unusual bedding plant is the accommodating Primula obconica, planted together with Musk. This species of Primula, as seen here, promises to be quite as useful in the flower garden as in the conservatory. Some beds of tuberous Begonias were very fine, as also some lines of Pentstemons, Antirrhinums, Dahlias, and Violas. In another parterre the planting was more on the mixed style—that is, Fuchsias and foliage plants were judiciously interspersed throughout; the irregular but graceful outlines thus produced were pleasing and picturesque, and the whole of the arrangements reflected credit on Mr. Whitton, the head gardener.

Calling at Glamis Castle, Forfar, I found the grass-terraced flower gardens very brilliant with huge masses of colour on the bottom parterre. Of course, where this system prevails, recourse must be had to Pelargoniums, Calceolarias, and similar things. However, there were several fine beds of tuberous Begonias on the upper parterre. Turning my eyes to what used to be ribbon borders, I was glad to find that a more natural state of things now obtains. The borders have been planted with hardy herbaceous plants, whose intrinsic merits are not only more satisfying, but which form a great auxiliary where many cut flowers are required. There was at the time of my visit —the middle of September—a fine display of Michaelmas Daisies, Helianthus in variety, Rudbeckias, Phloxes, Monardas, the curious plant Linaria vulgaris, var. pelonia; Veronicas, particularly V. longifolia, var. sub-sessilis. The borders along the front of the fruit houses had some splendid lines of useful plants for cutting from, notably huge masses of the white Chrysanthemum coronaria fl.-pl.—a wonderfully fine lot of Gladiolus—of the gandavensis type; Pentstemons and Antirrhinums. There was also observed a fine lot of Dahlias, the two favourites being the white Cactus Dahlia Constance and the old Crystal Palace Scarlet, often called by the inelegant name of Glare of the Garden; various varieties of Chrysanthemum carinatum, as well as Violas were grown in front—giving the whole a sloping massive appearance—not to be sensibly diminished by cutting a few barrowloads of flowers, just the sorts of plants to grow. I might just say that in looking through the gardens round Dundee, flower gardening is pursued with vigour—which cannot be said of the gardening in its parks—but of this, more anon. In private establishments, I was pleased to find hardy border plants were much in favour in many places, of which I might mention Beechwood and Clement Park, Lochee. *F. R.*

BOOK NOTICE.

Tomato Culture for Amateurs. By B. C. Ravenscroft. (Upcott, Gill & Co.)

The great popularity of the Tomato at the present time may very fitly be termed one of the wonders of the vegetable world. Very little more than thirty years have sufficed to transform the Tomato from a purely ornamental plant to the very front rank as a useful vegetable, and a staple article of food.

The Tomato, like all other plants, requires a certain amount of skill and care in its cultivation, many failures arising from very trivial causes, which a little more knowledge or experience would have easily prevented. In this way, the short treatise before us, entitled *Tomato Culture for Amateurs*, may prove useful. There is a good deal of practical information and sound advice contained in it, which cannot fail to be useful to those who require it. In glancing through the pages, we derive the impression that the amateurs, for whom the work is prepared, are rather extensive growers! but how many amateurs, we wonder, will erect Tomato-houses? These may be all very well for the grower of Tomatos for market, but the amateur with his half-dozen or more plants must utilise the space at his disposal.

A portion of the work is taken up with valueless descriptions of the varieties that are or have been at one time or another in cultivation. Above one hundred names are given, besides synonyms, occupying over one-third of the whole pages. Of what use is this to the amateur who has only space for a score of plants? The author flounders terribly in regard to what he terms the Tree Tomato. What has been known for many years as the upright or Tree Tomato is very correctly figured at p. 89, as the "self-supporting or Bush Tomato." In France it is found under the names of Grenier and De Laye; and Halleck, in America, this year calls it "The Station Tree" Tomato. The Cyphomandra betacea, which Mr. Ravenscroft terms the true Tree Tomato, is not a Tomato at all, although sometimes used as a substitute (see *Dictionary of Gardening*), notwithstanding the extraordinary concoction of an illustration (p. 79) of something purporting to be that plant!!

OUTDOOR TOMATOS AT READING.

Under favourable climatic conditions, what would have been a most comprehensive, interesting, and instructive trial of this now popular commodity was instituted this year by Messrs. Sutton & Sons, with 1500 plants in 98 varieties. Looking over the collection, one could not but lament that the laudable aims of the firm had, in a certain degree, been frustrated by the weather. The trial has brought to the front certain varieties which, despite the unfavourable season, ripened their fruits. Amongst these we may name Earliest of All, a variety that is unquestionably the earliest red Tomato in cultivation, coming in from eight to fifteen days before any other variety. The fruit is of medium size, of a brilliant

red colour, slightly corrugated when grown out-of-doors, but smooth when grown under glass; prolific, and of superior flavour. This Tomato, sown in heat in March and transplanted to the open ground in May, will frequently produce an abundant crop of ripe fruit in July, and continue fruiting until cold weather sets in. It is one of the best varieties for ripening out-of-doors, and this fact, combined with its great productiveness, makes it a valuable variety for any one to grow out-of-doors. Maincrop, introduced by the firm in 1885, has proved to be one of the most trustworthy and prolific varieties for out-door as well as indoor cultivation. The plants were covered with clusters of large, rich, red fruits. The flesh is firm, and of first-rate flavour. Golden Nugget has, for several successive seasons, proved to be amongst the earliest to ripen its fruits in the outdoor trials. It is quite distinct from Green Gage, and all other yellow-fruited Tomatos, and is adapted for culture either under glass or in the open. The fruit is borne in clusters numbering from eight to twelve; the shape is globular and smooth; colour bright yellow, and the flavour is very superior; either when eaten raw, as a salad, or cooked, the fine qualities of this variety are certain to be appreciated by those who like the Tomato. C uster was noted in fine form; the fruits are about the size of a Victoria Plum, were distinct and handsome. The flavour is peculiarly agreeable, and to those who are fond of eating Tomatos raw, it will be very acceptable. The fruit is much larger, and the plant more productive, than the old Cluster Tomato. Perfection is undoubtedly the finest Tomato for general cultivation, whether under glass or in the open border. *X.*

Roses.

NEW ROSES.

There was a time when at this season of the year the annuals of the French raisers of Roses were looked forward to with no small amount of anxiety and curiosity, when we expected to hear of some grand progress and some startling novelties, but those days have long passed; it became a well nigh hopeless task to discover where amongst the sixty or seventy new Roses were to be found those gems which were to gladden our eyes in the following season. English growers for sale, who used to visit Paris and Lyons in those days, were eagerly interviewed to see if they could tell us of any wonders that they had seen; now they come and go without people troubling themselves much about their movements. One good cause for this indifference is the fact that of late years we have been enabled in this country to produce Roses, which, if they are not up to the mark of some half-dozen of the foreigners, are yet taking their place amongst the best Roses in cultivation; and there is this advantage connected with them, that we are the better enabled to judge of them, as they are more frequently and better exhibited than could possibly be the case with French Roses.

The past year has been especially notable in this respect, for whereas there have been years when the Gold Medal of the National Rose Society has not been awarded, this year no fewer than three Roses have been thus honoured. The National Rose Society has now been in existence fourteen years, and during that time it has only, up to this season awarded four Gold Medals, *i.e.*, to Her Majesty, Mrs. John Laing, Sir Rowland Hill, and Souvenir de Sarah A. Prince, and of these the two latter were not seedlings, but sports. Now, this year, it has awarded three medals, to Salamander (Messrs. Wm. Paul & Son), Mrs. Paul (Paul & Son), and Margaret Dickson (Alex. Dickson & Sons).

Salamander (Messrs. Wm. Paul & Son), is a well-built Rose of the Charles Lefebvre type; the petals are stout and symmetrically arranged, the colour a fiery-red, approaching to scarlet; it is a type of Rose which is always popular, and might be described as omething between John Stuart Mill and Charles Lefebvre; the habit of the plant seems vigorous and reliable.

Mrs. Paul (Paul & Sons) is a remarkably distinct Rose, quite out of the beaten track; it is of the Bourbon race, yet unlike anything we have amongst them, and might not inaptly be described as a pinkish-white Madame Isaac Pereire; the flowers are large, the petals arranged like a Camellia, the colour pink-white, with a faint tinge of blush in the centre. The habit of the plant is vigorous, and the Rose is absolutely distinct from anything that we have; while large, it is not coarse, and will be much valued by exhibitors when it becomes better known.

Margaret Dickson (Alexander Dickson & Sons), a seedling from Merveille de Lyon, crossed with Lady Mary Fitzwilliam; the colour is white, with a faint blush tint in the centre; petals very large, and of good substance; the habit of the plant is vigorous, and the foliage remarkably thick, suggesting the possibility of its being thoroughly mildew-proof. It was awarded the Gold Medal of the National Rose Society at Birmingham, but I think it was shown in even grander form at Wirral a few days previously. I think that the popularity of Merveille de Lyon will be eclipsed by this remarkable flower; indeed, I fancy it will be found to be one of the greatest acquisitions of recent years.

Marchioness of Dufferin, another of Messrs. Alexander Dickson & Sons' gains; a cross between Madame Hippolyte Jamain and Lady Mary Fitzwilliam; the flowers are extra large; the colour is a beautiful rosy-pink, suffused with yellow at the base of the petals. The blooms that I saw of this at Wirral impressed me very much as likely to be a worthy partner of Earl of Dufferin, brought out some years ago by the same firm.

Bruce Findlay (Messrs. Paul & Son).—Some blooms of this variety exhibited at the Drill Hall early in September were very noticeable for the brilliant colour, showing it to be a most valuable autumn flower, in its colour not unlike Gloire de Margottin, and evidently having the same good autumn-blooming quality, but having more stuff in it; the flowers are well formed, and the plant is vigorous.

Of those Roses not absolutely new, but brought out a year or two ago, there are some which will take front rank. As yet one has seen nothing among the Hybrid Perpetuals which have reached us from France which claims much attention: the best are again to be found amongst our home-raised ones, although in Teas the reputation of some of the foreign raisers is still well maintained.

Gustave Pigareau is said to be a very large flower, as large as Ulrich Brunner; habit good; colour of flowers, brilliant carmine.

Miss Jeanne Dickson (Dickson & Sons, 1890).—A fine flower, which is likely to be a favourite, the colour a light rosy-pink, petals large, high centre, and altogether a most charming Rose.

Mr. James Brownlow (Dickson & Sons).—A most vigorous grower, colour of the flowers brilliant carmine, flowers large and full; a cross between Marquise de Castellane and Paul Neyron.

John D. Pawle (Paul & Son).—Rich velvety crimson, with shading of deep maroon; blooms freely in autumn; distinct in colour and form.

Lady Arthur Hill (Dickson & Sons).—A seedling from Beauty of Waltham, rosy-lilac, distinct in colouring; large and beautiful in form.

Margaret Haywood (Paul & Son).—Flowers very large, bright rosy-pink, of vigorous growth. I believe, a sport from Madame Clemence Joigneaux, and which originated in the garden of T. B. Haywood, Esq., Reigate.

Teas.

Cleopatra (Burnett).—This, the latest of the many beautiful Roses we owe to the late Mr. Burnett, is a flower of great beauty, form exquisite, colour white, which varies, as on many Tea Roses; it may, perhaps, be ranked as a very pale pink, with deeper colour towards the edge, petals very smooth; and altogether a very great beauty.

Climbing Niphetos (Keynes, Williams & Co.).—A very vigorous sport from that fine Rose, Niphetos, from which it only differs in habit, as the flowers are identical. It makes shoots from 15 to 20 feet long, and soon covers a large space.

Ernest Metz (Guillot).—A grand rose-coloured flower, with deep centre, somewhat of the form of Catherine Mermet. I am not yet sure whether it will be found a good grower, but if so, it will be a great acquisition; the flowers are borne singly on stout footstalks.

Madame Hoste (Guillot).—Although this flower was sent out in 1887, it has only been rarely seen in its beauty. Yellowish-white, with deeper yellowish centre. It is perhaps inclined to be somewhat thin, and the plant should be, therefore, well disbudded. An abundant autumn bloomer.

Madame Pierre Guillot (Guillot), somewhat in the style of Madame de Watteville. Colour coppery-orange, paler towards the edge of the petals, which have an edging of pale rose.

Mrs. James Wilson (Dickson & Sons).—A very pretty flower, somewhat in the style of Marie van Houtte, deep lemon-yellow, margined with rose. Flower of good substance. A very promising Rose.

Souvenir de Sarah A. Prince (S. Prince).—This flower has fully established its character as one of the very best white Tea-scented Roses, and will, in the eyes of many, rank with Niphetos and The Bride.

May Rivers (Thos. F. Rivers & Sons). — White, with slight lemon tint in the centre, very free, approaching to the Chinas in form and habit of flowering.

L'Idéale (Nabonne & Co.).—This very charming Noisette, of bronzy-red colour, has everywhere been admired, and will be a formidable rival to William Allen Richardson; the combination of colours in it is most striking, and as a flower for a buttonhole or nosegay, it will rank very high. I may here remark that in a former article, I made a mistake in ascribing Suzanne-Marie Rodocanachi to this raiser.

It will be seen that, as I have said, a goodly number of the best and most promising Roses are of home origin, and that even among the Teas there are some which are quite equal to many of the French flowers. I have not included any of the hybrid Tea Roses, as I have had but little experience of them. I have heard good opinions expressed concerning them, and they are vigorous and healthy growers. *Wild Rose.*

Home Correspondence.

RIPENING OF THE WOOD OF FRUIT TREES.—Although most of us who have to do with gardening matters have been complaining about the absence of sun and lack of warmth during the summer months, we have every reason to congratulate ourselves on the due ripening of the wood of all kinds of fruit trees. Everything appears to be now favourable for the coming year; if we should have a mild spring, fruit ought to be abundant. No time should be lost in getting root pruning done, that is a quick corrective of too much vigour, and does much good if judiciously carried out. *J. S.*

EARLY NEST BUILDING BY ROOKS. — The rooks commenced to build new nests in the grounds at Shoreham Place, Kent, on September 26. Such a thing has not come under my notice before. I should much like to know if any reader of this paper has noticed their building at this season in any previous years. *G. C.*

THE MOUNTAIN ASH AND OTHER TREES FOR TOWN PLANTING.—For roadside planting in small towns, along the front of villa and other residences, nothing can be more ornamental or suitable than the Mountain Ash, as, unlike some other trees so employed, it does not grow to a large size, and is never dense in leafage, and is yet symmetrical in habit, while all through the autumn it is a striking and beautiful object on account of the numerous clusters of its lovely coral-red berries. In Woodford, Essex, Mountain Ash trees have been freely planted in the streets. In many cases Limes and

other large-growing trees are a positive nuisance, as they not only rob the soil, and overshadow all other plants in forecourt gardens, but they make the rooms gloomy when in leaf, and the leaves of Limes fall early, making the trees unsightly in early autumn. In wide open spaces in towns, there is no doubt but that the Plane and Poplar are the most suitable trees to plant, and it is gratifying to see that they are being largely planted. *J. Sheppard.*

VEGETABLE PRESERVES.—In your report of the recent meeting of the Royal Horticultural Society, favourable mention is made of the vegetable preserves which Mrs. Dean had made and sent up for the opinion of the Fruit Committee. It is unfortunate that the opinion of the committee, as generally expressed, that these pure vegetable preserves was a "most meritorious exhibit," is not made public, and that any such opinion has to be ascertained through individual members rather than through the official record. If, in every case, no matter what the exhibit, the general opinion of the Committee were so expressed and recorded, it would not only add materially to the interest attaching to the proceedings of the Committees, but would afford the information exhibitors are so desirous of possessing. Turning to the vegetable preserves, I may say, that the object in view in preparing them was to show how possible it may be to utilise such products for the purpose of producing pleasant, wholesome, and thoroughly digestible sweets. One great fact was established in relation to them. That was, that all had their admirers; thus, I found the worthy Secretary of the Society, who had a first taste, to be enthusiastic over the Tomato preserve, the chief fault of which was that it was not quite so firm as I should have liked it to be. Still, as some other made has proved firmer, it is evident that it is of no fault of the Tomato. In spite of some pleasant added flavourings of Ginger, essence of Lemon, Cloves, &c., yet the undoubted distinct flavour of the Tomato is well retained, and by many was specially appreciated. The fruits are prepared by cutting them through the middle, removing the seed, and also taking off the skins, then boiled with sugar, as usual, and flavoured to taste. The colour is of a pleasing red, and fairly firm, semi-transparent, and of a yellowish hue. The proper course is to select fruits getting too old for ordinary cooking, the flesh having become firm though the rind is still soft. Peel the Marrows, cut into pieces, remove all seed and the surrounding fibre, then cut the flesh into cubes about an inch long and half-an-inch wide, and put into the stewpan with an equal weight of sugar. The sugar hardens or solidifies the cubes, so that when thoroughly done these exist in a rich syrup. The flavouring of ground Ginger, little or much as desired for taste, with essence of Lemon added, after the boiling is nearly complete, gives that delicious finish to the Marrow preserve, which makes it so highly favoured by all privileged to partake of it. When the cubes are rather larger, and the Ginger is in greater quantity, the imitation of preserved Ginger is so far complete that the imitation is often the better product of the two. Carrot again is a very amenable product for the making of jam. That shown at the Drill Hall, on the 14th, was the first of the kind made here, and, imperfect as it was, found numerous admirers. That was boiled into a soft pulp, whereas there can be no doubt but that properly treated the flesh might be preserved in the form of cubes, and of I find plenty who appreciate the preserve immensely. Perhaps next, the Beet preserve found most favour. Beetroot has a decidedly pleasant distinctive flavour of its own, which is easily preserved. The roots were first boiled fairly soft, cooled, peeled, then cut into thick slices, and then cut into small squares, boiled with about two-thirds its own weight of sugar, and flavoured also with ground Ginger, Cinnamon, Cloves, and Lemon; the Cinnamon and Cloves being tied in a small muslin bag for removal. The variety used is that prince of Beets, Cheltenham Beet, the flesh of which is of the darkest, softest, and finest texture. The colour of the preserve is of course rich. The boiling with sugar hardens the pulp somewhat, so that the little squares resemble the red soft jujubes, once so favoured as a sweet. Vegetable Marrow is treated very much the same way. Some of my friends who have tried their hands at Marrow preserve, have succeeded in making but a soft pulpy mixture, which is far from being pleasing. Properly, the cubes of Marrow should be solid, a peculiarly pleasant texture. The flavouring with Ginger, Lemon, Cloves, &c., is naturally a matter of taste. The skilful preserver could with these vegetable materials, and the employment of diverse flavourings, produce various compounds which would be eagerly purchased by the public. Certainly no one would suspect them with being adulterated with other products, whilst it is better we should be able to obtain them as *bonâ fide* preserves than forming pulp for the bodying of fruit jams. The great recommendation of these vegetable preserves is that they contain no acidity. In the case of ordinary fruits, there is in the making always a considerable percentage of acidity to correct by the introduction of a large body of sugar, and even then the acidity is not destroyed. This acidity to those who largely consume fruit jams promotes flatulency and indigestion. From these ills the vegetable jam consumers are free. Then we can always ensure the possession of plenty of vegetables of the kinds named, and thus whilst fruits may be in some seasons scarce, be so far independent of failures in that direction. It is, perhaps, too late now for many to try the Marrow preserve, but at least plenty can venture the making of Beetroot and Carrot. *A. Dean.*



FIG. 96.—PINUS MONTEZUMÆ, GROWING IN THE GARDENS OF J. RASHLEIGH, ESQ., MENABILLY, PAR, CORNWALL. (SEE P. 466.)

POLYGONUM VACCINIFOLIUM.—I am not aware whether Polygonum vaccinifolium is known to be a good plant for bees. In our cottage garden near here, we have a large bed of it, more than usually covered with flowers, owing to the long spell of sunny weather; on passing it about a week ago, I found it swarming with honey-bees. At this time of year, when flowers are becoming less plentiful, this may be worth noting. *George F. Wilson.*

PROTECTING THE BLOSSOMS OF FRUIT TREES FROM FROST.—This is a matter that is discussed once a year, and then forgotten until the flowers on the walls and trees remind us that time is on the wing, and that it is again too late to carry out the intentions we formed after the sharp frosts had given a blow to our hopes in the preceding May and June. To be forearmed, we have put up a considerable quantity of glass coping on the fruit walls. It is 3 feet wide, and portable, and may thus be taken out and stored away as soon as the fruit is no longer likely to be touched by frost. There is a period of barely four months before us, and now is the time to set about making or buying protectors for next spring. These need not be put up until they are wanted, much protection making the blossoms susceptible to injury from frosts. *A. Evans.*

TROPÆOLUM SPECIOSUM (p. 446).—One naturally hesitates to make any comment on the notes of such an authority among hardy plants as is Mr. Ellacombe, but I am almost certain his failure to grow this plant is not caused by lime in the soil. We have two good plants of it here growing on the south side of the mansion; one of them is 12 feet high, the other is 18 feet high, and it has made all its growth this season—both of them have also flowered beautifully. These have had no special preparation for them, but are growing in the natural soil, which contains a large amount of lime, so much, in fact, that none of the so-called "peat-loving" plants will grow in it, and we have nothing but limestone in our substrata for a depth of several feet; in fact, I have never seen anything else as far as we have dug down. My neighbour, Mr. Burroughes, has also a fine plant of this species of Tropæolum, which is growing against a north wall in a soil of similar character, and in the three or four years since it was planted its creeping roots have wandered 6 feet away from the spot it was originally placed in, and the plant now covers a large part of the wall. We find it likes plenty of moisture at the root, does best in a dull or showery summer, and is a plant that is very liable to get much disfigured with red-spider if dry weather prevails for a long time. The ground round about its roots for a good distance should never be disturbed, as one never knows whereabouts the young shoots will appear, and these are very easily broken off. I have visited many gardens in Kent, Surrey, and Middlesex, and do not remember ever seeing this plant further south than this district, but often hear how well it grows in Scotland, and suppose this is owing to that hitherto undefined property of the atmosphere up there, which causes Pansies, Violas, double Primroses, &c., to succeed so much better than they do with Southern growers. *W. H. Divers, Ketton Hall Gardens, Stamford.* [A great quantity of Tropæolum speciosum is growing

at the foot of a Yew hedge in Messrs. Wood & Son's Nursery, Maresfield, Uckfield, Sussex, and in a similar situation at Messrs. Paul's nursery at Highbeech. The plants grow with great vigour, covering the hedge with a blaze of colour. It grows also splendidly in Sir Deighton Probyn's garden at Sandringham. Ed.].

—— I think Mr. Ellacombe's theory concerning this beautiful climber is the correct one, as I have found the same difficulty in getting the plant established in soil which contained lime. Some years ago my employer wished to have this creeper for a covering to a porch with a west aspect, and for two or three years we failed to get it to start, until I planted it in peat and kept it moist at the root. This was in Gloucestershire, and we had the same difficulty with all the American plants, for which we had to make beds of quite other soil, no matter from what part of the country they came, if the soil they had grown in was peat or loam. They would not live in our soil, charged as it was with lime. I found that leaf soil when used in good proportion of great assistance, and as we had abundance of it, we mixed it largely with the peat, which had to be brought from a long distance, thereby making a great saving. I find this creeper does best when not disturbed at the roots, and during severe weather a covering of leaves is put over them. It is easily propagated from the seeds, which appear in abundance. It grows splendidly at Cragside, Northumberland, where it is planted on the side of the gardener's house; and at Alnwick Castle, on one of the park lodges. It is a beautiful object in those places, and I never saw it doing so well in the south or west of England. The soil at Cragside and Alnwick is such as Mr. Ellacombe describes—a shallow soil overlying sandstone at a little depth. *G. Wythes, Syon House.*

A MODEL VILLAGE.—My model village, I ask forgiveness for the emphatic use of the first person, is South Somercoates, in the Lincolnshire marsh. It has over 100 acres of allotment ground. How this came about is very interesting. Charles II. granted a strip of land by the sea to that finished courtier, Sir Endymion Porter, on the condition that he should reclaim it from the marshy state it then was in. This, Sir Endymion proceeded to do, but from time immemorial the villagers had wild fowling rights over the district. The improvements would interfere with these rights, hence as soon as any banks or dykes were made, they banded together to destroy them. The struggle between the knight and the village-folk continued for some time, until an agreement was struck by which he agreed to surrender 100 acres or more of good land to the village provided he was allowed to reclaim the rest of the marsh. This land has belonged to the village ever since, and is now let out by the parish authorities at 18*s.* an acre, all charges of hedging and ditching being borne by the parish. This system has, as might be expected, bred a sturdy and independent English peasantry, though withal very opinionative. This latter trait is well illustrated by a botanical heresy. They are in the habit of gathering the Salicornia on the muddy flats by the sea, and pickling it, and calling it Samphire. If one ventures to hint that it is not really Samphire, you are straightway crushed by the retort, that what their fathers called Samphire must be so. A very pretty feature of these allotments is the abundant growth of the Wild Michaelmas Daisy in the dykes. On the muddy shore the plants are dwarf and succulent, but in the fresh water they reach a height of 2 feet, and the leaves lose the succulent texture. Near the allotments is a very large rabbit-warren, in the old watercourses of which the Cynoglossum, or Hound's-tongue, grows luxuriantly. In September this warren was worth a very long journey to see, for 40 acres of the side of it were covered by a dense growth of Ragwort, the plants being as thick as if sown naturally in cultivated ground. The glow of colour from this large stretch of golden flowers was extremely vivid. On inquiry, I found that the Ragworts were as plentiful every year, but never two following years on the same side of the warren. *C. A. M. Carmichael.*

WALK-HOES.—It may be of interest to "R. B. L. & Son," who wished to know something about walk-hoeing implements (p. 451), that we are using a Phœnix. I think that the cost of the implement was £5, and Messrs. Keane & Co., of Cappoquin Waterford county, supplied it. *T. Denny, Down House Gardens, Blandford.*

POTATO DISEASE IN GREAT BRITAIN.

In view of the appearance of the Potato blight in Ireland, the Inspectors of the Board of Agriculture have made special inquiry under the Drainage and Improvement Acts into the position and prospects of the Potato crop in England and Scotland. In England and Wales the area planted with Potatos is returned as 388,133 acres, and that in Scotland as 141,528 acres. Ireland contains no less than 780,801 acres devoted to their culture, but these are not included for the purposes of the present inquiry, since the country lies beyond the jurisdiction of the Board of Agriculture. The reports of the inspectors have just been issued, and from them it appears that no serious loss to the Potato crop of Great Britain is to be anticipated. There is but a slight presence of disease in the East Anglian crop; the damage is largely restricted to cottage gardens and allotments; and among the predisposing causes, stress is laid on the want of change in the varieties of Potatos grown, and the use of the smallest tubers for seed. In Lincoln the crops are generally sound; in Norfolk the earlier failed somewhat, but the later have been more satisfactory. In Kent, an injury of not more than 10 per cent. is indicated; and in the midlands and the south-west, only the earlier crops were affected. In the north of England, the appearance of disease is connected with the thick muggy weather which prevailed during part of August; but though the Potatos on nearly one-third of the farms were affected, it was only to the extent of 8 to 10 per cent. In the large Potato-growing county of Lancaster, a total damage of some 20 per cent. is reported, though there has been no spread of disease since the beginning of September.

The northern Scotch inspectors send a more unfavourable report than those already considered. A very serious and general presence of disease in Inverness, Ross, and Cromarty, where collectively 16,000 acres are grown, is mentioned.

In this part of Scotland, as in many English districts, neglect to change seed, or to attend to rotation, is clearly recognised as weakening the disease-resisting power of the root. In the Orkney Islands disease has been unusually prevalent; half of the early crop was affected, but not the later and main crop, while from Shetland it is reported that no disease at all has yet appeared.

In Aberdeenshire, Banff, and Elgin, all early varieties seem to have been much affected. In the Potato-growing county of Perth, where little short of 15,000 acres is grown, the inspector believes Potatos on the lowlands to be more diseased than on the higher-lying lands, where the crop is under average, but of good quality. In Fife, where a similar, or indeed slightly greater area is grown, a fair average crop is noted, the later sorts being nearly free from disease, although as much as 50 per cent. damage has been done to some early varieties, which it is contended, are always more or less subject to disease.

South of the Forth the county areas under Potatos are smaller. One general report from the three Lothians, where the crop covers over 13,000 acres, speaks of some extent of disease. Another report for the county of Edinburgh states the early crop as under average, and showing 25 to 50 per cent. of disease, but the late or main crop little effected. The border counties of Roxburgh and Berwick show little disease observable, except in early garden crops.

In Ayrshire the state of affairs is bad, but in Lanarkshire a fair average crop is reported.

As to crops most affected, there is a very general concurrence of opinion on the part of the Scotch inspectors as to the "Regents" being among the varieties showing most disease. The varieties reported by the Scotch inspectors to be most free from disease generally are the Champion and the Magnum Bonum. Other varieties, however, such as The Bruce, Fortyfold, Dons, Sutton's, Rocks, Kidney, and Maincrop, are also placed in this category in certain reports.

In England the varieties pronounced most generally free, or disease-resisting, were the same as in Scotland, the Magnum Bonum being most frequently, and the Champion repeatedly mentioned. A longer list of other varieties appearing most free from disease in certain localities includes the following:—Maincrop, Early Rose, Abundance, Sutton's New Ashleaf Victoria, Early Puritan, Patterson's Victoria, Early White Beauty, Rocks, Snowdrop, Daniels, Imperator, Adirondack, The Bruce, Myatt's Prolific.

In view of the general concurrence of reports respecting the exceptional presence of disease only among the earlier varieties of the Potato, it may be pointed out that this may be not improbably ascribed to the period when the wet weather, to which the development of the disease was largely due, prevailed in the past summer. When the subject of Potato disease was examined by a Select Committee of the House of Commons in 1880, it was reported that among the essential conditions for the full development and rapid spread of the disease was the coincidence of moist weather with a particular stage of the growth of the plant.

Summing up at the conclusion, the report says:—The general result of the present inquiry appears to be, that no serious loss of the Potato crop in Great Britain from disease is to be apprehended, as the late or main crop is regarded as comparatively sound "*Times*," *Wednesday, October* 22.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

October 14.—Present: Mr. W. T. Thiselton Dyer, C.M.G., in the chair; Mr. McLachlan, Mr. Morris, Dr. Oliver, Mr. Veitch, Dr. Scott, Dr. Müller, and the Rev. G. Henslow (Hon. Sec.).

Plantain Fruit.—Mr. Morris exhibited two large fruits of Musa sapientum var. paradisiaca, or the common Plantain, grown at Syon House. It is generally used before it is quite ripe as a vegetable in the tropics. It practically takes the place of the Potato, and is a very valuable food, especially in tropical America.

Merulius lachrymans (?).—Dr. Oliver exhibited an interesting specimen of the mycelium of some fungus which had grown between two sheets of canvas. It had spread in a radiating manner, covering a space of about 8 inches square.

Antirrhinum majus, Monstrous.—Mr. Henslow showed a flower of the yellow Snapdragon, with narrow ribbon-like yellow and white out-growths from the calyx. Such enations are not uncommon from the outer surface of corollas, as in the fringed Cyclamen, Polyanthus, Gloxinia, &c.; but in the present instance they were detached from the inner surface of the calyx—*i.e.*, by tangential chorisis.

The Fog Report.—Dr. Oliver read a report as to the scheme proposed at the preliminary meeting. A discussion then followed as to the methods to be adopted, and it was suggested (1) that the Meteorological Society should be asked to lend a pump already used for the purpose; (2) to consult with Dr. Russell as to the construction of an absorbent apparatus; and (3) that a duplicate chamber with filters should be prepared for use at Kew. It is also proposed to re-issue circulars with an additional request as to the opacity of the fogs experienced.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending October 18, is furnished from the Meteorological Office:—

"The *weather* was at first quiet and dry over all the more central and southern parts of the United Kingdom, with thick fog in many places. After the 14th, however, squally, showery conditions spread

down from the northward, the amount of rainfall at some of the Scotch stations being considerable. Thunder and lightning were observed in many parts of England on the 15th and 16th, and aurora was seen in the west of Scotland on the night of the 17th.

"The *temperature* has been a little below the mean over England, but a little above in Ireland and Scotland. In all the more northern and eastern districts the highest readings were observed, as a rule, on the 12th, but in the south and south-west they occurred mainly on the 13th and 14th, the thermometer reaching 69° in 'Scotland, E.,' and the Midland Counties, 70° in 'England, S.,' and 'England, S.W.,' 71° in the 'Channel Islands,' and 72° in 'England, E.' The lowest readings which were observed at various times in the different districts ranged from 28° in the Midland Counties, to 36° in 'Scotland, N.' and 'England, N.E.,' 37° in 'England, N.W.' and 43° in the Channel Islands.

"The *rainfall* has been less than the average in all districts excepting the north and east of Scotland and the north of Ireland, where it has been either equal to or a little in excess of the normal.

"*Bright sunshine.*—The amount of sunshine has been large in all districts excepting 'Scotland, N.,' where the percentage of the possible duration has not exceeded 18. In other districts the percentage has varied from 34 in 'Ireland, N.,' to 53 in the Midland Counties and 'England, S.W.'"

By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending Oct. 18.	Accumulated. Above 42° for the Week.	Accumulated. Below 42° for the Week.	Accumulated. Above 42°, difference from Mean since Jan. 1, 1890.	Accumulated. Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1890.	Rainfall. Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	2 +	46	0	+ 181	— 85	2 +	208	44.2	18	25
2	3 +	48	0	+ 35	— 69	0 av.	172	24.8	42	30
3	1 +	53	0	+ 128	— 99	4 —	145	19.1	48	30
4	2 —	61	9	+ 50	— 35	2 —	143	18.4	52	38
5	1 —	55	7	+ 17	— 31	3 —	140	17.6	53	33
6	2 —	59	3	+ 27	— 69	5 —	138	21.2	45	36
7	2 +	55	0	+ 61	— 79	3 —	177	40.5	38	32
8	1 —	50	0	+ 105	— 83	2 —	165	26.5	36	30
9	1 —	64	0	— 21	+ 11	7 —	168	28.3	53	37
10	2 +	57	0	+ 78	— 60	0 av.	194	27.9	34	30
11	1 +	69	0	+ 86	— 17	5 —	180	31.3	39	33
12	1 —	85	0	+ 45	— 22	6 —	161	24.5	44	44

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

MARKETS.

COVENT GARDEN, October 23.

Business steady. Supplies generally good. Apples and Kent Cobs coming light. Little alteration in prices. *James Webber, Wholesale Apple Market.*

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, each	... ...	0 4– 0 6	Mushrooms, punnet	2 0– ...	
Beans, French, lb.	...	0 4– 0 6	Mustard and Cress, punnet	... ...	0 4– ...
Beet, red, per dozen		1 0– 2 0	Onions, per bunch	...	0 5– ...
Carrots, per bunch	...	0 6– ...	Peas, per quart	...	1 0– ...
Cauliflowers, each	...	0 3– ...	Parsley, per bunch	...	0 4– ...
Celery, per bundle	...	1 6– 2 0	Shallots, per lb.	...	0 6– ...
Cucumbers, each	...	0 4– 0 6	Spinach, per bushel	...	2 0– ...
Endive, per dozen	...	2 0– ...	Tomatos, per lb.	...	0 9– ...
Herbs, per bunch	...	0 4– ...	Turnips, per bunch, new	... ...	0 4– ...
Lettuces, per dozen	...	1 6– ...			

Potatos.—Our market is gradually getting more settled. Best samples of Magnums and Bruce, 80*s.* to 90*s.*; Snowdrops 85*s.* to 95*s.*; Imperators, 70*s.* to 80*s.*; ordinary and inferior samples, 45*s.* to 70*s.* Supplies not so heavy, and stock at Potato dépôts reduced this week. *J. B. Thomas.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples ½-sieve	...	3 6– 7 0	Melons, each	...	0 6 2 0
Cobs, Kent, 100 lb.	...	75 0–80 0	Peaches, dozen,	...	3 0–12 0
Grapes, lb.	...	0 9– 2 9	Pine-app'es, St. Michael, each	...	2 0– 6 0
Lemons, per case	..	20 0 40 0			

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.		6 0–18 0	Ericas, various, doz.		8 0–18 0
Aspidistra, doz.	...	18 0 42 0	Ferns, in var., doz		4 0–18 0
— speci. plants, each		7 6–10 6	Ficus elastica, each		1 6– 7 0
Asters, per doz.	...	4 0– 9 0	Foliage plants, various, each	... ...	0–10 0
Begonias, per doz.	...	4 0– 6 0	Fuchsia, per doz.	...	3 0– 6 0
Bouvardias, p. doz.		9 0–18 0	Heliotrope, per doz.		4 0– 6 0
Chrsanthem., p. doz.		4 0 18 0	Hydrangeas, doz.	...	9 0–18 0
— specimen plants, each	... ...	2 6– 5 0	Liliums, various, per dozen	... ...	9 0–18 0
Coleus, per dozen	...	2 0– 6 0	Marguerites, doz.	...	6 0–12 0
Cyperus, per dozen	...	4 0–12 0	Mignonette, per doz.		4 0– 6 0
Dracæna terminalis, per dozen	...	30 0–60 0	Palms in variety, each	... ...	2 6–21 0
— viridis, per doz.		12 0 24 0	Pelargoniums, scarlet, per dozen	...	3 0– 6 0
Euonymus, in var., per dozen	... ...	6 0 18 0	— per doz.	... ...	6 0–12 0
Evergreens, in var., per dozen	... ...	6 0–24 0	Solanums, per doz.	...	9 0–15 0

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	...	2 0– 4 0	Mignonette, 12 bun.		1 0– 3 0
Asters, 12 bunches	...	4 0– 9 0	Pelargoniums, scarlet, 12 spr.	... ...	0 4– 0 6
— French, bunch	...	1 0– 1 6	— dozen sprays	...	0 6– 0 9
Bouvardias, per bun.		0 6– 1 0	Primulas, double, 12 sprays	... ...	0 6– 1 0
Callaæthiopica, 12 bl.		4 0– 8 0	Poppies, various, doz. bunches	... ...	1 0– 2 0
Carnations, 12 blms.		1 0– 2 0	Pyrethrum, 12 bun.		2 0– 4 0
— 12 bunches	...	4 0– 6 0	Roses, Tea, per doz.		0 6– 1 6
Chrysanth., 12 bun.		3 0– 6 0	— coloured, dozen		1 0– 1 6
— 12 blooms	...	1 0– 3 0	— red, per 12 bun.		4 0– 9 0
Dahlias, 12 bun.	...	2 0– 4 0	— Safrano, dozen	...	1 0– 2 0
Eucharis, per dozen		4 0– 6 0	Stephanotis, 12 spr.		4 0– 6 0
Gardenias, 12 blooms		2 0– 4 0	Tuberoses, 12 blms.	...	0 3– 0 6
Gladiolus, 12 bun.	...	6 0–12 0	Violets, 12 bun.	...	1 0– 2 0
Heliotropes, 12 spr.		0 6– 1 0	— Parme, Fr., bun.		2 6– 3 6
Lilium, var., 12 bl.	...	0 6– 4 0	— dark, Fr., bun.	...	1 0– 1 6
Maiden Hair Fern, do		4 0– 9 0			
Marguerites, 12 bun.		3 0– 6 0			
Michaelmas Daisy, 12 bun.	... ...	4 0– 8 0			

Orchid-bloom in variety. Not over plentiful.

SEEDS.

London: *Oct.* 22.—Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, London, E.C., write that a quiet feeling now prevails in the seed trade. For the moment no large quantities of Clover seed are changing hands. It now appears that more English red will be saved than was at one time expected. French samples continue to meet with favour. Winter Tares are in fair request on former terms. In Rye there is no alteration. Blue Peas keep firm. Haricot Beans being good and cheap, sell freely. Mustard, both white and brown, is now very low. Rape and Linseed are steady. Bird seed slow.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending October 18 and for the corresponding period in last year:—1890, Wheat, 30*s.* 10*d.*; Barley, 29*s.* 7*d.*; Oats, 17*s.* 3*d.* 1889, Wheat, 29*s.* 10*d.*; Barley, 30*s.* 4*d.*; Oats, 16*s.* 4*d.*

FRUIT AND VEGETABLES.

Spitalfields: *October* 22.—Good supplies of all kinds of farm and market-garden produce; demand heavy. Fruit trade good for English, but dull for foreign fruit. Prices as follows: American Apples, 15*s.* to 28*s.* per barrel; English Apples, 4*s.* to 10*s.* per bushel; Pears, 3*s.* to 6*s.* 6*d.* per half-sieve; English Tomatos, 5*s.* to 6*s.* per peck; foreign do., 1*s.* 6*d.* to 4*s.* per box; Savoys, 2*s.* to 3*s.* 6*d.* per tally; Cabbages, 1*s.* to 2*s.* 6*d.* do.; Vegetable Marrows, 2*s.* 6*d.* to 4*s.* do.; Radishes, 2*s.* 6*d.* to 4*s.* do.; Cauliflowers, 3*s.* 6*d.* to 6*s.* 6*d.* do.; Brussels Sprouts, 1*s.* 6*d.* to 2*s.* 3*d.* per half-sieve; Spinach, 1*s.* 6*d.* to 2*s.* per bushel; Greens, 1*s.* 3*d.* to 2*s.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Carrots, 2*s.* 9*d.* to 3*s.* 6*d.* do.; Parsley, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Celery, 4*s.* to 10*s.* per dozen bundles; frame Cucumbers, 1*s.* 6*d.* to 3*s.* per dozen; Horseradish, 1*s.* 2*d.* to 1*s.* 4*d.* per bundle; Leeks, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen; Cos Lettuce, 10*d.* to 1*s.* 4*d.* per score; Mustard and Cress, 1*s.* 6*d.* to 2*s.* per dozen baskets; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; English Onions, 5*s.* to 5*s.* 6*d.* per cwt.; Spanish do., 6*s.* 6*d.* to 8*s.* per case; Dutch do., 2*s.* 9*d.* to 3*s.* 3*d.* per bag of 110 lb.; Belgian do., 2*s.* 6*d.* to 3*s.* do.; Carrots, 21*s.* to 50*s.* per ton; Beetroots, 3*d.* to 4*d.* per dozen.

Stratford: *October* 21.—The supply has been good, and a brisk trade done at the undermentioned prices:—Cabbages, 2*s.* to 4*s.* per tally; Savoys, 2*s.* 6*d.* to 4*s.* do.; Cauliflowers, 3*s.* 6*d.* to 6*s.* do.; Turnips, 20*s.* to 40*s.* per ton; Carrots, household, 45*s.* to 50*s.* do.; do., cattle feeding, 26*s.* to 32*s.* do.; Mangels, 16*s.* to 19*s.* do.; Swedes, 18*s.* to 20*s.* do.; Onions, English, 90*s.* to 110*s.* do.; do., Dutch, 4*s.* to 4*s.* 6*d.* per bag; Apples, English, 3*s.* to 7*s.* per basket; Watercress, 7*d.* per dozen; Celery, 7*s.* to 10*s.* per dozen rods; Walnuts, 4*s.* to 5*s.* per bag; Carrots, 2*s.* 6*d.* to 3*s.* per dozen bunches; Turnips, 3*s.* to 3*s.* 6*d.* do.; Dutch Apples, 14*s.* to 17*s.* per barrel.

POTATOS.

Borough and Spitalfields: *October* 21.—Quotations.—Hebrons, 60*s.* to 90*s.*; Regents, 50*s.* to 75*s.*; Magnums, 55*s.* to 80*s.*; Imperators, 55*s.* to 80*s.* per ton.

Spitalfields: *October* 22.—Quotations:—Early Rose, 50*s.* to 70*s.*; Victorias, 55*s.* to 90*s.*; Hebrons, 50*s.* to 80*s.*; Magnums, 45*s.* to 80*s.*; Regents, 50*s.* to 80*s.*; Imperators, 65*s.* to 90*s.* per ton.

Stratford: *October* 22.—Quotations:—Magnums, light, 55*s.* to 75*s.*; do., dark, 45*s.* to 50*s.*; Imperators, 50*s.* to 70*s.*; Hebrons, 60*s.* to 80*s.* per ton.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80*s.* to 105*s.*; do., inferior, 46*s.* to 75*s.*; hay, best, 60*s.* to 87*s.*; inferior do., 20*s.* to 50*s.*; and straw, 28*s.* to 40*s.* per ton.

ENQUIRIES.

"*He that questioneth much shall learn much.*"—Bacon.

Seeding of Maréchal Niel Rose.—For several years I have tried to obtain seeds of Maréchal Niel, but hitherto without any result until this year, when I found a flower to which pollen had been applied was followed by a hip which did not damp off, as all the others had done. This particular hip first got yellow, then brown, and on being opened it was found to contain six large seeds. The question that arises is, What chance is there of these seeds vegetating? also, has this variety of Rose been known to produce perfect seeds in this country? *P. F. A.*

Treatment of Starkia odoratissima.—I have a plant of Starkia odoratissima which makes strong growths—quite 5 feet long—but it never flowers. It is growing in a pot in the stove. If you, or any of your correspondents, could enlighten me as to the best way for treating it to make it flower, I should be greatly obliged. *J. H.*

White Banksia Rose Stock.—A correspondent, "P.F.A.," asks if there is anything unusual in a double white Banksia Rose stock that has a Maréchal Niel Rose budded on its stem, 3 feet from the ground, throwing up a Banksian sucker bearing thorns?

NOTICES TO CORRESPONDENTS.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

Banksia Rose Seeding: *P. F. A.* The double forms of Banksia Roses—white and yellow—set seeds, but very rarely in the open air in this country. The hip is smooth, globular, of the size of a Hawthorn hip, and black when dried.

Books: *F. S.* 1, *The Dictionary of Gardening* (Upcott Gill, 170, Strand, London, W.C.); 2, 3, and 4, *The Orchid Manual*, *Select Ferns*, and *Manual of Stove and Greenhouse Plants*, by the late B. S. Williams, Paradise and Victoria Nurseries, Upper Holloway, London, N.

Beurré Diel Pears: *Constant Reader.* Pick the fruits at intervals, as they become mature; store them in a cool fruit-room, and when required for table, place a few in a warm, dry cupboard, after wrapping each in paper. If the fruits are put into warmth a week previous to perfect maturity, they are more likely to be eatable than was the case

previously. Above all, do not gather any that do not part quite easily from the spur.

Chaumontel Pear: *H. O.* At the Guernsey Horticultural Society's show, May 1, 1834, a Mr. Baldock showed a dish of six fruits of this variety, grown against a wall, and the largest weighed 24 oz., and the whole dish 106 oz. A Mr. Langellier showed two which weighed 96 oz.

Double Leaf: *Broom-house.* Such cases are rather uncommon; they are due to the out-growth of one leaf from another.

Fig Trees on Back Wall of Peach House: *Constant Reader.* The Fig tree would bear and ripen fruit if it be not shaded by the Peach tree. If the Peach shades the lower part of the Fig tree, the upper part might be fruited, but its foliage will want close watching for red-spider. The Fig will scarcely be a success in the Vinery, owing to the too dense shade of the Vines.

Insects: *W. E.* The insects found after dark on Violets in frames, and not seen by day, are caterpillars of one of the Noctuidæ, difficult to determine in this state, but which we believe are a species of Hadena (H. contigua?). *I. O. W.*

Lawn a Bad Colour: *Constant Reader.* Read "Weeds on Lawns," in our Notices to Correspondents, on October 4. The remedy in your case is the same.

Marrow: *C. Eden.* Thanks; such faciations are not uncommon, and occur in many plants, Twenty feet is good length for a Marrow plant to grow.

Names of Fruits: *W. C. Green.* Apple Calville St. Sauveur.—*J. Pouncet.* New Hawthornden.—*M. Brodie.* 4, Rymer; 5, Reinette du Canada. Tickets were detached from the others; one, a large fruit, is Claygate Pearmain; another, small red, is Sops in Wine.—*A. W. S.* Pear Marie Louise.—*D. E* 1, Small Admirable; 2, Waltham Abbey Seedling; 4, Jolly Beggar; 5, Dutch Mignonne; 6, Bedfordshire Foundling.—*Thomas Trollope.* 1, 6, Tom Putt; 2, Claygate Pearmain; 4, Scarlet Russet; 5, Old Nonpareil.—*W. B.* 1, Duke of Beaufort; 3, Manx Codlin; others not recognised.—*G. Gale.* 1, Bramley's Seedling; 2, Warner's King; 3, Emperor Alexander; 4, Beauty of Kent; 6, Hanwell Souring; 7, Dumelow's Seedling; 9, King of the Pippins.—*W. H. Willett.* 1, Styrian; 2, Hampden's Bergamot.—*T. F. K.* 1, Brabant Bellefleur; 2, Mother; 3, Colonel Vaughan.—*J. Howe.* Pear Althorp Crassane.—*W. S. S.* 1, Warner's King; 2, Downton; 3, 4, King of the Pippins; 5, Rosemary Russet; 6, London Pippin; 7, Court Pendu Plat; 9, Worcester Pearmain; 10, Beauty of Kent.—*G. C. J.* 1, decayed; 2, Gansel's Bergamot; 3, Althorp Crassane; 4, Louise Bonne of Jersey.—*J. H.* 1, Duchesse d'Angoulême; 2, Passe Colmar; 3, Beurré Diel; 4, Louise Bonne of Jersey.—*Thomas Gooch.* Hawthornden.—*Fell & Co.* 2, Blenheim Orange; 3, Reinette du Canada; others not recognised.—*H. Farr.* 1, Mannington's Pearmain; 2, Brabant Bellefleur; others not recognised.—*D. S.* 1, King of the Pippins; 2, Dumelow's Seedling; 5, small Pear Beurré Superfin.—*A. B.* 1, Duchesse d'Angoulême; 2, Beurré Bachelier; 3, Van Mons. Léon le Clerc; remarkably fine specimens.

Names of Plants: *C. Howes.* 1, Cratægus crus galli var. prunifolia; 2, Cratægus orientalis; 3, Cratægus pyracantha.—*Southampton.* Ptelea trifoliata.—*E. E.* 1, Rodriguesia planifolia; 2, Epidendrum fragrans; 3, Cymbidium Mastersii. It is of ordinary value as a good showy Orchid.—*J. S. B.* A good form of Cattleya gigas. *Sent in small tin-box without letter.* Miltonia candida; the other pink-flowered specimen was too much withered. — *Enquirer.* Potentilla tormentilla.—*S. W.* 1, Ficus repens; 2, Bambusa Fortunei variegata; 3, Polypodium vulgare omnilacerum; 4, P. vulgare. — *J. Wilson.* Rubus fruticosus variegatus.—*G. Pressly.* Probably a Cactus, but we cannot tell from the scrap sent.—*L. F. P.* 1, Leycesteria formosa; 2, Berberis aristato; 3, Pernettya mucronata; 4, Cupressus sempervirens; 5, Cytisus scoparius; 6, Myrtus ugni; *R. W. T.* 1, Veronica parviflora var.?; 2, Ulmus campestris var.; 3, Euonymus latifolius; 4, Olearia Haastii; 5, Retinospora lycopodioides?; 6, Juniperus chinensis.—*J. P. W.* 1, Aster novæ-angliæ var. ruber; 2, A. novæ-angliæ. — *South Hants.* Libocedrus chilensis.—*C. Bellis* Phygelia capensis; Croton pictus; C. irregularis (narrow-leafed); Acalypha Macfeeana; Matricaria inodora flore-pleno; Tradescantia virginica; Chrysanthemum uliginosum; Spiræa callosa.—*C. H. Y.* 1, Hippophæ rhamnoides (Sea Buckthorn); 2, Biota orientalis var.; 3, Cotoneaster microphylla; 4 and 5, Viburnum opulus; 5, Rhus cotinus; 6, Abies pinsapo; 7, The Irish Yew; 8, Juniperus communis.—*B. G.* Quercus cerris var. Fulhamensis.

Narcissus Cyclamineus: *C. C. W.* It was figured on February 5, 1887, in the *Gardeners' Chronicle.*

Nitrate of Soda for Manure: *Joseph Harris.* Moreton Farm, Monroe County, New York.

Pear Leaves with "Scabs:" *A. M. B.* The leaves sent are thickly infested with a fungus named

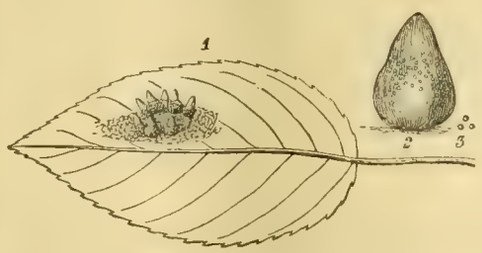


Fig. 97.—Pear disease: Rœstelia cancellata.

Rœstelia cancellata. The infection comes from spores carried in the air. (See fig. 97.)

Robinia Fast Growing: *H. T. E.* The tree of which you used the stem for fencing-posts at twelve years after planting, and which you name R. hispida var. Decaisneana, may have been R pseudo-Acacia var. Decaisneana. R. pseudo-Acacia is a very quick-growing, valuable tree, for carpenters' work, or as fuel. It requires careful tending when young, and the suckers which spring up from the roots should be dug up. R. hispida is a quick-growing shrub, with dark rose-coloured blossoms, but it may be grown in standard form by grafting it on R. pseudo-Acacia, but it is not fit for timber. Robinias, when young, want to have their main branches shortened back—or, rather, lightened—the whole of them being very liable to damage by wind. The pseudo-Acacias will do better than most other kinds of trees on sandy land, and the flowers make the best of bee-food. In planting Robinias on this kind of land, it should be dug over, and the soil in the bottom of the trench loosened and left *in situ*, the tree being planted in autumn or spring. The plants in poor soil should not be planted with nurse-trees, as that would tend to undue exhaustion of the soil, but in good land nurse-trees are allowable. If the trees stand, when planted, at 3 feet apart, it will be close enough. In four or five years, supposing three-year old seedlings or suckers of good strength have been planted, there will be need of a first thinning, which might consist of taking out each alternate plant in the rows. Another, some years later, may require the sacrifice of each alternate row, and the trees will need no further thinning before they attain a size fitting them for felling. The first thinning will furnish capital garden and hedge and hurdle-stakes, and the second thinning will be more useful still. In thinning Acacias, it is better to dig up the root-stock, if you do not wish to be plagued with suckers, which with their sharp thorns would almost prevent any passage through the wood. But when felled with axe, the stools may be left 1½ foot high, if a second crop of stems is looked for, or they may be as close to the ground as is convenient if the roots are to be grubbed. Alder or Poplar may be employed as shelter-trees on the side of the wood that was most exposed, and a few might be distributed through plantation. Slow-growing trees would be smothered.

Seeds: *X. Y. Z.* The large one is Entada scandens, a leguminous plant common in tropical countries. The small one is Mucuna—perhaps M. urens—also a tropical leguminous plant.

Snails, Slugs, &c., in Suburban Garden: *A Subscriber.* Diligently strew fresh-slaked lime over the soil between the crops after nightfall. Many of the creatures may be caught by laying Cabbage-leaves about, and examining them daily; or small heaps of bran may be used instead. Slight dressings of salt and gas-lime are useful as a dressing, to be left on the surface or dug in. Ducks, fowls, and gulls, are of great assistance in clearing land of slugs, but you must not then employ gas-lime. Encourage thrushes and blackbirds.

Starch in the Potato: *A. P.* Grate the tuber, macerate the pulp for twenty-four hours in water, pour off the water, and wash the residuum of starch repeatedly until the various salts, &c., are freed from the starch, which should be allowed to settle each time before pouring off the water.

Table Decorations: *J. W. G.* There is a small book by Annie Hassard, called *Floral Decorations for Dwelling Houses.* (Macmillan.)

Thistles and Nettles in Grass Land: *Nettles.* Digging the roots out whenever any of the plants appear is the best means of getting rid of Nettles. After digging out the roots of the Nettles, constant cutting of the tops will weaken the plants; but nothing short of good cultivation of the soil as arable will extirpate them. Thistles may be killed by cutting the plant just under the surface, and putting a few drops of vitrol on the top of the root.

Tomatos: *G. R. E.* See Book Notice in the present issue of *Gardener's Chronicle.*

Vine Border: *F. H.* Get Mr. Barron's book on *Vines and Vine Culture*, published at 171, Fleet Street, E.C.

Violet: *Viola.* The Russian Violet, or a variety of it.

CATALOGUES RECEIVED.

Howden & Co., Muirtown, Inverness, N.B.—Nursery Stock.

Paul & Son, Old Nurseries, Cheshunt, Herts — Roses.

Charles Turner, Royal Nurseries, Slough—Roses, Fruit Trees, and Nursery Stock.

Herm. A. Hesse, Weener, Ems, Hanover — Wholesale List of Trees.

Frank Cant, Braiswick Nursery, Colchester—Roses.

Rovelli Bros., Pallanza, Lac Majeur, Italy—Seeds of Conifers and Other Trees.

Heinrich Strauss, Cologne, Germany — Orchids, Seedling Palms, &c.

James Walters, Mount Radford Nurseries, Exeter —Roses.

H. Cannell & Sons, Swanley, Kent — Winter Catalogue.

W. Drummond & Sons, 58, Dawson Street, Dublin—Dutch Flower Roots.

J. W. Wilson, South Cave, East Yorkshire — Old-fashioned Hardy Perennials.

Wm. Paul & Son, Waltham Cross, Herts—Roses.

Damman & Co, San Giovanni a Teduccio, near Naples, Italy—Wholesale Seed List.

Jarman & Co., Chard, Somersetshire—Autumn List.

V. H. Hallock & Son, Queens, New York, U.S.A. —Autumn Bulbs and Plants.

J. R. Pearson & Sons, Chilwell Nurseries, Notts—Hardy Fruits.

L. Späth, Rixdorf, Berlin—Wholesale List of Trees.

Eugène Verdier fils Aîne, 37, Rue Clisson, Paris —Gladiolus.

A. M. C. Jongkindt-Coninck, Dedemsvaart, near Zwolle, Holland—Wholesale List of Plants.

Communications Received.—Viola, Bath (It is not to be had now, we will give fuller particulars next week).—Miss Blackwood.—R. D. F.—J. L.—W. R.—C. S. S., Boston.—J. R. J.—H. E.—D. H. S.—T. B. H.—J. R.—H. C., Geneva. W. R.—S. H.—W. S.—P. L. G.—W. M.—Dr. Ritzema Bos, Wageningen.—G. W.—P. M'O., Cape Town—C W. D. —W. P. S.—C. H. H.—C. N.—J. H.—F. S.—W. W.—C. de B.—W. W., Kew.—J. C. F.—W. S.—Oetzmann & Co.—Miss Horuby (next week).—G. G. H.—J. W.—J. C. & Co.—S. F. W.—C. F. S.—Erdmann & Schauz.—T. B.—J. J. W. (in a day or two).—J. B.—P. B.—W. E.—E. W. & Sons.—W. C. (shortly).—W. S.—J. T.—T. S.—E. Mawley and J. Webber (next week).—J. M.—H. W. W.—W. A. C.—E. S.

Photographs Received.—J. L. & S.—P. Blair.—R. M. R.—J. A.—W. C.—W. N.—R. A. R.—D. B. C. (a gall insect, see our next issue.)

DIED, recently, H. J. Hardy, of the Stour Valley Seed Grounds, Bures.

Publications Received. — *Hood's Comic Annual* (London: 153, Fleet Street).—*Stevens' Book of the Farm*, new edition, by J. Macdonald, Div. V. (Edinburgh and London: W. Blackwood & Sons.)—*Les Arbres Fruitiers*, by G. Ad. Bellair. (Paris: J. B. Baillière & Son, 19, Rue Hautefeuille.)

ANTHONY WATERER invites an inspection from intending Planters to the following well-grown TREES, having stout, straight stems, fine heads, and splendid roots, all having been transplanted within two years:—

ACACIA BESSONIANA, 12 to 14 feet.
ACER DASYCARPUM, 12 to 20 feet.
,, ,, WIERII LACINIATA, 10 to 14 feet.
,, NEGUNDO VARIEGATA, Standards, 8 to 10 feet.
,, REITENBACHII, 12 to 14 feet.
,, SCHWEDLERII, 12 to 16 feet.
,, WORLEYII, 12 to 14 feet.
ASH, Mountain, 12 to 14 feet.
BEECH, Common, 10 to 12 feet.
,, Purple, Pyramids, and Standards, 10 to 20 feet.
BIRCH, Silver, 12 to 14 feet.
CERASUS SEROTINA, 12 to 14 feet.
CHESTNUTS, Horse, 14 to 16 feet.
,, ,, Double White, 10 to 16 feet.
,, ,, Scarlet, 12 to 18 feet.
,, Spanish, 12 feet.
ELMS, English, 10 to 12 feet.
,, Guernsey, 10 to 12 feet.
LIMES, 12 to 16, and 20 feet.
,, EUCHLORA, 12 to 14 feet.
,, Silver-leaved, 10 to 14 feet.
LIQUIDAMBER, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 10 to 14 feet.
,, Scarlet American, 12 to 14 feet.
PLANES, 12 to 16 feet.
POPLAR CANADENSIS NOVA (the true variety), 12 to [16 feet.
SYCAMORE, Common, 14 to 16 feet.
,, Purple, 14 to 16 feet.
THORNS, Double Scarlet, 8 to 10 feet.
,, White, 8 to 10 feet.
TULIP TREES, 10 feet.
WALNUTS, Common, 10 to 12 feet.

WEEPING TREES.

BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
,, Weeping, Purple, Pyramids, and Standards, 7 to 12 feet.
BIRCH, Young's Weeping, Pyramids, and Standards, 8 to
,, Cut-leaved Weeping, 10 to 12 feet. [14 feet.
ELMS, Weeping, Pyramids, and Standards, 7 to 14 feet.
LARCH, Weeping, Pyramids, 6 to 10 feet.
POPLAR, Weeping, Pyramids, and Standards, 10 to 12 feet.

Knap Hill Nursery, Woking, Surrey.

Evergreen Hedges.—Evergreen Hedges.

JOHN PERKINS AND SON offer:—
ENGLISH YEWS, 3 to 4 feet, 100*s.* per 100.
THUJA LOBBII, 3 to 4 feet, 70*s.* per 100.
Fine bushy stuff, all recently transplanted, good fibrous roots.
The Old Established Nursery and Seed Business, 52, Market Square, Northampton.
Telegraphic Address—"QUICK, Northampton"

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BULBS OF FINEST QUALITY for all seasons, including many rare and beautiful Bulbs and Tubers.
DAFFODIL CATALOGUE, contains the only complete collection of these beautiful hardy spring flowers, with a List of cheap and showy sorts for large plantings.
PLANT CATALOGUE, describing the best Hardy Herbaceous Perennials for Borders, Rockwork, and Cutting.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

CARNATION Gloire de Nancy, and old CLOVES.—Splendid rooted layers, post-free, 6 for 2*s.*, 12 for 3*s.* 6*d.*; 24 for 7*s.* Catalogues of Bulbs, Fruit Trees, and Shrubs, post free.
E. ABBOTT, Railway Nursery, Ardleigh, Colchester, Essex.

"WINTER" OR "CODLIN" MOTH PREVENTATIVE

As recommended by Miss ORMEROD and Others.

Now is the time to apply our Composition for preventing the wingless female Codlin or Winter Moth from ascending the trunks of Fruit Trees to deposit its eggs.

Price, 36*s.* per cwt.

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Patent DISTRIBUTOR,
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PRICE LISTS AND TESTIMONIALS ON APPLICATION.

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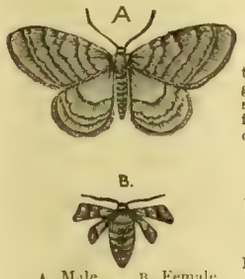
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BACHELOR'S WALK, DUBLIN.—*Discount for Cash.*

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For CATERPILLAR BLIGHT.

OCTOBER IS THE BEST MONTH TO APPLY IT.



A. Male. B. Female. WINTER MOTH.

"Cherry Gardens, Lenham Heath, Maidstone,
"January 20, 1890.
"DEAR SIR,—I am pleased to tell you your Tree Dressing gave me great satisfaction in sticking the Winter Moth. I found a great many on the dressing in November.
"Yours truly,
"J. B. HARRIS.
"W. Horne."

Write for particulars and price.

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PERRY HILL, CLIFFE,
Near ROCHESTER.

ORCHID PEAT, PEAT MOULD, &c.

QUALITY THE VERY FINEST.
(All sacks included.)

	Per sack.	5 sacks for	Truck loads of 10 yds. and upwards loose, free on rail, per yard.
Best selected Brown Fibrous Peat for **Orchids**	4 6	20 -	14 -
2nd quality do. do.	4 -	18 -	12 -
Best Brown Fibrous PEAT for **Rhododendrons, Azaleas, Heaths, Ferns,** &c.	3 6	15/-	10/-
2nd quality do. do.	3 -	12 6	8
Superior Peat Mould do. ...	2 6	10 -	—
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The above prices subject to 2 - a yard reduction to purchasers of 4 yards and upwards bringing own carts to wood; a day's notice requested. Special terms quoted for carting within 15 miles of Bexley, according to distance.
Terms strictly cash with order. Send Postal Order for Sample Sack. Further particulars on application to

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For Green and Black Fly, American Blight, Camellia Scale, Red Spider, Mealy Bug, Brown and White Scale, Worms, Wood Lice, &c.

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SAFE—ECONOMICAL—EFFECTUAL.

15, PRINCES STREET, EDINBURGH, *July* 15, 1887.—"Dear Sirs, I have thoroughly tested a sample of a new Insecticide which you were so good to send me. At the rate of 1 oz. to a gallon of water at a temperature of 95°, I find it kills Green Fly immediately. Double this strength, or 2 oz. to a gallon at 120°, seals the fate of Scale of all sorts in a few seconds; while 3 oz. to gallon at same temperature effectually dissolves Mealy Bug, and so far as I have yet observed, without the slightest injury to leaf or flower, and it is withal a most agreeable compound to work with. All our insect remedies are applied through common syringe, or garden engine, a much severer test of efficiency than when applied by hand-washing or spray.—I remain, dear sirs, yours truly. (Signed) A. MACKENZIE," of Messrs. Methven & Sons.

Victoria and Paradise Nurseries, Upper Holloway, London, *January* 7, 1888. "GENTLEMEN—I have given your Insecticide, 'Picrena,' a good trial in competition with many others. I am pleased to say that I have found it to be more effectual in destroying Mealy Bug and other insects than anything we have ever used. It ought to command a good sale. (Signed) B. S. WILLIAMS."

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DUNCAN, FLOCKHART & CO., Chemists to the Queen, Edinburgh.

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SPECIAL for Orchids, Choice Plants, Hardwooded and Fern do., and Rhododendrons. Excellent LEAF-MOULD, SAND, Rich LOAM, PEAT-MOULD, CHARCOAL, COCOA FIBRE, SPHAGNUM, and all GARDEN SUNDRIES. PEAT MOSS LITTER.—EPPS & CO., The Peat Dépôt, Ringwood, Hants.

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PEAT, for forming Rhododendron, Bog, and American Plant Beds, 21*s* per Ton, or £4 4*s.* per Truck of 4 tons.
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ALL HARD BRACKEN FIBRE SELECTED TURVES, 10*s.* per cask.
Prepared ready for use; no waste whatever, all pure fibre. 12*s.* per cask; second quality, 2*s.* per cask less.

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COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* 4*d.* each; 10 sacks, 12*s.* 6*d.*; 15 sacks, 17*s.* 6*d.*, 20 sacks, 20*s.*; 25 sacks, 24*s.*; 30 sacks, 27*s.*; 40 sacks, 35*s.*; 50 sacks, 40*s.*; Truck-load, loose, free on rail, 30*s.* Limited quantities of G., special quality, granulated in sacks only, 2*s.* 6*d.* each.
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SPECIALITE TOBACCO PAPER, 10*d.* per lb., 28 lb. for 21*s.*
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is the best, and has achieved more success than any other Spawn in the world, *vide* Press Notices and recent Testimonials, *with dates*, from leading authorities throughout the Kingdom. Price, 6*s.* per bushel of sixteen cakes, the largest ever offered (*cases and packing free*).

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THE CHEAPEST—SUREST—SAFEST

Liquid Insecticide is LEMON OIL. Post-free, pints, 1*s.* 10*d.*; quarts, 3*s.* 3*d.*; half gallons, 5*s.* 9*d.*

EUCHARIS MITE KILLER has saved thousands of bulbs. Post-free, half pints, 1*s.* 9*d.*; pints, 2*s.* 9*d.*; quarts, 4*s.* 9*d.*; half gallons, 8*s.*

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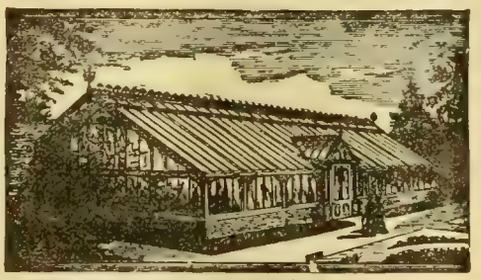
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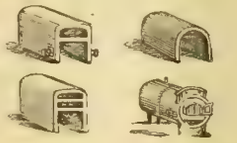
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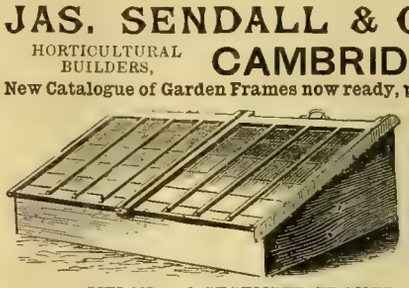
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1-Light Frame,	6 feet by 4 feet	2	0	0
2 ,, ,,	6 feet by 4 feet	2	0	0
2 ,, ,,	8 feet by 5 feet	2	15	0
2 ,, ,,	8 feet by 6 feet	3	0	0
3 ,, ,,	12 feet by 6 feet	4	4	0
4 ,, ,,	16 feet by 6 feet	5	8	0
PIT LIGHTS.	6 feet by 4 feet, painted and glazed ...	0	14	0
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TERMINAL END SADDLE BOILERS.	2 ft. 6 in. long	7	0	0
	3 ft. 0 in. ,,	8	5	0
	4 ft. 0 in. ,,	11	10	0

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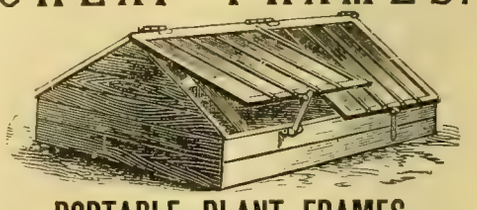


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6 feet long, 3 feet wide	Packing Cases FREE.	2	0	0
6 feet ,, 4 feet ,,		2	10	0
12 feet ,, 4 feet ,,		4	7	6
6 feet ,, 5 feet ,,		3	10	0
12 feet ,, 5 feet ,.		5	17	6

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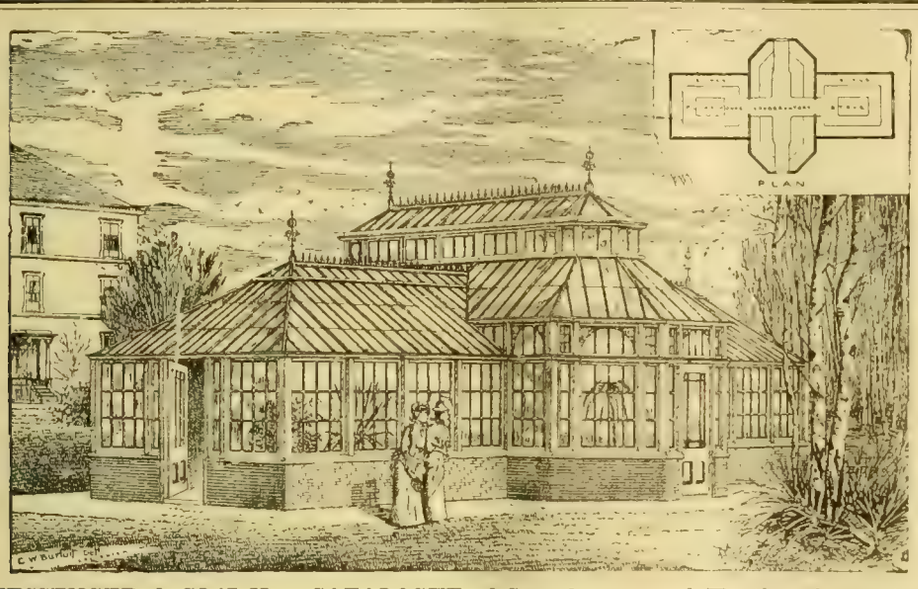
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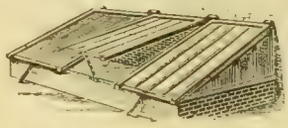
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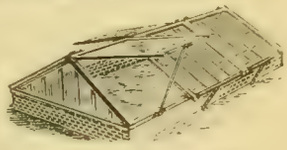


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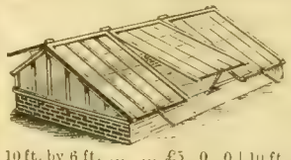
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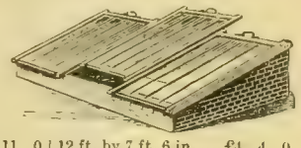


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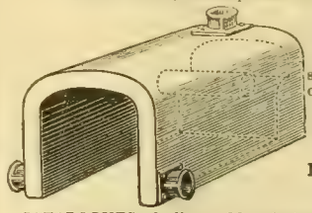
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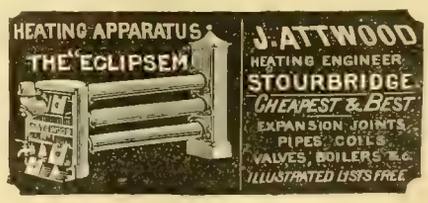


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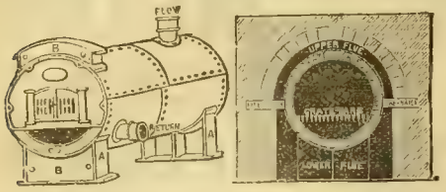
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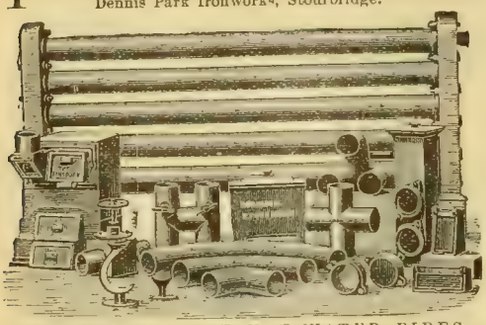
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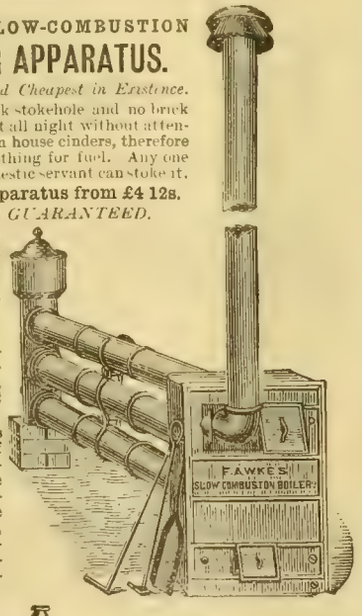
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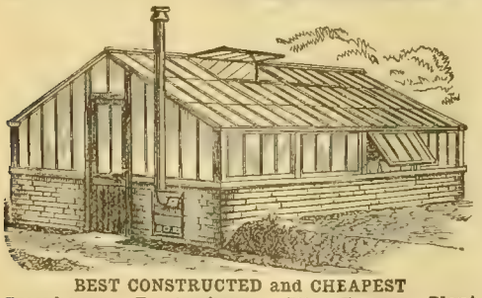
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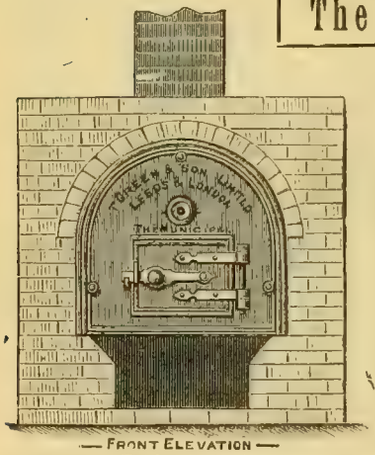
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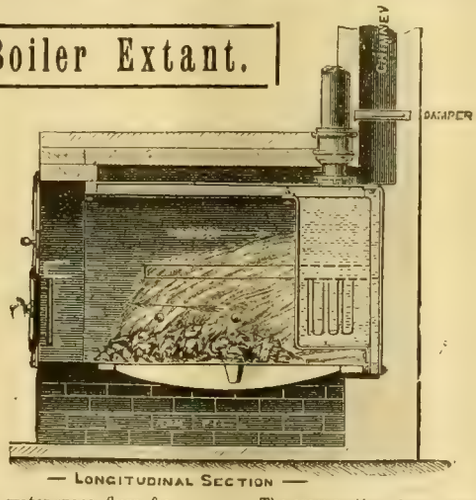
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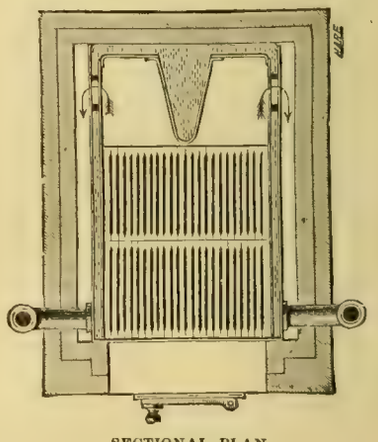
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CRYSTAL PALACE.
GRAND EXHIBITION of CHRYSANTHEMUMS, FRIDAY and SATURDAY, Nov. 7 and 8. Entries close October 31. Schedules on application to Mr. W. G. HEAD, Superintendent Gardens Department, Crystal Palace, S.E.

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On view morning of Sale, and Catalogues had.

Dutch Bulbs.

GREAT UNRESERVED SALES.
Four times Weekly.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, all received direct for Unreserved Sale, and lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Bagshot, Surrey.

HIGHLY IMPORTANT SALE of beautifully-grown NURSERY STOCK, by order of Messrs. John Waterer & Sons.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the celebrated Bagshot Nurseries, Bagshot, Surrey, within ten minutes' walk of the station, on MONDAY NEXT, November 3, and three following days, at 12 o Clock precisely each day, several acres of NURSERY STOCK grown to the greatest perfection:—5000 Conifers in rich assortment, consisting of Cupressus, Thuias, Abies, Piceas, Retinosporas, &c.; 6000 Evergreens, 2 to 6 feet, comprising Variegated and Green Hollies, Yews, Box, Portugal and Common Laurels; 5000 Rhododendrons, embracing all the choicest varieties in cultivation; fine standard Limes, 10,000 Spruce Firs, 2 to 3 feet, and numerous other Stock. Bagshot Station being situate on the property facilities are presented for the conveyance of purchases, and Messrs. J. Waterer & Sons will undertake to dispatch any goods bought at the Sale, simply charging for the time and labour incurred.

The Stock may be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tottenham, N.

GREAT ANNUAL SALE of NURSERY STOCK, HERBACEOUS PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Hale Farm Nurseries, Tottenham, N., adjoining the Hale Ry. Station, G.E. Ry., on TUESDAY NEXT, November 4, at 11 o'Clock precisely, in consequence of the large number of lots, by order of Mr. T. S. Ware, an immense quantity of NURSERY STOCK, HERBACEOUS PLANTS, &c. (for the growth of which these Nurseries are so celebrated), consisting of 25 000 Climbers of the very best saleable varieties, 80,000 extra strong Seakale, exceptionally fine stuff; 5000 Ligustrum ovalifolium, 3000 Christmas Roses, 5000 Hollyhocks of an exceptionally fine strain; 25,000 Carnations and Picotees, including all the finest varieties in cultivation; 100,000 Berlin crowns Lily of the Valley in the finest possible condition; 10,000 Ornamental Trees and Shrubs, Standard and Dwarf Roses in great variety, 100,000 Forcing Plants and Bulbs in endless variety, and a grand lot of home grown Lilies.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Tuesday Next.

10,000 LILIUM AURATUM and other LILIES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, November 4, at half-past 12 o'Clock precisely, 10,000 LILIUM AURATUM, received direct; also a portion of the extensive collection of finest-grown LILIES, from Mr. W. Gordon, of Twickenham, including L. Humboldtii, L. Washingtonianum, L. umbellatum, and L. elegans; choice Japanese IRIS, and various HARDY BULBS.

On view morning of Sale, and Catalogues had.

Tuesday Next.

10,000 LILIUM AURATUM.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE on TUESDAY NEXT.

On view morning of Sale, and Catalogues had.

Wednesday Next.

SPIRÆA JAPONICA, AZALEAS, CAMELLIAS, and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, November 5, at half-past 11 o'Clock to the minute, 300 AZALEA INDICA, 200 A. MOLLIS, 100 CAMELLIAS, and OTHER PLANTS, from the Continent; Spiræa japonica, in splendid condition; Stephanotis floribunda and Cyclamen persicum; Palms; Dutch Bulbs; a fine selection of Narcissus from a private grower; Hardy Bulbs; and 5000 African Tuberoses, just received in fine condition.

On view morning of Sale, and Catalogues had.

Friday Next, November 7.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 7, at half-past 12 o'Clock precisely, a large assortment of Established and Imported ORCHIDS; also a quantity in flower.

On view morning of Sale, and Catalogues had.

Exeter.

SIX DAYS' UNRESERVED SALE of exceptionally well-grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Exeter Nurseries, Exeter, on MONDAY, November 10, and five following days, at 12 o'Clock precisely each day, without the slightest reserve, by order of Messrs. Lucombe, Pince & Co., whose lease shortly expires, the particularly well-grown NURSERY STOCK, comprising 20,000 Fruit Trees, 15,000 Standard, Dwarf, and Pot Roses, 50,000 Conifers and Evergreens, 900 Fruiting and Planting Vines, 600 Hybrid Rhododendrons, 1000 Lucombe Oaks in pots, 12,000 Ferns of sorts, 4000 Palms, 6500 Heaths, several thousands of Azaleas, Bouvardias, Camellias, Clematis, Cyclamen, and numerous other stock.

The Stock may be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Sale of the renowned Collection of Orchids formed by the late E. Harvey, Esq., of Aigburth, near Liverpool.

MESSRS. PROTHEROE AND MORRIS have been favoured with instructions from the Executors of the late E. Harvey, Esq., to SELL by AUCTION, on the Premises, at Aigburth, near Liverpool, on TUESDAY and WEDNESDAY, November 11 and 12, at 12 o'Clock precisely each day, the whole of the renowned COLLECTION of ESTABLISHED ORCHIDS, amongst which will be found the following fine plants:—

Lælia anceps Dawsonii
" " stella
" " alba
" " Williamsii
" " Amesiana
" " Prothero-ana
" præstans var. nova
" Gouldiana
" elegans Wolstenholmiæ
" " alba
" " Blenheimensis
" Philbrickiana
Lycaste Skinneri alba
Dendrobium Statteriana
" Phalænopsis
" nobile Cooksoni
" " Sanderiana
" " nobilius
" Leechianum
" chrysodiscus
" splendidissimum
" Griffithianum
Cœlogyne cristata alba
" Massangeana
" Dayana
Cypripedium œnanthum superbum
" Charles Canham
" Sallieri
" vexillarium grandiflorum
" caudatum Wallisii
" Barleti
" Argus Moensi
" vernixium
" Harrisianum superbum
" Morganiæ
" " Burfordiense
" Hornianum
" Leeanum superbum
" tesselatum porphyreum
" Mastersianum
" Euryandrum
" orphanum
Cypripedium politum
" superbiens
" tonsum
" Niobe (new)
" superciliare
" Parishi
" Saundersianum (rare)
" Arthurianum
" Horsmanni
" Lemoinierii
" Sedeni candidulum
" Schrœderi
" Ashburtoniæ
" expansum
" Crossianum
Maxillaria Sanderiana
Odontoglossum aspersum
" crispum Maudeanum
" lyroglossum
" Chestertoni
" Andersonianum
" vexillarium superbum
" " Chelsoniense
Miltonia Moreliana
Oncidium macranthum
Cattleya Trianæ Backhouseiana
" " Diadem
" Mendeli varieties
" Wagneri
" Reineckiana
" Exoniensis
" Skinneri alba
" crispa, fine plants
" labiata, autumn flowering
Cymbidium Lowi
" eburneum
" Mastersianum
Vanda cœrulea
" Sanderiana
" Lowi or Renanthera Lowi
Angræcum sesquipedale

Also a quantity of Miscellaneous PLANTS and BULBS.

On view any day prior to the Sale. Catalogues had of the GARDENER, on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Cooksbridge, Sussex.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mrs. F. Wollard to SELL by AUCTION, on the Premises, the Cooksbridge Nursery, two minutes' walk from Cooksbridge Station, and 2½ miles from Lewes, Sussex, on FRIDAY, November 14, 1890, at 11 for 12 o'Clock precisely, a quantity of valuable and well-grown NURSERY STOCK, consisting of thousands of Specimen and Border Shrubs; 1000 Ornamental Trees; 500 large Aucubas, 3 to 5 feet; 1500 Common and Portugal Laurels, 4 to 7 feet, bushy, and well-prepared for moving; 1500 Standard, Pyramid, and Dwarf-trained Fruit Trees; a quantity of Currants and Gooseberries; 5000 well-grown Standard, Dwarf, and Climbing Roses; 500 large clumps Herbaceous Plants.

May be viewed any day prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Stamford Hill.

IMPORTANT SALE of DECORATIVE PLANTS and GENERAL NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Sampson to SELL by AUCTION, on the Premises, the Stamford Hill Nurseries, Amhurst Park, N., adjoining Stamford Hill Station, G.E.Ry., on SATURDAY, November 15, 1890, at 11 o'Clock precisely, 10,000 Hardy DECORATIVE PLANTS, including Palms, Dracænas, Aspidistras, Aralias, Phormiums, Ferns, &c; several unique SPECIMEN PLANTS, 50 large CAMELLIAS, 1000 CHRYSANTHEMUMS in Flower and Bud, 1000 dwarf ROSES, a quantity of Hardy CLIMBERS, 5000 Evergreen and Flowering SHRUBS, and Ornamental TREES; a large quantity of fine MUSCAT GRAPES, ready for gathering; a good Saddle BOILER, heap of Manure, Tiles, &c.

On view any day prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Preliminary Notice.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, "Woodlands," Clarence Road, Clapham Park, S.W., on MONDAY and TUESDAY November 17 and 18 (and not on November 5 and 6, as announced last week), the whole of the valuable COLLECTION of ESTABLISHED ORCHIDS, by order of F. P. Leon, Esq., who is relinquishing the growth of Orchids on account of his removal to Town.

Full particulars will appear next week.

Leytonstone and Wanstead.

ABSOLUTE CLEARANCE SALE.—Land required for Building Purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The American Nurseries, adjoining Leytonstone Station, G. E Ry., and also at the branch Nursery, Wanstead Flats, on TUESDAY, WEDNESDAY, and THURSDAY, November 18, 19, and 20, 1890, at 12 o'Clock precisely each day, the Second Portion of the valuable NURSERY STOCK, comprising 50,000 Evergreens, thousands of choice Coniferæ 3000 finest Rhododendrons, 4000 Laurels, 2000 Retinospora plumosa aurea, Gold and Silver Hollies, Pines, thousands of Deciduous Shrubs, 8000 Standard and Dwarf Roses, selected Fruit Trees, thousands of Poplars, clean grown Limes, 1000 fine Planes for Street Planting, and numerous other Stock.

May be viewed any day (Sundays excepted) prior to the Sale. Catalogues had at the respective Nurseries, and at 67 and 68, Cheapside, E.C. The Wanstead Nursery is for Disposal. Particulars may be had of the Auctioneers.

Winchcombe, Gloucester.

IMPORTANT CLEARANCE SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Toddington Orchard Company, Winchcombe, R.S.O., Gloucester, near to the Beckford Station, Great Western Ry., on THURSDAY, November 20, 1890, at 12 o'Clock precisely, the valuable thriving NURSERY STOCK, comprising 1000 Mountain Ash, Wellingtonias, and Laurels; 3000 Box, a quantity of Yews, Poplars, Araucarias, and Laurustinus; 20,000 Fruit Trees, including 7000 Standard and Pyramid Apples, comprising 3000 Lord Suffield, a large number of Cox's Orange Pippin and Pomona, Warner's King, and others; 6000 Red Currants, Raby Castle, and various other Stock.

On view any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Leamington.

SALE OF WELL-GROWN NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Leamington Nursery, Leamington, on FRIDAY, November 21, 1890, at 12 o'Clock precisely, a portion of the beautifully-grown NURSERY STOCK, comprising 2000 Coniferæ and other Shrubs, 2000 Hollies, 2000 Aucubas, 3000 Thuia Lobbi and Golden Yews, 1000 well grown Cupressus Fraseri, a large quantity of Laurels, Yews, &c, and numerous other Stock.

On view any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Cambridge Villa, Cambridge Park, Twickenham.

Within a few minutes' walk of Richmond Station.

To HORTICULTURISTS, FLORISTS, and GARDENERS.

MR. F. PIGGOTT will SELL by AUCTION, on the Premises as above, on THURSDAY NEXT, November 6, 1890, at 12 o'Clock precisely, the rare and beautiful collection of valuable specimen TROPICAL PALMS, ORCHIDS, and other HOTHOUSE PLANTS, comprising fine Palms, including a large Latana borbonica, a Chamærops excelsa and two Dracænas, Orange Trees, Cocoanut Palm, about 20 fine Camellias, and many Azaleas, Rhododendrons, Begonias, Gladioli, Lilium auratum, Gloxinias, Cannas, Cacti, Ficus elastica, Aspidistras, Acmenaorata, Stephanotis, Myrtles, Amaryllis, Achimenes, Fuchsias, Geraniums, Cactus, Dahlias, Australian Horsetail, Grevillea robusta, Ruvenas, three Stove Climbers (purple flower), one large Bougainvillea speciosa, quantity of Ferns and Grasses; 14-inch Mowing Machine, by Green; six Garden Seats, Garden Table, two Ladders, Garden Hose and Wheel, and other useful effects.

May be viewed day prior to Sale, and Catalogues obtained of the Gardener, on the Premises, and of the Auctioneer, at his Offices, George Street, Richmond, Surrey.

Every Thursday.—Dutch Bulbs.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY NEXT, and every THURSDAY throughout the season, at half-past 11 o'Clock A M., large consignments of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland; also Roman HYACINTHS and Paper White NARCISSUS. Lotted to suit all buyers.

On view morning of Sale, and Catalogues had.

On WEDNESDAY and FRIDAY EVENINGS, at half-past 5 o'Clock, SALES of Choice CUT FLOWERS. Entries invited.

Nursery Stock Sales conducted and Valuations made.

Auction Rooms and Offices, 6, Phillips Street, Birmingham.

Manchester.

IMPORTANT SALE of a VALUABLE COLLECTION of about 1100 first-class ESTABLISHED ORCHIDACEOUS PLANTS, comprising over 700 exceedingly fine Cattleyas and Lælias, embracing many fine specimens of the rarest varieties; over 150 Dendrobiums, grand specimens of the choicest sorts, particularly Brymerianum and Wardianum, the former illustrated in the *Orchid Album*, and are the finest lot ever submitted to public competition; 250 Oncidiums, Cypripediums, Cœlogynes, Pleiones, and other assorted ORCHIDS; the whole are remarkably well-grown, in exceptionally fine and strong condition, and notably free from insect or deleterious matter.

MESSRS. ARTINGSTALL AND HIND respectfully notify the receipt of peremptory instructions from Mr. Wrigley to SELL by AUCTION, on WEDNESDAY, November 5, commencing at 11 o'Clock prompt, in a large Marquee, which will be erected in the grounds of Victoria House, Dukinfield, Cheshire, the entire contents of his DENDROBIUM, ONCIDIUM, and CATTLEYA HOUSES.

The whole may be publicly viewed on November 3 and 4, from 10 to 4 o'Clock each day, and on the morning of Sale, when detailed Catalogues may then be had, or earlier, together with further particulars, on application personally or by post, from the HEAD GARDENER, at the above residence, or from the Auctioneers, No. 45, Princess Street, Manchester.

ORCHARD LAND.—Full of fine Fruit Trees, in splendid condition, close to Hampton Station, containing about 4½ acres, well adapted for Market Gardeners, Florists, &c., or would make a most desirable site for Building Purposes. Price to an immediate Purchaser, including all the choice Fruit Trees, £325 per acre. Large portion may remain on mortgage, if desired.

Mr. JOHN EMBLETON, Suffolk House, Hampton Hill.

FOR SALE, a SEED, FLORIST, and NURSERY BUSINESS in Yorkshire. The Nursery contains 3 Plant Houses, and 2 deep Pits heated with hot water, and a number of cold Pits, together with 5 Acres of good Nursery Land well stocked.

There is a good trade done in each department, and it will prove a splendid business for a retiring Gardener.

The disposers can give most satisfactory reasons why disposing, and to a likely man, will offer most liberal terms.

Address, M. A., 41, Wellington Street, Strand, London, W.C.

Bath (near).

FOR DISPOSAL, a NURSERY, Cut Flowers, and Fruit Business, with Dwelling-house, Glasshouses, Stock, &c., at Valuation.

Apply, POWELL AND POWELL, Union Street, Bath.

To Nurserymen.

FOR SALE, the Business and Stock-in-Trade of an OLD ESTABLISHED NURSERY in an Agricultural District in the West of England. Suitable opening for an energetic man. Incoming moderate. Dwelling House, Outbuildings, Greenhouses, and 10 acres of good Nursery Ground.

For particulars and to view, apply, H. HERBERT SMITH, Bowood, Calne, Wilts.

LAND for HORTICULTURISTS.

TO BE LET, on specially favourable long leases.

TO BE SOLD, on liberal system of deferred payments.

TO BE SOLD forthwith, 3-4ths price remaining at 4 per cent.

Excellent for soil, water, and railway.

Apply to Mr. F. J. CULLIS, F.G.S., Marling Park Estate, Hampton-on-Thames.

TO BE SOLD, or LET, January 1 next, a first-class SEED, FLORIST, and FRUIT BUSINESS combined. A handsome well-fitted shop in one of the most thriving towns in South Wales. Illness sole cause of changing.

Apply, W., Messrs. NUTTING AND SONS, 106, Southwark Street, London, S.E.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

Landscape Gardening.

MR. ARTHUR M. KETTLEWELL, LANDSCAPE GARDENER, having great experience in all matters pertaining to the artistic arrangement or re-arrangement of Grounds, IS READY TO UNDERTAKE the Designing and Laying-out of Private or Public Gardens, Parks, Cemeteries, &c. Send for his Manual on the "Art of Landscape Gardening," excellently reviewed by nearly all the leading Gardening Papers, post-free, 7*d*.

Address, Titley House, Titley (R.S.O.), Herefordshire.

ORCHIDS.

BRAZILIAN ORCHIDS supplied to the Trade in large or small quantities.

CATALOGUES and particulars on application.

A. H. GRIMSDITCH (Importer), 5, Clayton Square, Liverpool.

Sole Agent for CARLOS TRAVASSOS, Rio de Janeiro.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

NEW DESCRIPTIVE PRICED CATALOGUE

Post-free on application to

THE VINEYARD AND NURSERIES,

GARSTON, near LIVERPOOL.

FOR SALE, 2000 GENISTAS in 5-inch pots, surplus stock. Any reasonable offer will be accepted for the lot, as it is for want of room. Prices for small quantities on application. Bushy plants. — T. BALDWIN AND SON, Edith Nursery, Burchell Road, Leyton.

PRICED LIST ON APPLICATION.

SUTTON'S BULBS

GENUINE ONLY DIRECT FROM READING.

All Bulbs value 5s. and upwards Carriage Free.

PLANTING SEASON.

HARDILY-GROWN

FOREST, FRUIT,

& ALL OTHER

TREES & PLANTS,

EVERGREENS, ROSES, &c.

NURSERIES 400 ACRES.

VERY EXTENSIVE STOCK. Inspection Invited.

Priced Catalogues Gratis & Post Free.

DICKSONS (LIMITED) **THE NURSERIES CHESTER.**

CANT'S

Post-free on application to BENJAMIN R. CANT, COLCHESTER.

NEW ROSE CATALOGUE

The best and most reliable Descriptive List ever published.

THE VERY BEST **BULBS** AT LOWEST RATES.

LARGE & VARIED COLLECTIONS OF

HYACINTHS, TULIPS, CROCUSES, SNOWDROPS, NARCISSI, LILLIES, &c.

All thoroughly ripened and in excellent condition for planting.

Illustrated Descriptive Catalogue, No. 384.

POST FREE ON APPLICATION.

DICKSONS Bulb Growers **CHESTER**

KENT COUNTY CHRYSANTHEMUM SOCIETY.

The THIRD ANNUAL EXHIBITION of CHRYSANTHEMUMS will be held in the Rink, Blackheath (opposite S. E. R. Station), on TUESDAY and WEDNESDAY, November 4 and 5, 1890. Over ONE HUNDRED and THIRTY-FIVE POUNDS in Money Prizes and Silver Cups. Special "Centenary" Class:—48 Blooms, 24 Japanese and 24 Incurved, distinct. 1st Prize, Silver Cup (value £10) and £8; 2nd Prize, £6; 3rd Prize, £4; 4th Prize, £2. Schedules, Entry Forms, &c., gratis of

H. A. NEEDS, Hon. Sec.

49, Ringstead Road, Catford, S.E.

THE ASCOT, SUNNINGHILL, SUNNINGDALE and DISTRICT HORTICULTURAL SOCIETY.

SEVENTH ANNUAL EXHIBITION of CHRYSANTHEMUMS, &c., at the Grand Stand, Ascot (by kind permission of the Trustees), on

THURSDAY and FRIDAY, November 6 and 7, 1890.

For Schedules or information as to Open Prizes, apply to

F. PATTON, Hon. Sec.

The Links, Ascot.

KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY. President, G. C. SHERRARD, Esq., J.P.

The FOURTEENTH GRAND SHOW of CHRYSANTHEMUMS, FRUIT, &c., will be held in the Drill Hall, Kingston-on-Thames, on TUESDAY and WEDNESDAY, November 11 and 12, 1890, when, in addition to Valuable Money Prizes, the Sixth Champion Challenge Vase, value 25 guineas, will be offered. Entries close November 6. Schedules, and other information, may be obtained from

Mr. GEO. WOODGATE, Hon. Sec.

Warren House Gardens, Kingston Hill, Surrey.

LEEDS PAXTON SOCIETY'S CHRYSANTHEMUM SHOW, Town Hall, Leeds, TUESDAY and WEDNESDAY, November 11 and 12, 1890. Upwards of ONE HUNDRED and SEVENTY POUNDS in PRIZES, including two valuable Silver Challenge Cups.

Open Class, 36 Chrysanthemum Blooms, not less than 16 Incurved and 16 Japanese, distinct varieties: First Prize, Silver Challenge Cup, value 15 guineas, according to rule, and £3 cash; Second Prize, £6; Third Prize, £3; Fourth Prize, 30*s*.

JOSEPH SMITH, Hon. Sec.

Asket Hill, Leeds.

NATIONAL CHRYSANTHEMUM SOCIETY.

GREAT CENTENARY CHRYSANTHEMUM FÊTE and DISPLAY, at the Royal Aquarium, Westminster, TUESDAY, WEDNESDAY, THURSDAY and FRIDAY, November 11, 12, 13, and 14, 1890. FIVE HUNDRED POUNDS offered in MONEY PRIZES, Plate, and Medals, including the—

Centenary class for 48 blooms of Chrysanthemums, 24 Incurved and 24 Japanese, distinct. 1st prize, £25; 2nd, £20; 3rd, £15; 4th, £10; 5th, £5. Classes for all types of Chrysanthemums, Table Decorations, Fruit and Vegetables.

A Bronze Centenary Medal will be awarded to every competitor in certain leading classes.

Entries must be received not later than the morning of Saturday, November 8. Schedules of prizes and all information can be obtained of

RICHARD DEAN, Hon. Sec. and Superintendent.

Frampton Park Nurseries, Hackney, London, N.E.

BIRMINGHAM

CHRYSANTHEMUM EXHIBITION.

OPEN TO ALL ENGLAND.

NOVEMBER 12 *and* 13, 1890.

£235 in Prizes, including the following:—

48 CUT BLOOMS, £20, £15, £10, £5, £3, £2.

GROUP of CHRYSANTHEMUMS, £10, £6, £4, £2.

GRAPES, 6 Bunches, £5, £3, £2.

Other Prizes in proportion. Entries Close November 5.

Schedules post-free on application.

J. HUGHES, Secretary.

Northwood Villas, Metchley Lane, Harborne, Birmingham.

SCOTTISH HORTICULTURAL ASSOCIATION.

CHRYSANTHEMUM EXHIBITION and WINTER FRUIT and FLOWER SHOW, Waverley Market, Edinburgh, NOVEMBER 20, 21, and 22, 1890. Prizes to nearly FOUR HUNDRED POUNDS in Money and Plate, including City of Edinburgh Prize value £20. Schedules, and all particulars, on application to R. B. FERGUSON, Secretary.

6, South St. Andrew Street, Edinburgh.

GRAND FLORAL FÊTE, York, JUNE 17, 18, and 19, 1891.

PRIZES—SIX HUNDRED POUNDS. Schedules ready in January. Apply to CHAS. W. SIMMONS, Secretary.

13, New Street, York.

Chrysanthemum Show.

OUR ANNUAL EXHIBITION, now acknowledged to be the finest Trade Show in the country, will open on MONDAY, November 3. Admission until 1 P.M. free; 1 to dusk, 6*d*. each. Railway Station—Beeston, Midland Ry.

J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

SEAKALE for Forcing.—Superior Selected Crowns, 75*s*. per 1000; under 500, 8*s*. 6*d*. per 100. Cash with Orders. RHUBARB ROOTS and RHUBARB SEED of all varieties. Price on application.

ALFRED ATWOOD, Grower, 21, Shillington Street, Battersea, S.W.

FOR SALE, 400 dwarf GLOIRE DE DIJON, at 30*s*. per 100; also 1500 LA GRIFF STOCKS, at 30*s*. per 1000. Cash with order.—ROCK AND SON, Swinfen, Lichfield.

RUMSEY'S ROSES are strong, healthy, and well-rooted. Standards, Dwarfs, and Pot-plants, by the dozen, 100, or 1000. Priced Descriptive Catalogue free.
W. RUMSEY, Joyning's Nurseries, Waltham Cross, N.

FOR PLEASURE AND PROFIT.

FRUIT. Nothing so profitable and easy to grow. 74 Acres in stock.
See CATALOGUE for simple Instructions and kinds of Trees to suit all soils.

ROSES. 20 Acres. Bushes, 8s. per dozen; 60s. per 100.
STANDARDS, our selection, 21s. per dozen, 140s. per 100.
☞ *Packing and Carriage Free for Cash with Order.*
ROSES IN POTS, from 15s. per dozen.
ORNAMENTAL TREES, 91 Acres.
4 Acres of Glass.
CLEMATIS (80,000), 12s., 18s., and 24s. doz.
SEEDS & BULBS. Vegetable, Flower, and Farm.
Descriptive LISTS free.

RICHARD SMITH & CO., WORCESTER.

PEACHES AND NECTARINES,
WELL-RIPENED CLEAN TREES,
TRUE TO NAME.
GEORGE BUNYARD & CO.
Have a grand lot this season, both of Dwarf Fan Trees and riders, with stems 2 to 6 feet, of all the leading kinds, having escaped the frost; also Fruiting Trees in pots for orchard house.
THE "OLD" NURSERIES, MAIDSTONE.

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THE GARDENERS' CHRONICLE,
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 1, 1890.

BELGROVE, QUEENSTOWN.

RIGHT on the eastern shore of the island of Queenstown, co. Cork, is the residence of Mr. W. E. Gumbleton, an enthusiastic horticultural amateur. The situation is most charming, on the slope of a hill, which runs down with a rather steep gradient from the plainly-built house to the shore, which is washed by the waters of Cork Harbour. There is only a narrow channel just here, as directly opposite rises a promontory of the mainland, with richly-wooded slopes, which serve in no small degree as a shelter from the winds. Having arrived at Queenstown railway station from Cork, I proceeded for another 5 miles on an outside car, on which you may sit with a fair amount of comfort after a little practice. There are two roads by which Belgrove may be reached, the one closely following the shores of the island, while the other is laid more inland. The former although the longer, is, perhaps, preferable from a traveller's point of view, as beautiful views across the large and picturesque harbour are continually presented. You can see the cut leading to Drake's Pool, where the English admiral whose name it bears hid his fleet when he was chased by the Spaniards; and you may chance to see one of the American liners in the middle of the harbour, perhaps, waiting for or delivering the mail bags which travel to and from Queenstown by rail.

Entering Mr. Gumbleton's estate, you pass across a meadow, and then enter the home park. The pathway is a ledge on the side of a glen, and down below you a rapidly-flowing stream rushes on to the sea. As you enter, on the right-hand side is a lake where the Water Lilies flourish and bloom profusely; an island in the centre is covered with Bamboos, which grow with astonishing vigour, as indeed do most things. Eleven varieties or species are represented, but the handsome B. Simonii attracts notice by its elegance and robust growth, attaining a height of 20 feet, and the charming B. Metake (Arundinaria), growing beside it, attains a height of 11 feet. Bamboo stems make good fishing-rods, and so the boys

of the neighbourhood discovered; consequently, something had to be done to protect the plants. Mr. Gumbleton accordingly built a swing-bridge, which is drawn round to the margin of the lake, and locked to a post, and since then the Bamboos have grown unmolested, but it will not be long before severe thinning must be done, as now there is hardly room for further growth. Gunnera manicata is planted on the edge, and around the margin of the lake are the double-flowered Sagittaria sagittifolia and Saxifraga peltata.

Numerous interesting trees and shrubs are to be found on both sides of the pathway along the glen, and on the ascending side is a rich carpeting of Hypericum calycinum, which at times is gay with a profusion of golden flowers. Halesia hispida (Pterostyrax) was laden with its fruits, covered with stiff hairs, which follow the racemes of pretty white flowers. Eugenia apiculata was still in flower in September, the pure white being well displayed by the numerous rich dark green leaves. There are specimens of Griselinia littoralis and G. macrophylla, which may be ranked as intermediate in general appearance between the former and G. lucida, which has larger leaves, and is not hardy at this place. The bright flowers of Desfontainea Hookeri now attract attention, and further on is what has been a grand standard specimen, some 32 feet high, of Embothrium coccineum, but which died last year after having produced flowers in great profusion; what a gorgeous spectacle it must have been! but it stands now as a melancholy monument of what it was. Stachyurus præcox, which is grown in the temperate-house at Kew, does well here in the open; it belongs to the Tea Camellia family, and bears catkins of greenish-yellow flowers in the spring. It is a rarely-seen shrub interesting botanically. Garrya elliptica, in its male and female forms, is to be observed, and the chameleon-like Hydrangea rosalba, which opens white, becomes rose-coloured, and then, turning its lower face up, becomes white once more. Oreodaphne californica, with its strongly-scented leaves —a tree which in California attains a height of 100 feet — is represented by a specimen as yet only 17 feet high. In Euonymus fimbriatus is an elegant shrub, described as half-hardy, but here quite hardy; the ovate leaves are fringed with long serratures, which are very characteristic; the young shoots are bright red, and as the plant grows amidst a mass of dark foliage, the effect is very pleasing. The genus Berberis has good representatives, among them being B. trifurcata, a very handsome shrub, attaining a height of 6 feet; the graceful elegance recalls B. nepalensis, and the three-forked apex of the leaflets seems to be an exaggeration of what occurs to that species. Then there is B. japonica, its leaves 1 foot long, with large sessile leaflets 3 inches in length; and also its variety, B. Bealei, which is often substituted for the type, and, very distinct from these, a plant under the name of B. Thunbergi, a low bush, with leaves which become a beautiful red where the sun strikes them, and the bright red fruit which is borne in abundance aids its beauty in no small degree. Such, then, are a few of the trees lo be noticed along the drive, and which afford ample evidence of the equable temperature enjoyed.

The zonal Pelargonium is now the pet of Mr. Gumbleton, and in the small greenhouse attached to his residence, he has a collection of the most extreme developments of this popular plant. The best double red is Mr. Gladstone, a very profuse flowerer; Noblesse, rosy-puce, is a bright single-flowered variety sent out by Ryder, and is distinct in colour; Bridesmaid, pink, with a rosy flush, is equally pretty. H. Cannell, jun., is a very fine dark-coloured flower, measuring 2 inches across; and W. E. Gumbleton is another of similar appearance, very bright, although dark; Freya is a fine scarlet-red, and Tendresse, a delicate double pink. In P. aureo-perfectum—which should rather be called Golden Perfection—is a flower of a salmon-orange shade, very bright and novel; it has a fine truss, borne on a small newly-rooted cutting. Love Gold is of a similar colour, more red, it is true, and has a better flower so far as form and size goes. Mr. Gumbleton hopes to be able to show a true yellow zonal soon, and why not? Of white-eyed forms, Jeanne d'Arc, deep crimson and white, is a very fine flower; and Jacques Calot, the best of the light rose-edged section; Crimson Gem is a beautiful red with a white eye; and Saturn, crimson-carmine with a red blotch on the two upper petals, must be recorded as a distinct and striking novelty from America. Of Ivy-leaved Pelargoniums, Souvenir de Charles Turner, is the best; and in Madame Mougeot is a dwarf-growing variety with upright habit, and fine crimson-rose flowers—it is a decided acquisition.

Of other occupants of this house, the tuberous Begonia is the most important, but the finer show is to be seen in the adjoining flower garden, which, while of no great size, is replete with gems. The beds are of various shapes, are cut out in a lawn, and each bed is devoted to one class of plants; thus new varieties of Begonias, Verbenas, Ageratums, Gladioli, &c., appear side by side, where comparisons can easily be made, for that is the main object of Mr. Gumbleton's cultures; only the latest varieties are to be seen here. But the beds of Begonias! flowering in such profusion as almost to hide the foliage; no wonder that in such a climate they, with all their shades of red and yellow, were taken in hand at Belgrove and treated as bedders, ousting the zonal Pelargoniums, large specimens of which, in and around Queenstown, may be seen growing in the open air, where they have remained undisturbed and uninjured for over ten years, and so mild are the winters, that children of twelve years of age have yet to see snow for the first time.

It is mainly, if indeed not solely, due to the exertions of the master of Belgrove, that the tuberous Begonia, as an outdoor plant for bedding, was introduced to notice. "I am the apostle of the Begonia," said Mr. Gumbleton to me while walking round the flower-garden; but beautiful as was the display of these plants, I was informed that the singles had not done so well this year as for several seasons previous, while the doubles, however, had surpassed themselves in the profusion of large, solid flowers. Crousse's Source d'Or is here considered to be the best double yellow extant; it is very pure and bright, and the petals elegantly fimbriate. In Fleur d'Automne, a hybrid of the Octipetala × Lemoinei race, is a fine, free-flowering variety, partaking strongly of the first-named parent in the long, numerous petals; the colour is rose-mottled on a whitish ground, and is representative of a new race of single hybrids. Sanglant maintains a front place for its intense colour. Mistress Hall and Triomphe de Nancy are also good. Of the current year's novelties which are on trial, the following find favour:—Camille Flammarion, salmon with rose flush, nearly 5 inches across, a very fine double flower; La France, delicate pink, with finely-curled petals; Caprice, white, with rose-flushed edge; Picotee, soft yellow and red edge; Beauty of Belgrove, the same colour as Rose La France, deeper on the outer petals; Mrs. Lynch, salmon-flesh; Normandie, fine rose; Ruhm von Erfurt, intense scarlet. Among the yellow varieties—Mrs. Jenkins, a flower 6 inches across; Toison d'Or, very rich; and Hamlet, creamy-white, are all very fine, of compact dwarf habit, and very free flowering.

Gladioli were almost over, but bore evidences of past beauty. It was in this garden that the brightly-coloured members of the Nanceianus race of Lemoinean hybrids were tested, and with such gratifying results, and a critical review of the several varieties which I saw, appeared from Mr. Gumbleton's pen in your issue for October 4. Baudin was rich scarlet, very showy; and Venus de Milo is a capital white. Among other subjects in this well-filled flower garden, only a few can be enumerated, such as Scabious Rouge Sang Semi-nain—what a name! with deep claret-red flower heads. Coprosma Baueri variegata was bedded out, being hardy during the summer, but it will not stand the slightest frost, Antholyza paniculata, was full of flower; the brilliant Lobelia cardinalis var. Firefly, which occupied a bed to itself, made a gorgeous display; Sweet Peas; Crocosma aurea imperialis, a variety with very large flowers, and well named; Colchicum Byzantinum and Rosa rugosa, red, white, and pink, in flower and fruit, all helped to produce a wealth of colour beyond description. In a border under the wall of the house, the Belladonna Lily was making vigorous growth, and close by were fine masses of Crinum Powelli×, the result of crossing C. Moorei with C. capense, but all three forms of this cross are grown here — one with deep rose flowers borne on tall scapes, while those having respectively pale pink and pure white flowers only, attain a height of 3 feet. Here, too, was C. Moorei, the leaves of which are not eaten by the slugs, whereas those of C. Powelli are much disfigured—why? And growing close at hand is a collection of Ageratums, among which Simon Delaux was remarkable for its dwarf habit.

Another piece of evidence as to the genial climate enjoyed, was seen in the pink-flowered Star of Bethlehem, Asphodelus acaulis, a distinct species which comes from Algiers, and was figured in the *Bot. Mag.*, t. 7004, when it was stated that, owing to its growing on the southern borders of Algiers, it did not often get enough heat in England to flower well; but however that may be, if does well in South Ireland, and with Mr. Gumbleton it is in perfection in the middle of winter, although at Kew it does not flower till May.

Among those plants which are now on trial, mention may be made of Kniphofias, and some very showy forms are included. K. Uvaria Pfitzeri was perhaps the best of all, with a good solid lead of rose-scarlet flowers without any trace of yellow at the base of the florets. Henry Cannell is similar, but darker; nobilis pallida, yellow, with scarlet tips. There is a distinct form in one of the deciduous or Leichtlini section named Cinnabarina, in which the floral organs project conspicuously from the perianth, which is bright red, and the whole lead about 4 inches long. K. Sandersi is like a fiery torch, and K. Northiana has its beauty as a foliage plant, bearing leaves 3 feet long and 6 inches across. These plants are placed in a row, and border the top of a sloping meadow, which stretches from the residence to the waters of the harbour below, variety being given here and there by a fine specimen Pampas-grass, with a profusion of its handsome feathery plumes—and a beautiful clump of G. jubatum, the most distinctly beautiful but least hardy of all, was nearly lost in 1880 by the cold; or by Eulalia gracillima univittata, with gracefully curved slender leaves, having a white line traversing the centre of each; and Beschornera glauca with bold stiff, glaucous, foliage, resembling in habit a Yucca. It has proved to be quite hardy. A plant of the rarely seen Chrysobactron Rossi (= Anthericum), which grows to a height of about 2 or 3 feet, is also to be seen here, and its yellow flowers were this autumn produced in this garden for the first time in Europe, as it is believed.

The collection of trees and shrubs through which one passes to the kitchen gardens and orchard land, is enriched by several rarities, and is remarkable for its comprehensiveness. The kitchen garden is well kept, and is cropped heavily, and every now and then, in an odd corner, some noteworthy plant is to be found: thus we come upon Nymphæa Marliacea in the water-tank; in a border close by, Clematis Davidiana shows a profusion of pale lilac-blue flowers; and in a neighbouring house among several interesting plants is Dimorphotheca graminifolia, rare, but not beautiful.

In another spot, under the shelter of a line of Pittosporum Magi, is a plant of Eucalyptus citriodora, the leaves of which are covered with short red hairs, and emit a scent like that of the Lemon Verbena when lightly rubbed. The following particulars concerning this plant may be of interest: last year, at the commencement of the summer, it was planted out, and at

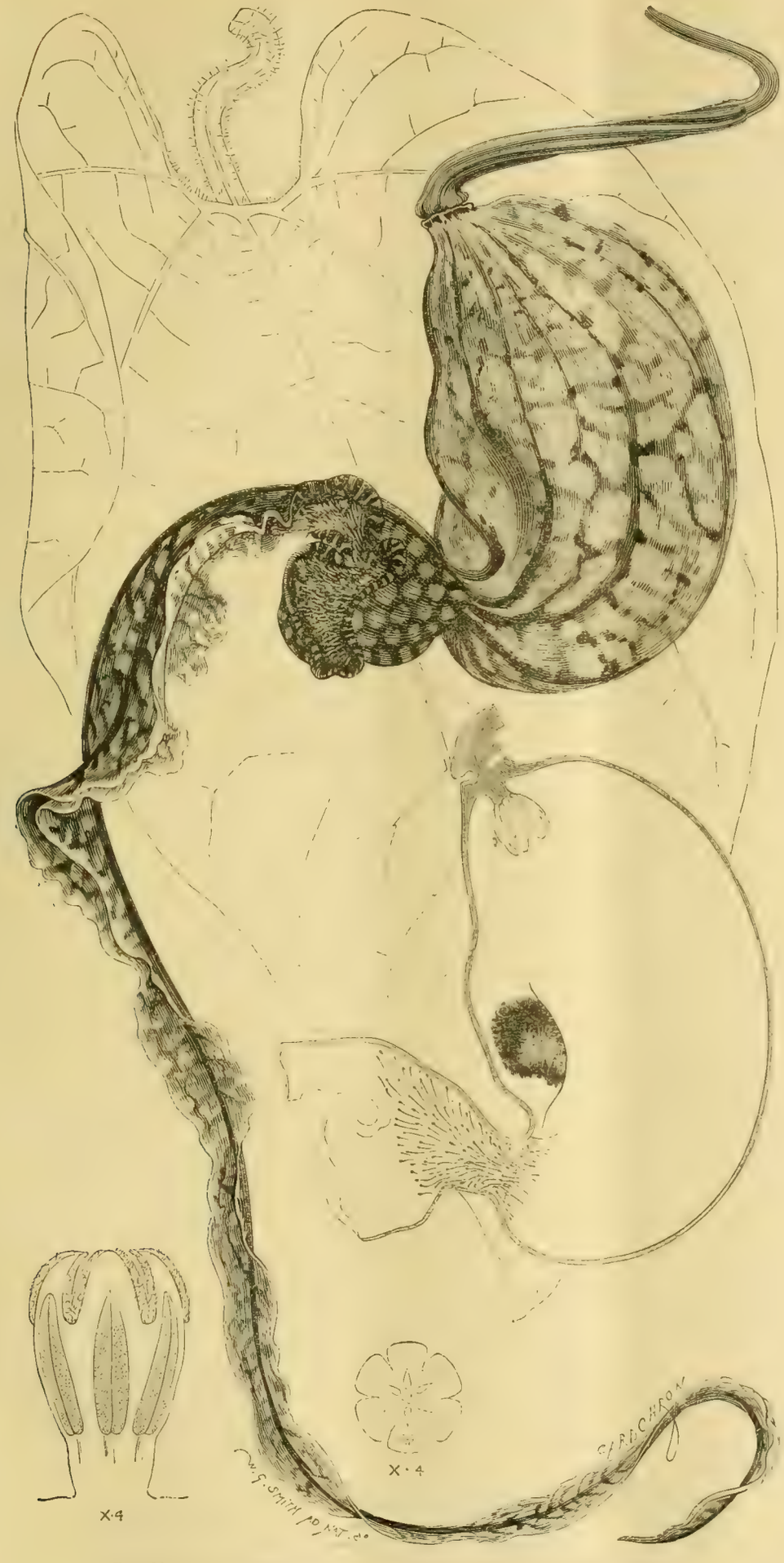


Fig. 98.—Aristolochia longecaudata: leaf, flower, and floral details:—

Colour of flower, cream, striped and marbled with deep velvety-purple. Section of flower, showing mechanism for fertilisation, all real size. Column magnified 4 diam.

the end of the season the leaves were smooth and leathery, and without scent. Mr. Gumbleton then left the plant to take its chance through the winter, and it was cut back by the first mild frost; fresh shoots were put forth this year, and the scented leaves once more appeared. Not far off, and in a very sheltered corner, are Abutilon vitifolium and its var. alba, Sphæralcea nutans, and Carpenteria californica, which makes fine growth, but does not flower; also Eucryphia pinnatifida and Notospartium Carmichaeliæ.

A summary of the plants in the collection of trees, &c., already referred to must now suffice. Parrottia persica, with its half-creeping habit, looked well with its richly-coloured foliage of red and brown, being well set off by its neighbour, Golden Hodgens Holly; Idesia polycarpa, Daphniphyllum glaucescens Olearia ilicifolia, Plagianthus Lyalli (which, however, is not happy), Castanea chrysophylla, Corokia cotoneaster, which looks more like a dead withered bush than a thing in its prime; Hamamelis Zuccarini, Azara microphylla, Adenocarpus decorticans, Rhus Osbeckii, Ptelea trifoliata var. aurea, and Leptospermum grandiflorum, a mass 12 feet across, is to be seen beside it. The lovely Hypericum oblongifolium (= Hookeri) looked bright with its red-crimson leaves and fine yellow flowers, the bush 2½ feet high; and the smaller-leaved H. nepalense was by its side. There are Olearia stellulata and O. Gunni, the leaves of which are narrower and longer; and on the wall which encloses the kitchen garden flourished vigorous samples of Ceanothus velutinus, Habrothamnus Newelli, H. fasciculatis, Xanthoceras sorbifolia, Wisteria sinensis, and the longer-racemed W. multijuga; and mention must also be made of Rhododendron Keysi, which has rich orange-coloured flowers of tubular form, like those of a Correa.

It will be understood from the above that Belgrove is stocked with objects of interest, and one follows on another with such rapid succession, and Mr. Gumbleton has the history of each ready for you, that it is with a certain sense of relief that you at last hear him say, "And that is all I have to show you; good morning."

New or Noteworthy Plants.

Aristolochia longecaudata, *Masters.**

We originally described this plant from dried specimens collected in British Guiana by Appun and Jenman, and it is only lately that we have had the opportunity of seeing a fresh specimen, cultivated by Mr. Todd, of North Cray, who brought the plant from Demerara. It is a handsome species of the unilabiate group, in which the solitary lip of the flower is prolonged into a very long tail. The leaves are leathery, five-nerved, cordate, entire, and densely setose on the under surface, glabrous above.

The flower, which is well shown in Mr. Worthington Smith's drawing, is cream-coloured, the net-like veins marked out in deep purple. The drawing sufficiently shows the botanical details, but we may call attention to the mouth and funnel-shaped throat of the flower at the top of the distended portion of the tube, and which is of a deep velvety-purple colour, covered with course white hairs or setæ, bulbous at the base, and with the points all directed downwards towards the bottom of the flower, where is placed the column consisting of the stamens in union with the styles. A cut through the flower lengthwise shows these hairs, and also one of two dark cushion-like pads projecting from the upper part of the swollen tube. Obviously these arrangements have reference to the fertilisation of the flower by means of insects, and Mr. Jenman, or other observers in Guiana, would do good service by observing what are the insects which effect the fertilisation of the flower, and how they do it.

* *Aristolochia longecaudata*, Masters, in *Martius' and Eichler Flora Brasiliensis* (Aristolochiaceæ), p. 84.

In this country, we can only look upon it as an ornamental stove creeper, and as such we may safely commend it to the notice of the curious as one of the most distinct and handsome of its race. *M. T. M.*

Sobralia Sanderæ, *Rolfe, n. sp.**

This is a very handsome Sobralia, introduced from Central America by Messrs. F. Sander & Co., of St. Albans, and which flowered in their establishment a short time ago. It is allied to S. leucoxantha, Rchb. f., and S. xantholeuca, Rchb. f. The flowers are larger than in the former, and without the orange markings in the throat, while they are paler in colour than in the latter, and somewhat smaller. There are also certain differences in shape from both, so that I feel compelled to consider it a distinct species. The flowers are 3½ inches long, pale sulphur-white in colour, with the throat of the lip of a bright clear yellow—thus being both large and handsome. It is dedicated by request to Mrs. Sander. *R. A. Rolfe, Herbarium, Kew.*

PLUMS FOR MARKET.†

In the few practical remarks that I am about to make, it is not at all necessary for me to decide from what part of the globe we first obtained our cultivated Plums, whether from America, Asia Minor, or if they were found wild in Europe; this can be best determined by our botanical friends. I consider the Plum next in importance to the Apple in a commercial point of view. In seasons of plenty they can be dried, in which state they will keep good for years. They can also be made into jam, which will keep good for a considerable time.

In growing for market, one of the first questions asked is, What varieties would you recommend? Now this is a very important point, for when you go into a nursery to purchase trees, you will find, as a rule, all varieties are charged the same price, except it be some new and untried variety, which may be charged a fancy price for a year or two. It is a well-known fact to fruit growers that in certain localities, and on certain soils, one variety will flourish and bear abundant crops year by year, while other varieties will never grow enough fruit to pay for the first outlay. I may just give one well-known instance to impress on growers the importance of this being well understood before recommending certain varieties for any given district or soil. At Sawbridgeworth, Messrs. Rivers have, as a rule, splendid crops of Rivers' Prolific Plum; in fact, that variety seems perfectly at home in the stony clay of that district. Here, in a chalky clay which suits many varieties admirably, Rivers' Prolific grows freely, but seldom bears any fruit, although, as a rule, the trees flower freely. The question of selecting suitable varieties for any given district can only be learned by practical experience and observation. Growers of the Plum are aware that the number of varieties of the cultivated Plum is almost legion. I have just gone through one catalogue before me, and find no fewer than 237 varieties described, with a supplemental list of some 180 more, or in all, say, about 400 varieties. Now, this would plant about 4 acres of ground of one plant, or a tree of each variety. But would any grower who had any idea of making a profit be foolish enough to plant these, or even half this number? It would be a far more profitable investment to plant only one variety on the 4 acres, but this I should by no means recommend. My idea of Plums for market is to find out five or six varieties that are known to succeed in the district, and plant only these.

I have already remarked that certain varieties favour certain districts. Here the soil is a strong chalky clay, and the following varieties are grown by hundreds, and in the case of the Damson by the thousand: — Green Gage, Jefferson, Mitchelson's, Gisborne's, Victoria, and Damsons. Victoria and Damsons are most grown.

This might well be termed the "Home of the Damson," for many acres are planted, and during the fruit season from twenty-five to thirty tons per week of these are sent away from our railway station. The Damsons here sell for more money than any other variety grown. In seasons of plenty they have been sold as low as £3 per ton, and other years they have made from £35 to £40 per ton.

The plan adopted is to plant on grass land, at a distance of 22 feet apart each way. This will give about 105 trees per acre. Nothing but standards should be planted, and they should always have a clear stem of 6 feet. Before deciding to plant a field, the ground selected should be thoroughly drained, as stagnant water about the roots would soon prove fatal to the trees. In planting young trees a small portion of rotten manure may be mixed with the soil if the ground is poor, but I never make a point of recommending much manure to be placed in immediate contact with the roots while the trees are in a young state. I consider it better to nearly mulch the trees with rotten manure after they become established. In planting, the trees should be kept slightly above the ground level, as they are sure to settle down, although the ground is made firm, which I should strongly recommend. Immediately the trees are planted they should be securely staked, and the heads cut close back, only leaving two or three eyes on the young growths. Established trees should be gone over every year, and a certain portion of the small shoots removed, so as to keep the centres of the trees clear and open for the sun and air to reach every part of the trees. In many districts where the Plum flourishes I am aware that they are grown much closer, and many growers prefer bush trees, but of this style of growing I have had no practical experience, and shall pass it over for some one who has had experience to take this part of the subject up. In the orchards here sheep, calves, and poultry are kept to the mutual benefit of all.

It sometimes happens that some of the young trees will in a few years become "stunted," and hardly make any growth, more especially Damsons. My plan with such trees is to cut them hard back, almost to the stem; by this means they often start away, and make vigorous growth. If the ground is at all poor, it is a good plan, before cutting them back, to lightly break up the surface all round the trees, say 6 or 7 feet all round, and on this ground spread three or four barrowfuls of good manure. If this is done early in the autumn, so that the rains can wash the properties of the manure to the roots, the trees will start away with fresh vigour, and form fine healthy shoots the first season. I consider the Damson the most profitable for field cultivation. Next to it comes the Victoria Plum. Many acres of Damsons are grown here, and from experience I find the Farleigh, or Cluster Damson, is the hardiest of all; it will be found fresh and good when other varieties of the Damson are completely spoiled by frost. The Prune Damson, as grown here, is very late and hardy; the tree is of a spreading habit of growth, and the leaves are larger than any other variety I know.

I shall conclude with a few remarks as to the marketing of Plums. Next to growing them, this is of the most importance to the gardener. How to make the best of them? is the question. I have known growers who have taken great pains to pack as much straw as possible in the bottom of the sieves, so that they may have more bulk for market; this, I can assure growers, is a mistake. It is also a mistake to select the very best samples for the top of the baskets. I have been sending Plums to market by the ton for the last fifteen years, and my plan is to pack the bulk of one uniform quality throughout, and where this is done, the buyers soon get to know, and purchase accordingly.

* *Sobralia Sanderæ*, n. sp.—Leaves narrowly lanceolate, acuminate, 6 to 8 inches long, 1½ to 1½ inch broad. Bracts lanceolate, acuminate, 2 to 3 inches long. Sepals lanceolate, acute, pale sulphur-white, 3½ inches long, 10 to 11 lines broad. Petals lanceolate-oblong, acute, like the sepals in colour, 1 inch broad. Lip slightly longer, elliptical oblong, emarginate, crispo-undulate, 1½ inches in diameter, sulphur-white; throat clear bright yellow; keels, three to five, very obscure, smooth; near the base is a pair of linear white swollen calli, which suddenly terminate in about seven slender keels, radiating into the side-lobes, where they are soon lost in the nerves. Column white, with a broad yellow line down the face; teeth curved, linear, fleshy. Allied to S. leucoxantha, Rchb. f., and S. xantholeuca, Rchb. f. Imported from Central America by Messrs. F. Sander & Co., of St. Albans. *R. A. Rolfe, Herbarium, Kew.*

† A paper by Mr. J. Smith, Mentmore Gardens, read at the Crystal Palace Conference of the British Fruit Growers' Association on September 5.

SCOTLAND.

ROSEHAUGH GARDENS, AVOCH, ROSS-SHIRE.

The estate of Rosehaugh is situated in that part of Ross-shire called the "Black Isle." It is the seat of James Douglas Fletcher, Esq., who inherited the property from his father about five years ago. The nearest railway station to Rosehaugh is Inverness, which is about 9 miles distant. It is situated in a beautiful valley, which extends for many miles towards the west, and ends at the fishing village of Avoch on the Inverness Firth. The estate is entirely devoted to farming purposes, and was purchased by Mr. Fletcher's father from the late Sir James Mackenzie more than twenty years ago.

Mr. Fletcher, after he got possession of the estate, carried out considerable improvements all over it by building new farmsteadings, farmhouses, draining the land, and other improvements, quite changing the character of the district. The present proprietor has also carried out numerous and considerable improvements, and done many things that will tend to improve the condition of the estate, and make his tenants contented and prosperous. Chief amongst them are the alterations and additions made to the gardens at Rosehaugh, and which are the subject of my notes. The mansion of Rosehaugh is a pretty building in the French and Italian styles. From the front of the house a beautiful peep over the waters of the Firth is obtained, with the village of Avoch nestling by its side, and across the Firth the view extends wide over the county of Nairn. The gardens are situated a little distance away, on one side of the mansion, and occupy a total area of from 6 to 7 acres of land, which has a sloping exposure full south. These gardens are laid out in three terraces, the lower one is the vegetable garden, and the middle one a Rose garden and orchard.

I observed Tea Roses doing remarkably well, several beds of them being the perfection of health, and well set with flower buds, showing that Tea Roses can be successfully grown when well managed thus far north. The hybrid perpetual Roses are also doing remarkably well, and there was every appearance of a fine bloom this last season. On the upper terrace stand the fine ranges of hot-houses. A very little of the usual methods of bedding out is found here, and instead of this mode of beautifying the place, Roses are planted by the thousand, Mr. Fletcher being a great lover of the Rose in all its varieties. Long borders of hardy herbaceous plants form margins to the walks, filled with everything that will make a good show, and supply cut flowers, for which there is a large demand.

The grounds are laid out in an easy and natural style, and everything is done to make them enjoyable. The walks are coated with a red sandy substance got from a quarry near at hand, and are firmly rolled, making them pleasant to walk upon. The gardens have been remodelled, and one of the finest and most extensive ranges of hot-houses erected in Scotland. The ranges have a frontage of some 600 feet, and many other houses extend behind the main range.

Entering the range from the west end are found two late vineries carrying a heavy crop of fruit, one being chiefly filled with Lady Downes, the other a mixed house, with Gros Colmar, Madresfield Court, Black Alicante, and Mrs. Pince, which is a great favourite here. The Vines in these houses are a treat to see, the canes and foliage being excellent, having made

splendid progress since they were planted, and the crop of Grapes has been such, that the best bunches would not fail to take a first place at any exhibition in the country.

Passing through a glass porch, the houses for the culture of Orchids, three in number, are entered; these are span-roofed, and filled with a general collection, all of which seemed to be healthy and vigorous. The greater portion of them were bought as newly-imported plants, and these are now so well established, that they look more like ten years' established than three; indeed, the houses are fast becoming crowded, and new houses are in course of erection, including one for Odontoglossums, and another for Phalænopsis.

This is scarcely the season to see many Orchids in bloom anywhere, but several Cattleya gigas were in flower, also a strong piece of Grammatophyllum Ellisii, with two fine flower-spikes. I think that beautiful Orchid should be more commonly grown. Some stocky plants of Vanda and Aërides were admirable, as were several of Cattleya Trianæ and C. Mendelii. Of the latter species some grand varieties were noted.

A glass porch connects the houses where Orchids are grown with a range of two vineries, the first section of which is an early house, chiefly filled with Black Hamburgh Vines, carrying a fine crop of well-finished Grapes.

The next is a Muscat-house, and the fine lot of Grapes that was here found could scarcely be excelled; the Vines in all these houses have been planted three and a half years, this year's crop being the third.

Passing out from the vineries, one comes to a greenhouse, which at the time was a blaze of flowers, the chief part of the plants consisting of Pelargoniums, Carnations, Fuchsias, &c.; and overhead the roof was decorated with Lapageria rosea, L. alba, and Passiflora Constance Elliott.

Beyond the greenhouse are the Peach and Fig-houses, which are span-roofed, and 220 feet in total length. The range was formerly a narrow lean-to, but the wall against which it leaned was removed, and the houses doubled in width, so that now it is as fine a lot of Peach-houses as any one could desire. The range is divided into three parts. The trees, like the Vines were planted three and a half years ago, and they have now covered the space allotted to them. A heavy crop of fine fruit was ripening off in one of the houses, this being the third crop that the trees have borne.

In the Fig-house, the first crop of the season was gathered, and the second—a fine one—was swelling up nicely. From the Fig-house another glass porch runs to a Palm-house, a fine structure of glass and iron, 50 feet by 30 feet, and 32 feet high; the roof is domed, with a balcony running all round it about half-way up, a winding stair leading to it. The Palms, which are planted out, are making rapid growth. Bougainvillea glabra is planted to cover the pillars that sustain the dome, and was flowering most abundantly from top to bottom. Two orchard-houses adjoin the Palm-house, and in them was seen a good crop of Apples, Pears, Plums, and Cherries.

Behind the Palm-house is the fernery, which is by most of the visitors considered to be the prettiest house of all. It is laid out in the natural style, with real rock, and the formation of the rock has been kept as near to that of the district as was possible, which is the old red sandstone, and a very good imitation of it is made. This fernery is now being greatly enlarged, and a small house connected with it for the growth of Filmy Ferns. A great part of the rock-work is put in place, and an idea can be had of what it will be when finished. Its waterfall and dripping crags, its hills and valleys, its lakes and pools in miniature, when duly planted, will have a pretty effect, and form a cool retreat.

A part of the Palm-house is to be removed, and part also of the fernery. Fernery and Palm-house, so to speak, are to be under one roof, without any doors intervening, and when this is done an area of about 5000 square feet will be covered by one roof.

The Melon-house is in the neighbourhood of this block, and, like the other houses, it is specially adapted for the purpose for which it was built. It is in three divisions, each 20 feet long by 12 feet wide, and is span-roofed. Melons were found in all stages of growth, and those that were ripe were fine-looking, nice-sized fruits, and a heavy crop. To the rear of the Melon-house stood a plant-stove, which was filled with a useful lot of healthy plants suitable for all kinds of decorative uses. All the work of remodelling the garden, the building of the houses, the furnishing, &c., has been conducted under the management of Mr. Archibald Mackie, the gardener, who has shown marked ability in the carrying out of the work. He is very liberally supported by his employer, who is a gentleman of excellent taste in horticultural matters, and a great lover of his gardens and of all that is beautiful in Nature. Beside the work in the gardens proper, bowling-greens and tennis-courts have been laid out, new drives made, and an old disused quarry near the gardens turned into an American garden and hardy fernery. *A Northerner.*

Grapes at Park Hall, West Lothian.

Although the garden here is to a certain extent devoted to the growing of plants and crops generally required in a gentleman's establishment, yet, practically, the place is simply a large establishment for market Grape-growing. And there is some little difference here in the character of the produce from what one is accustomed to see elsewhere. Thus some growers aim at producing nice even bunches of moderate weight—but here large bunches are considered to make the best returns, Mr. Murray informing me that they brought considerably more per pound than the smaller ones; and what is more, he can sell them easily, without having to send them away to a distant market, Edinburgh and Glasgow being his chief marts, to either of which there is quick transport, by rail, from Polmont station, which is about half way between the two towns, and of easy distance from the garden.

In what might be termed the garden proper are a number of lean-to houses, ranged around three sides of a square, some of which are devoted to Peaches, which do good service, but the majority are planted with Vines, which are right-well managed. Muscat of Alexandria was magnificent in colour and berry, with fine, long, well-proportioned bunches, averaging probably 6 lb., but it was estimated that not a few would turn the scale at 8 lb. Gros Colmar and Mrs. Pince's Muscat were equally good.

That the enterprise is a success commercially finds expression in the fact of the erection of two new houses each of 100 feet long, 20 feet high, and span-roofed. They are, perhaps, not quite so elaborately built as the older houses, but they have an unmistakable business-like look about them, and from their dimensions it will be seen that they are capacious. The heating is very well done, as also arrangements for effectively watering the border. These vineries are chiefly planted with Gros Maroc and Lady Downes', both showing excellent fruit, some huge bunches of Barbarossa and fine Gros Colmar. Several earlier, and other varieties are grown, but the Vines had mostly been cleared of fruit; however, one could see that these must have been equally noteworthy! A rod of the black Grape John Downie was doing well. This variety is generally considered to be synonymous with Alnwick Seedling. One houseful of young Vines, two-year old, had made wonderful progress, and the Vines were carrying some fine fruit. As in most other market-places, Tomato growing was undertaken, and several compartments, which together were 275 feet long, were devoted to it. The system pursued was something of the extension method; but although I was told that this yielded large quantities of fruit, I certainly should prefer the single-stem plan of growing the plants. *F. R.*

Trees and Shrubs.

Spiræa callosa alba.

As a rock plant, this is undoubtedly a fine subject to grow. We have it planted in crevices of the stones, and in various aspects, and it succeeds in all. Its habit of growth in the way we treat it—that is, pruning it down in the winter to within two or three eyes of the base every year—induces a stocky habit, which seldom attains more than 1 foot or 18 inches in height. Each shoot is surmounted with a truss of pure white flowers, which are the exact counterpart of S. callosa in form, and only vary in colour. According to my experience, this shrubby Spiræa is not nearly so much grown as it merits. The plant has a good effect in the front of a shrubbery. *E. M.*

Phillyrea Vilmoriniana.

Amongst hardy evergreen shrubs, the above is certainly one of the most handsome and distinct that we have. It is perfectly hardy, and very useful for planting in the front of borders, as it is compact in growth; or, if a bed about 6 feet across can be devoted to it, it will be seen to still greater advantage. Its inconspicuous flowers are borne in clusters in the axils of the leaves. These are followed, in September, by a rich supply of black fruit, which are readily eaten by birds; but if the seeds are wanted for sowing, a fine net must be spread over the plants, to keep them intact. Its pointed leaves are large, leathery, and of a beautiful rich green. It can be propagated by seeds, which are better sown soon after they are gathered and cleaned, in pans, in a mixture of peat, loam, and sand, and kept in a temperature of about 55° to 60°. When large enough, prick off the plantlets round the sides of 5-inch pots. Cuttings may be taken off in September, when the wood is ripe, and made about 4 inches in length. Cut the latter below a joint, putting them in pots, and plunging the latter in cocoa-nut fibre, or tan, in a close case. But a more speedy way is to graft them on Ligustrum ovalifolium (Privet), in October, and treat them similarly to the cuttings, giving a slight syringing overhead twice a week, which will greatly help them to break into growth; and in spring harden them off in a cold frame, when they will soon grow to a useful size for planting. It is a native of the mountains of Lazistan. *H.* [The shrub does well in towns. Ed.]

The Golden English Yew.

This variety of the Yew is worthy of extended planting, whether planted as a hedge or a single specimen. Throughout the summer it is a most effective plant, standing out prominently by reason of its rich yellow colour at a season when most other plants are clothed in foliage of deep green. It forms a grand feature when several are grouped together, and it looks well at a distance. During the past summer, I saw an instance of this in a large pleasure ground in north London. Advantage had been taken of a rising knoll to plant it with these Golden Yews, which formed conspicuous objects visible for a long distance around. I do not think there is anything that can compare with it for colour; certainly the foliage of no deciduous shrub equals it, all points being considered. At the time when the young shoots assume a darker shade, that is on the approach of autumn, the foliage of deciduous plants of the same yellow colour is getting dingy; but this Yew remains good the whole winter, and the young growth in the spring is well set off by the darker undergrowth of the past season. *J. H. G.*

The Rock Garden.

Samolus repens.

A neat plant for the rock garden, which has proved hardy here through eight winters, is now called Samolus repens. It came to me as Sheffieldia repens (Forster), but has now been joined with Samolus. It is a native of Australia, and might

be expected to be tender. Friends to whom I have sent it do not give it a good character, and have generally lost it. It is a small trailing plant, with branches 3 or 4 inches long, not rising more than an inch from the ground, and bearing small white flowers in the axils of the upper leaves through the summer. It increases slowly, and dislikes drought and dry soil. Peat and a north slope suit it best, but its surroundings must be carefully chosen, or it is easily smothered. The portrait in Loddiges' *Cabinet*, tab. 435, Samolus litoralis, resembles it closely, if it be not synonymous. *C. Wolley Dod, Edge Hall, Malpas.*

THE SUSSEX FIGS AND THE BECCAFICO.

A very great difference exists between the open air culture of Figs in France and in England. In the former case the curriculum is neither simple nor cheap; in the latter it is rather more than both, for, given the proper soil, they do not require any looking after at all. Owing to the scarcity of nearly every other kind of fruit, the Fig has been forced into an unusual prominence this year, and for once the demand is not in advance of the supply.

For untold centuries the neighbourhood of Worthing has been famous for its Fig-gardens. At Tarring, for instance, they show a Fig tree that Thomas âBecket is supposed to have planted. But a sceptical age receives the tradition with the low, long whistle indicative of doubt. The plant, however, may be a sucker from the old root, like the Olive trees in the Garden of Gethsemane of to-day, but it is extremely doubtful if there is really any Fig-wood two centuries old. The Fig-tree, however, is a long liver, and the present writer has seen many specimens, apparently at their best, with ages that unquestionably run into three figures. The best Sussex Fig gardens are those at Tarring, Sompting, and Lancing; and perhaps the best managed of all is that of Mr. Inkpen's, at the second-named place. A walk through this establishment at any time between the first week in August, when the season begins, and the last week in October, when it terminates, is full of interest. Those whose acquaintance with the Fig tree is confined to the straggly and dried-up specimens which are seen under glass, would be greatly surprised. One plant measures 23 yards in diameter, and has reached a height of 15 feet. A couple of dozen or so occupy an area of quite half an acre, and it is by no means an uncommon thing for twenty-five dozen fruit to be gathered from a single tree in one day. At the height of the season, a week or two ago, Mr. Inkpen sent off 3000 Figs in one consignment. The soil here is a heavy one, but with a capital natural drainage of coarse flints about 3 feet below the surface. It must be admitted that Nature has assisted technical skill in making this Fig garden a success, for it is almost completely protected from the winds, and secures nearly every ray of the sun. The gathering usually takes place every other day.

The Fig-growing boundary is pretty clearly marked—it is not grown with any degree of success west of Bognor nor east of Southwick. Beyond each place, trees healthy and large are to be seen in plenty, but they very rarely produce any fruit to speak of. Covent Garden is the principal and, indeed very nearly, the only market for Figs. A salesman from the midlands recently confessed to Mr. Inkpen of not having the remotest idea of what a fresh Fig was like! A demand has within the past year or two grown up in Manchester and Birmingham for Figs, and as time goes on it will undoubtedly increase rapidly.

With the exception of sharp frosts in June, which play sad havoc with young fruit, the only drawback to obtaining Figs in plenty is the extreme partiality of birds of all sorts. Starlings, blackbirds, and thrushes are the most difficult pests, but perhaps the most troublesome and also the most interesting Fig-eater of this class is the Beccafico—a tiny little fellow scarcely larger than a good-sized Grape. It swarms in the Fig orchards, and on the islands and coasts of the Mediterranean. It is not usually recognised in England; but for the past three or four years it has, through some extraordinary instinct, discovered the Fig gardens in the neighbourhood of Worthing, which quite a small army invade every year. It always commences its attacks the day before the Fig is ripe, and eats itself right into the Fig. Much confusion appears to prevail as to the identity of this little bird. The name "beccafico" is somewhat indiscriminately used; but in this county the term is applied to the Garden Warbler (Sylvia hortensis); but this bird is much larger than, and differs in many other respects from, the beccafico common in Spain and Italy, and also for a few weeks at Worthing. I am not able to solve the mystery, which may be cleared up by some competent or ornithological reader. When fat, the beccafico shares with the ortolan an extensive fame for its delicate flavour; but the distinguished orchidist, M. James Bateman, has made several attempts, without success to obtain this delicate flavour. The French and Italians appear to keep the secret of rendering it a delicacy to themselves. Mr. Bateman's method is to drop each bird into a lump of lard. Mr. Henry Reeve, the editor of the *Edinburgh Review*, boasts of having been the first Englishman to give his guests beccaficos; but if truth be told, they were quite uneatable, having been preserved in the detestable red wine of Cyprus. Glass jars of this little bird were sold at the Colonial Exhibition a few years ago, but they were in the nasty wine already mentioned.

The beccafico, tiny as it is, is a wonderfully courageous little fellow, and is much more difficult to dislodge from the Fig trees than its demonstrative and noisy *confrères*. A shout or two frightens them off for the time being; but the beccafico continues its nefarious work within a yard or two of its natural enemy. *W. Roberts.*

AMERICAN BOTANICAL STATIONS.

There are now twenty-nine botanists employed at the various experiment stations, and several horticulturists are doing some botanical work. In the preparation of a bulletin, which is to set forth the character of their senders, a list of ten questions has been submitted to all of them, and the first of these questions is, "What botanical problems appear to you to be of most immediate importance in your state?" It is not to be expected that the problems calling for solution in Maine and Minnesota would be the same as those in California or Florida. However, in making a summary of the replies, one is surprised to find that far the most prominent subject named is "fungous diseases of cultivated plants." There are sixteen who announce this as among the most pressing lines for investigation. In addition to this, several name the particular trouble to be looked into; as, for example, the Peach yellows, bitter rot of Apples, Cotton blight (two), Sweet Potato rots. It is interesting to note that there has been a quite natural division of the fungous subjects among the botanists. Thus, for example, those of the prairie region are confining their attention mainly to the smuts and rusts of the coarser field grains, especially Wheat and Corn. In the South the leading subject for the fungologist is the Cotton crop; while in the central states the vineyard, and in the Eastern states the garden crops, and those of the greenhouse, are more particular subjects of study.

The study of Grasses and forage plants is considered next in importance; some, especially in the far West, are testing the wild sorts under cultivation. The states engaged in this important work are as widely separated as Vermont, North Carolina, New York, New Jersey, Nevada, Nebraska, Minnesota, Michigan, Maine, Kentucky, Iowa, and Colorado. In some states it is the Grasses particularly that are under investigation, while in others the Clovers, Lucerne, and other leguminous crops, are being considered.

Next in order of importance comes the subject of weeds. How best to check their spreading can only be determined by a thorough knowledge of their habits; and their eradication calls for a concerted action that can be brought about by wide-spread information and an urgent appeal.

Following the weeds, is the consideration of the long-neglected subject of our forests and forest trees, and next comes the question of plants for barren lands. This title is somewhat obscure, as it may mean forests or Grasses, or some other plants of less intrinsic value, to be used to prepare the way for something better.

But few of the botanists are engaging in the fertilisation of plants, including hybridisation, and all that is understood by breeding. Three indicate this as one of the pressing subjects for inquiry. It is here again that the line of the station horticulturist approaches close to that of the botanist, and very likely a large part of the station cross-fertilisation work will be carried out by the former.

Two have selected the relations of climate to vegetation, and two more testing seeds somewhat after the methods of the German seed-control stations. It has already been found that our seeds are not as foul, or our seedsmen as vicious, as had been alleged. In the far West, two station botanists contemplate a study of the influence of irrigation upon vegetation. And still further West and North, where State-making is not a thing of the distant past, the making of a State flora is considered one of the first things for the station botanist to do.

To come down to a small ending of the list, in more ways than one the returns show that at least one botanist considers bacteria among the more important subjects for study.

It is seen that the topics are broad and various, and for their satisfactory study there needs to be a wide diversity of talent. *Byron D. Halsted, Rutgers College, in "Garden and Forest."*

STERILE AND FERTILE HYBRIDS OF HARDY PLANTS.

Where many plants are grown together and allowed to ripen seed, crosses are sure to be produced to some extent between kindred species which flower simultaneously. It is important, but not always easy, for the cultivator to distinguish between flowers which vary from the type, because of the inherent power of variation in the species, and those which are the result of a cross between two plants, which themselves continue, through many generations of seed, constant to the form in which they were introduced into the garden.

The theory of evolution teaches that species are merely transient phases in a long concurrent series. In some cases we find most of the intermediate links of a series still existing in Nature. This happens where the area of development of a type is large and continuous, as in the Asters and Sunflowers of North America. In other cases, where the areas of development have been small and isolated, we are more likely to find what a botanist calls good species, because the intermediate links are wanting. But a garden will often supply these missing links between species, perhaps from crossing, perhaps from spontaneous assimilation of the plants under similar conditions of soil and climate. For instance, in cultivation after two or three generations from seed, the distinction between Veronica spicata and V. longifolia is lost. So it is between Campanula rotundifolia and C. rhomboidalis, and between C. carpatica and C. turbinata, though perhaps the last-named has hardly reached the phase of a good species.

To come to the interesting subject of sterility in a hybrid, it would be reasonable to suppose that the greater the affinity between the parents, the more likely the offspring to produce fertile seed; but experience hardly confirms this theory. If we find a form that seems intermediate between two species which are both good seed-bearers, and the intermediate form proves barren, the presumption is in

favour of its being a hybrid; but the converse does not hold good, for many undoubted hybrids between parents which continue true to their type and are very distinct in form, produce fertile seed, which reproduces all the mixed characters of the hybrid with constancy. The genus Narcissus affords notable instances of this capricious habit in hybrids. N. pseudo-narcissus × N. triandrus, and N. p. × N. juncifolius, are always quite barren, though N. p. × N. poeticus produces fertile seed even more abundantly than either parent.

The order Caryophylleæ affords many similar anomalies. Lychnis coronaria and L. flos Jovis are good and constant species, but a garden hybrid between them produces fertile seed, though far more sparingly than either parent, and the seedlings continue true to the cross, which, like many hybrids, show remarkable vigour of increase by radical shoots. L. Haageana, said to be a garden hybrid, produces seed in great abundance. Dianthus plumarius, D. petræus, D. fragrans, and probably D. cæsius mix together in cultivation, and produce an abundant crop of mongrels, in which distinctions of species are lost. Some fine single hybrids of D. barbatus, such as D. Atkinsoni, seem rarely, if ever, to ripen a seed; but one, D. barbatus × D. superbus, is not only a most prolific plant in the way of increase at the base, but ripens seed as freely as the average of its genus. A hybrid between D. glacialis and D. alpinus, which has long been known in nurseries where choice alpines are sold, has never produced a seed here, in spite of all encouragement, such as dusting with the pollen of its parents; though the fruit swells, and dehiscence takes place, and the parents are both seed-bearers here. The artificially-produced hybrids of Campanula, known in cultivation as C. Van Houttei, C. Hendersoni, C. G. F. Wilsoni, C. haylodgensis, are all barren. Of many apparent hybrids of Verbascum which flower in my garden, I have not tested the fertility, but one conspicuous form, which I take to be V. nigrum × V. phœniceum, with dense panicles of copper-coloured flowers, never produces a seed. Polemonium flavum × P. cœruleum, which I lately mentioned in the *Gardeners' Chronicle*, seems quite barren, though both parents ripen plenty of seed.

The last genus I shall mention is Veronica. Some of the species of this begin at once to vary from seed in cultivation, and go on doing so, until distinctions of species disappear, and plants are produced which botanists cannot name. The species called V. Teucrium, as well as V. spicata, produce endless varieties, merging the one into V. prostrata, the other in V. longifolia, though I cannot say for certain that I have seen a cross between the class of V. spicata producing terminal, and V. Teucrium, producing only axillary spikes of flower. The inherent power of variation in Veronica would indicate it as a subject for the florists' attention, if the result would be likely to prove attractive, but it seems to have received more favour in Japan. One of our finest and most ornamental hardy plants, known as V. longifolia var. subsessilis, is probably a development of Japanese cultivation. It is entirely barren, but sterility in this case may be due to luxuriance of habit, reminding us of the warning which Virgil gave 2000 years ago—

"*Nimio ne luxu obtusior usus*
Sit genitali arvo."

I may say about the New Zealand shrub, Veronicas, supposed to have a strong tendency to form hybrids, that two hardy kinds, V. Traversi and V. parviflora, have grown for many years in this garden side by side with a sufficient number of simultaneous flowers to cross, and, though hundreds of seedlings have flowered in all parts of the garden, I have never seen a suspicion of any intermediate form.

In concluding the record of these intermittent and casual observations, I may add that I will gladly supply specimens or additional information to anyone making a specialty of this subject, of which I have neither inclination nor garden space to carry on a continuous study on a large scale. Seedlings come up in such abundance on my flower borders, that I am obliged to hoe them up to preserve the other plants from suffocation; and generally, it is only when a stock wants increasing, that self-sown plants are allowed to flower, otherwise instances of hybrids might be indefinitely multiplied. *C. Wolley Dod, Edge Hall, Malpas.*

INSECTS.

THE LIME TREE TINEA.

At one of the chief entrances to the town of Southampton, there is a beautiful avenue of about 200 Lime trees, planted about twenty years ago, and which has lately been attacked by insects of several kinds, which have seriously injured the trees, as described in a communication, by an intelligent observer, addressed to us in the month of August last, and by whom it is stated that the bark of all the trees was completely riddled as with small shot, more particularly at the shoulders, besides which many of the trunks were at that time covered with myriads of a tiny white mite. In the early spring



Fig. 99.—Tinea Lineella, moth destructive to Limes.

it was noticed that around the base of each tree a brown dust-like substance was collected, sufficient to quite hide the soil; portions of the same substance was also observed coming out of each of the small bore-holes.

Our correspondent also sent us specimens of the insects which he had found on the trees at that time, and which proved to consist of several distinct species. Amongst these was the small lady-bird, Coccinella bipunctata, which feeds on plant lice, aphides, and other allied insects. It is, therefore, a beneficial creature, and cannot be charged with the mischief done to the trees. Some minute frog-hoppers, Cicadellæ and Typhlocybæ were present, but these agree with the aphides in their suctorial habits. Some portion of the bark was thickly covered with a very small scale insect (Coccus Tiliæ), which also suck the bark by means of their very slender rostrum, in the same manner as the aphides, whilst the myriads of the tiny white mites found on the stems of the trees cover them with a very fine web of silk. This is the well-known Tetranychus Tiliarum of Koch, the presence of which in such numbers is an indication of the weakened condition of the trees, which cannot, however, be attributed to the mites themselves.

Specimens of the bark forwarded to us showed, however, that mischief to a considerable extent had occurred, although the term shot-holes, which had been applied to the numerous small, quite irregular, holes in the bark, was inapplicable, especially as implying that they had been made by a Scolytus, or Anobium, which make small cylindrical burrows.

The accompanying figure represents some of these little irregular holes (fig. 99, lower right hand figure), from some of which the brown dust-like substance had escaped, and which was certainly the excrement of small wood-boring caterpillars, those, doubtless, of the little moths of which numbers were sent by our correspondent, and which proved to be one of the most beautiful of our British Tineidæ, namely, the Tinea (Glyphipteryx) Linneella of Clerck (and of the Fauna Suecica of Linnæus, No. 1408), which has long been known as infesting the Lime tree in its caterpillar state, and which has been beautifully figured by Curtis, *British Entomol*, vol. vi., pl. 152), Fischer von Rosslerstam (*Abb. Microlep.*, pl. 82, f. 2), and in Westwood and Humphreys (*British Moths*, ii., pl. 113, f. 1).

The body of this little moth is shining black, with a violet tinge; the antennæ are black, with the tips white; the fore-wings are of a rich orange colour, black at the base, and with deep black fringe at the tips; in the middle of these wings are three circular, shining gold spots, forming a triangle; the hind-wings are blackish-violet, with clay-coloured gloss, and deep black fringe. The natural size is indicated by the crossed line.

From what has been stated above, it is evident that this insect is the chief cause of the mischief which the trees undergo. The caterpillar itself of this little moth does not appear to have been figured; it lives under the bark of the Lime tree, and is described as of a yellowish-white colour, with a pale brown head, and a fleshy-like body. The moth is occasionally abundant on the trunks of the Lime trees in Hyde Park, where we took it some years ago in numbers from trees near the north-west portion of the enclosure; it also occurs in most of the London suburbs, and other parts of the country, occurring sometimes on Willow trees in the month of July. It disappears as a moth before the end of August.

It has been suggested that it would be beneficial to wash the trunks and branches of the affected trees with paraffin, about a wineglassful to 1 gallon of soft rain-water. This should be done whilst the insects are in the caterpillar state, before they are transformed to the chrysalis. *J. O. W.*

ACCLIMATISATION IN INDIA.

(*Concluded from p.* 466.)

Wheat, as may be already generally known, is one of our staple cold-season crops, and is cultivated over the greater part of India, but most extensively in the northern districts. Numerous varieties are grown, comprising bearded and unbearded, hard reds and soft whites, long-grained and short-grained, and, in fact, varieties resembling most of the kinds found in Europe are to be met with. The Wheat crop is always sown at the end of October and during November, and is harvested in March and April. Seeds of pedigree and ordinary English Wheats were extensively tried some years ago by the Indian Government on their model farms, but the trials were generally reported to be failures, and of late years few experiments with imported Wheats have been made. These reports were right so far as first season's results were concerned, but if the experiments had been steadily carried on over a series of years, more hopeful reports would have followed. I shall show it only requires time and patience to acclimatise English Wheats, and Wheats from other temperate countries, to Indian conditions of climate, but, unfortunately for the introduced kinds, I shall also show that the game is not worth the candle.

Imported Wheat must be sown at the same time as the indigenous varieties. If earlier sowing is attempted, the seed, as a rule, does not germinate, but if any of it, by chance, should come up, the plants are killed by the hot autumn sun; if

later sowing is attempted, there is not sufficient time for the plants to arrive at maturity before the advent of the last season. Our season for sowing does not, therefore, extend over a month, and within the particular period covered by that month, the whole of the Indian Wheat crop must be got into the ground. Imported Wheats grow very much slower than the strictly indigenous kinds, and until thoroughly acclimatised, they are from twenty days to a month behind the latter in ripening. The first crop of grain obtained from a field sown with imported seed, does not, as a rule, return above a pound or two of grain for every bushel of seed sown. The plants which attain maturity in a first-season crop, therefore, only represent an infinitesimal percentage of the number of plants which a field usually contains, thus showing how few among them were possessed of natures fitted for adaptation to an Indian climate. The first crop of grain obtained is thin and light, and has a very poor appearance, and if it is not very carefully stored until the following season, it will often fail to germinate. A large proportion, as a rule, does fail, no matter how carefully it has been stored, but if proper care has been taken in this matter, some of it will come up. The crop from the second sowing is more prolific and plumper in the grain, but it is not until the fourth season before a fair yield is obtained. During all these years the crop invariably ripens about a month behind the indigenous kinds, but after the fourth year it begins to ripen earlier, and increases in earliness annually; and, by the sixth or seventh year, it ripens with the indigenous kinds, and may then be said to be fully acclimatised. When this stage has been reached, it has degenerated to a considerable extent, and is not comparable in quality or yield with the best of the indigenous kinds; therefore, little or nothing is gained by its acclimatisation. Some home seedsmen have an idea that their pedigree Wheats have only to be once tried in India, for large seed orders to follow; but I can assure them they are mistaken, and that they had better give up casting their eyes upon this country as a probable market for seeds of their pedigree Wheats. Barley and Oats take less time than Wheat to adapt themselves to Indian conditions, but to begin with, they give quite as unpromising results.

In the latest number of the *Gardeners' Chronicle* which I possess (August 2), the Rev. Canon Ellacombe cites the zonal and Ivy-leaved Pelargoniums as examples of plants which have been long cultivated in England, and are not hardier now than when first introduced. Doubtless he is quite right in his assertion, but at the same time I question if they have ever been grown during the long period they have been under cultivation with a view to increase their hardiness. In order to grow them systematically with such an end in view, they would have to be raised from seed, not from cuttings, by the thousand; the seeds of each plant would have to be kept separate, and the seeds of the last plants to die from the effects of continued cold or frost would be the stock to begin with in the following generation, and so on in the same manner generation after generation, and in course of time I have not the least doubt a hardier race than the original stock would be the result. Certain plants will not adapt themselves to a hotter or a colder climate, and few kinds of those that do, can bear the change at once. I think, however, I have given sufficient facts to prove that many plants, under a more or less slow course of selection, and conveniently termed acclimatisation, can in time be made to grow and thrive, under conditions far removed from what they have been accustomed to for untold generations. It may have to be admitted that plants from temperate zones adapt themselves more readily to tropical zones than those from the latter do to the former, but at present sufficient evidence does not exist to prove that hardier tropical and semi-tropical races of plants could not be raised under a systematic course of selection. The hybridiser has shown what can be done in hybridisation, and in my opinion the acclimatiser could also show wonderful results; only the latter is not a fascinating subject to take up, and as a rule it requires more time and patience than the generality of ordinary mortals can give or devote to it.

When I began this article, I intended giving other examples of temperate plants under a continued course of selection having become acclimatised to the tropics, but as the examples given have taken up more space than can perhaps be conveniently spared, I shall now close, with a promise of further notes on the subject at some future time, if thought sufficiently interesting to your general readers. *W. Gollan, Botanic Gardens, Saharanpur.* [Pray fulfil your promise when occasion serves. ED.]

VEGETABLES.

CARTER'S EXTRA EARLY AUTUMN GIANT CAULIFLOWER.

THIS new variety of Cauliflower is an acquisition to the select list of standard varieties already in cultivation. From plants raised from a trial packet of seed received from Messrs. James Carter & Co. last April, I am, as I have been for some time past, cutting good supplies of large close white heads of the old Autumn Giant type; both "flower" and leaf of this strain are less coarse than those of Autumn Giant. I hope to grow the Extra Early Autumn Giant extensively next year.

CARTER'S BLENHEIM ORANGE TOMATO.

This is a good cropping variety; the fruit is quite smooth, and, with good cultivation, it attains the bulk of a medium-sized Orange, and resembles it in colour and shape; the flavour is mild and very palatable. A dish of this kind has a nice appearance, and would tell well in a collection of vegetables at an exhibition. The flavour is so acceptable, that if slugs should be in the house when the fruit is ripe, they are sure to gnaw the fruit. *H. W. Ward.*

PLANTS AND THEIR CULTURE.

GREENHOUSE AZALEAS.—These plants should have been housed before this Calendar reaches our readers, a little frost doing great harm to the plants. Now is a good time to do all necessary plant tying, but I do not advise the tying-in of plants except in the case of young ones that may require to be put into shape. Should some thrips have escaped notice at the general plant-washing at housing time, the plants should be well syringed with tobacco water and soft soap, and the plants afterwards should be put into a light airy place and not crowded together. Azaleas are at times seen in a sickly condition, every flower they can produce being cut off, and the plants themselves removed to cold houses before making their new growth. The result is seen in the autumn in miserable-looking plants that are not worth the space they occupy. Small plants imported from the Continent are difficult to get into free growth, but with some amount of patience and plenty of moist heat they can be got to grow after the flowers are over. If a shift is required by these plants, it should be a small one, as newly-imported plants do not take kindly to our composts; in fact, I think it often desirable to defer shifting them till the new growths are advanced. When repotting, good peat and plenty of coarse silver-sand should be employed. Black or sour bog-peat should be avoided, also large shifts at one time. Any plants found to be in a bad state should be marked for a thorough overhauling in the early spring months.

Camellias.—The critical period for the bloom of Camellias is at hand, bud dropping often occurring. In some gardens this cannot be prevented, but in others, the too great dryness of the house after housing the plants, also a dry state of the soil, will tend to bring it on. Knowing these things, a slight damping overhead on fine days, and an occasional watering of large pot-bound plants with a good fertiliser, will assist in swelling the buds, and preventing their falling off. Leaf-sponging should be done before the buds are too much advanced, and only a little warm water should be used, insecticides being liable to injure the buds. A small amount of ventilation should be afforded at night to plants lately housed.

Chrysanthemums.—The fine weather that we experienced last month brought Chrysanthemums on very fast, indeed many of the earliest varieties will be coming into bloom, and liquid manure in their case should be discontinued, but the ventilation must be abundant whenever the air is not frosty. Take every precaution against loss of the bloom from damp. The early kinds as they go out of bloom should be cut down, and removed to frames, to supply cuttings, keeping the plants close to the glass. *G. Wythes, Syon House, Brentford.*

THE ORCHID HOUSES.

EAST INDIAN-HOUSE.—Dendrobiums which have not finished their new growth, should receive some extra warmth and moisture in an ordinary stove-house which is kept up to 68° or 70° at night. The varieties which I find to do best by being removed to warmer quarters at this season are D. McCarthie, Devonianum, Dalhousianum, Bensoniæ, &c.; some of these varieties will require several weeks yet before the growth is sufficiently matured. In the removal of Dendrobiums for resting them, the greatest care is necessary if they are to be kept in good health; as an instance, many Dendrobiums will be much benefited by being retained in a temperature of from 45° to 50° during the winter months, that is, if the ripening has been thorough. D. Wardianum, D. nobile, and D. crassinode will flower well and make good growth, and larger than that of the previous year, if they are kept at a temperature of 45°, with just sufficient water to prevent shrinking of the pseudo-bulbs.

I should like to make it well understood that I do not advise the ripening up of small plants that have not sufficient strength to flower satisfactorily, as no good purpose is thus served. Young plants that are not allowed to flower will hardly rest at all, but make in some cases two growths instead of one in a year, and yet continue to improve in size until the flowering stage is reached, when they should be treated in the manner before-mentioned.

Epidendrum bicornutum will be benefited by being taken to a warm corner of the stove when completing its growth. This is one of the most lovely Orchids, and it used, a few years since, to be considered rather unmanageable, but a greater number of plants having been imported and distributed, its requirements have now been comparatively well mastered.

Vanda Sanderiana is undoubtedly the grandest Orchid in flower at the present season. It has the peculiarity of having flowers that are unlike, for no matter how many plants are seen with open flowers side by side, seldom will two flowers be found exactly alike. The large importations of the last two or three months will have so brought down the price of this species, that every orchidist will be able to secure one. Plants that have been recently bought at auction sales should be placed in pots, every old root with life in it being carefully preserved, the pot filled with potsherds, and placing the plants in the warmest house at command. The pots and stems of the plants may be syringed with tepid water once or twice each day, according to their surroundings and the state of the weather. *A. G. Catt, Parkfield Gardens, Hallow.*

THE FLOWER GARDEN.

THE FLOWER BEDS.—Having entered on the first week in November, there can no longer be any reason to defer the clearing of all flower beds of their summer occupants, and filling them with evergreen shrubs and Conifers, or bulbs and other spring flowers. The grassy edges of beds should be clipped evenly, and the beds, if they are to be planted with flowering subjects, dressed with decayed manure, and dug preparatory to planting. Where shrubs or Conifers are going to be placed, simply turning the soil will suffice. All tuberous-rooted and bulbous plants, as Dahlias, Cannas, Begonias, Salvia patens, should now be taken up and removed, after cutting off their stems, to a dry cool shed, where frost can be excluded, and covered with dry soil, ashes, sand, or Cocoa-nut refuse; and here they may remain undisturbed till the end of February, when

they will be removed and placed in heat, for the production of cuttings, &c.

Chrysanthemums are flowering splendidly outdoors in this county, and will well repay any trouble expended on them, in protecting them from frost by using tiffany, canvas, frigi-domo, or mats for the purpose. Single plants should have a few stakes driven into the ground, and some Laurel branches fastened to them in a manner so as to shelter the bloom; we seldom get continuous frosts just yet, so that in this way the flowers may be preserved during the whole of this month, and possibly far into the next.

Herbaceous Borders.—The weather having been so favourable of late for outdoor work, perhaps there is now time to turn attention in many cases to the herbaceous border, the plants in which are much better for being divided and reduced in size every few years, and all more or less enjoy a liberal dressing of manure which cannot possibly be well dug into the border without a thorough overhauling of it. Now is a much better time to do this job than the spring, when there is generally a great pressure of work requiring to be done, and the plants sooner re-establish themselves, and are better fortified to withstand the cold winds and dry weather of spring and early summer. The whole of the roots should be first of all taken up and placed where they can be protected from frost, a liberal dressing of decayed leaf-mould and manure placed on the border, and dug-in two spades deep.

The clumps and roots should then be divided and replanted according to their height, colour, variety; and if the whole of the border can be mulched afterwards with half decayed leaves or litter, they will be effectually secured from any harm in severe weather.

Where herbaceous borders are not served in this wholesale manner, no doubt many of the varieties of plants will require reducing, an operation which should also be done now; or possibly some varieties may require removing altogether. Any portions of the roots remaining after the completion of the planting will come in useful for placing in the shrubbery borders, or in the reserve garden.

In order to forward all outdoor work as much as possible, Box edgings may be safely and perhaps much more expeditiously planted now than in the spring, and for certain the plants sooner re-establish themselves. The pruning of most kinds of shrubs may be commenced, and groundwork and alterations should be pushed on while the weather remains favourable. Secure all newly-planted trees and shrubs of large size from wind-rocking, and the more valuable kinds should be well mulched with decayed leaves or litter.

The Lawn does not require so much attention now, but the occasional use of the lawn-mower and roller will preserve its neat appearance. With the leaves continually falling it will be very difficult to preserve complete neatness, but these should be daily swept up, and especially in the walks. The latter should be well rolled every week. *D. C. Powell, Powderham Castle, Kenton, Devon.*

Fruits Under Glass.

Melons.—The season of these fruits is now drawing to a close, and in order to impart the fullest flavour possible to them, keep a dry temperature of 70° to 75° at night, with 10° more by day, and secure a little ventilation at all times, so as to carry off the excess of air moisture. Much caution is needed in watering the plants, or cracking will ensue. I have a crop of Melon Blenheim Orange still to ripen off. It is a kind the fruits of which we are enabled to keep sound for a longer time than some others. After cutting them, if they are put into a dry cool room, the flavour at this season will be fairly good.

Orchard-houses.—In this department, the trees will be nearly dormant, and those in pots outdoors taking their rest. Now is a good time to clean the house, and carefully wash the trees with soap and water, or Gishurst soap, in the proportion of 8 oz. to a gallon of water. In many gardens, the orchard-house is worked in sections, the first one being started early in December, for ripe fruits of Peaches and Nectarines in April and May, whilst other kinds are brought forward in the later divisions. These may consist of Pears on Quince, Apples on Paradise, Cherries on Mahaleb, Plums, Figs, Strawberries, &c. In such cases, provision must be in progress for the annual addition to the number of trees, and the potting-up of a few maiden trees in variety, to replace discarded ones, as a store of established young trees is always wanted to keep up the stock to its proper number. The trees should be chosen of nice shape, the junction of scion and stock clean and healthy, and the branches free from large wounds. As a rule, trees that are forced hard do not last many years, and a small home nursery, where the trees can be propagated and grown in good soil, is a great convenience to those who have orchard-houses to keep furnished with bearing trees.

The Early House of Peaches and Nectarines.—If ripe fruits are expected by the first day of May, all operations connected with roots and borders should have been completed last month, the trees, glass-work, walls, &c., cleaned, and all got in readiness to close the house by the middle of the present month. Fully six weeks will be gained if well-established and well-matured trees of Alexander, Waterloo, and Hale's Early are employed for the earliest house, as against the older but better-flavoured kinds, Royal George, Grosse Mignonne, and Bellegarde. It therefore follows that in the case of very early forced Peaches, the question of flavour is usually put second, and earliness first. I have hitherto had some difficulty as to bud-dropping with the first-named variety, which it is to be hoped is not constitutional; but my trees were somewhat gross of wood, and I must plead guilty to occupying the house with Chrysanthemums, which are so frequently injurious to the Peaches when the borders are allowed to remain unwatered, or to become sour and soddened from the watering of the Chrysanthemum plants; moreover, these plants introduce aphis and mildew to the house. All the same, there are gardens where the gardener has no choice in the matter. If the roof-lights have been removed, they should now be restored to their places, as sharp frosts have an injurious effect on the prominent buds of Peaches. The main branches of the trees should be tied into position, leaving them at a distance of 5 inches apart—at least, the young shoots. These shoots need not be tied until the fruit is set, and disbudding finished, it being thought by some growers that the fruits set better; but I lay greater stress on the removal at once of all foreright and underneath buds, as well as misplaced buds, which are known to be useless. Outside borders should be covered with litter, or tree leaves made secure with boughs or thatch. *W. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

Orchards.—In renovating an old orchard, the first thing to be done is to top-dress the soil with wood-ashes, manure, and crushed bones, fresh soil, turf or the like. In filling up vacancies caused in an orchard by the death or intentional removal of trees, it is good practice to throw out holes of 9 feet diameter, and 2 feet 6 inches deep, where the new trees are to stand. These holes should be left exposed to the weather, and every opportunity taken advantage of to cart in turf and the other materials during the winter. In this case planting has to be deferred until February or March, but the actual time will depend on the weather, a mild winter compelling early planting. As a site for a new orchard, a well-drained and sheltered meadow is as good as any. This may be planted with Apples, Pears, and stone fruits. If the soil be good naturally, plant the trees from 30 to 40 feet apart each way, and keep the various sorts of fruits by themselves, allowing the trees to extend till they touch, merely thinning out the branches a little. By this mode of wide planting, sun and air will reach the trees on all sides. Lose no time in placing grease bands round all Apple trees if the winter-moth has been prevalent in former years. Trees of whatever form should have a band on the stem, the smear on which should be kept in a moist sticky state till February. The grease will go through ordinary canvas, and grease-proof paper should be put next the bark of young trees. I am using the extra brown D.D. prepared canvas 53 inches wide, which answers every purpose. As the planting of trees proceeds, stake and tie them provisionally to prevent wind-rocking, and protect them in grass land from stock and rabbits. In most districts this year, the subsoil is comparatively dry, therefore do not hurry your nurseryman to forward the trees before it is in a moist workable condition, and although I advocate early autumn planting, it is better to defer the operation if the conditions are not favourable. *A. Evans, Lythe Hill, Haslemere.*

The Kitchen Garden.

French Beans.—There is little difficulty with suitable pits or houses in keeping up a supply of French Beans during the winter, as, with a proper degree of root and aërial moisture, and suitable temperature, the plants grow moderately strong, and produce a medium crop; but, in the absence of a light house, with plenty of hotwater piping, it is really not worth the trouble to attempt the growing of Beans before the turn of the year. I usually plant my Beans in beds at 1 foot distant from row to row, and the plants when singled out stand at 10 inches apart. Overcrowding must be avoided during winter. A moderately light rich soil, with plenty of half-decayed leaf-soil, or spent Mushroom dung, suits them, and when the plants are high enough to need supports, short twigs should be placed between the rows. During severe weather, when much artificial heat is required, the roots must be well supplied with water at a temperature of 80°. Keep the plants clean by freely using the syringe on bright days. Keep the temperature at night at 60°, and by day 10° to 15° higher, admitting air in due and safe quantity on favourable occasions by day. Those Beans that were sown in pits and frames in the middle of September, will now have pods fit to use, and the plants should be gone over each alternate day, picking all the usable Beans. Afford the plants some manure water at each second watering.

Tripoli Onions.—The beds of this crop should be kept free of weeds, the Dutch hoe being run between the rows occasionally—this will loosen the soil as well, and should the plants get lifted by the frost a little fine soil should be run down the rows among them, and the plants again made fast in the ground See that the shed or room, where are placed the bulbs recently harvested, has plenty of air afforded it, and during wet weather the bulbs should be carefully turned over, and any of those with thick, unripe necks put aside for immediate use, laying out thinly the best bulbs for late use.

Carrots should now be got up and stored like Potatos, or in sand, or packed closely together in trenches, burying their crowns 2 inches deep, on a sheltered border, and with some litter strewn over them in very sharp weather. In this last-named way the roots will keep well till the growth recommences in the spring. *H. Markham, Mereworth Castle, Maidstone.*

How He Planted My Potatos.—The piece of ground would be about 150 square yards in area, so rather less than 5 rods, and was sheltered and warm, and had been long under cultivation. The last digging it had got was when the winter frosts had departed, some time late in March. Johann was furnished with the ordinary Croatian hoe, fitted on a handle of about 2 feet 6 inches long, and with the heart-shaped blade, and bending low, was scooping out the shallow basins destined to receive the sets at the stretch of his long legs apart—that is, about 3 feet 6 inches. I could see that the quantity of "seed" required would be much less than by the English mode of planting; but I did not expostulate much with him about it, although I imagined that my crop would be a light one. The sets were duly planted, and the ground made level with the aforesaid hoe. Under the hot sun of Southern Moravia the shoots soon came above ground, and here another surprise awaited me; for when their earthing-up became necessary, my Croat, instead of drawing up the earth in long ridges, in English fashion, made a little rounded hillock around each stem, or bunch of stems, and as the tubers grew, and the hillock distended under the pressure of growth below, more soil was drawn to it; but at the finish each set had its own hillock of mould, independent of its neighbours. This form of earthing-up allowed the haulm, which was strong, to lay on the ground, between the hills, and not on them, so that had disease attacked the Potatos, the spores of the Peronospora would have mainly fallen on ground which contained no tubers; moreover, the sun's rays shone on every part of the haulm—a matter of great importance in plant growth, more especially if the growth be of short duration. The crop of Potatos was enormous, and measured from three-quarters to 1 peck at a root, which, at that rate, was 150 pecks for the 5 rods of ground planted. I felt that the foreigner, with his inborn common sense, had taught me a useful lesson; but it was only one among many that had still to be mastered. *Recollections of an English man Abroad.*

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

MONDAY,	Nov. 3	Woolcote (two days).
TUESDAY,	Nov. 4	Kent County (two days). Devizes. Brixton (two days). Finchley (two days). Horsham (two days). Streatham (two days). Clapham (two days).
WEDNESDAY,	Nov. 5	Portsmouth (three days). Torquay. Tooting and Balham (two days). Wells (two days). Ealing. Dalston (two days). Highgate (two days). Market Harborough (two days).
THURSDAY,	Nov. 6	Chiswick. Taunton. Hammersmith. Worthing. Pembroke. Tottenham (two days). Ascot (two days). Isle of Sheppey (two days). Stroud (two days).
FRIDAY,	Nov. 7	Crystal Palace. Devon and Exeter. Bradford (two days).

SALES.

MONDAY,	Nov. 3	Dutch Bulbs, at Stevens' Rooms, and also at Protheroe & Morris' Rooms. Nursery Stock, at the American Nurseries, Bagshot, by Protheroe & Morris (two days).
TUESDAY,	Nov. 4	Nursery Stock at the Hale Farm Nurseries, Tottenham, by Protheroe & Morris. Lilies at Protheroe & Morris' Rooms.
WEDNESDAY	Nov. 5	Dutch Bulbs at Stevens' Rooms, and also at Protheroe and Morris' Rooms.
THURSDAY,	Nov. 6	Established and Imported Orchids, Lilium auratum from Japan, Tuberoses, &c., at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Nov. 7	Established and Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Nov. 8	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—44°.7.

Tree and Shrub Planting in Towns.

THIS matter formed the subject of an address to the Royal Horticultural Society on Tuesday last, when Sir CHARLES STRICKLAND presided. Messrs. W. PAUL & SONS, of Waltham Cross, Messrs. PAUL & SONS, of Cheshunt, and Messrs. CUTBUSH sent in illustration various specimens of trees and shrubs suitable for the purpose. It is not generally known, we may add parenthetically, that the Pernettyas, of which fine specimens were sent by the last-named firm, do fairly well even in smoky localities in London, flowering and producing berries out-of-doors under what would seem to be unpropitious circumstances.

The observations made by Dr. MASTERS in introducing the subject for discussion, had reference to the great importance of the matter from the point of view both of health and beauty. A thousand houses per month, it is roughly estimated, are added to this overgrown metropolis, every one of the five million inhabitants of which is continually polluting the atmosphere, to say nothing of factories and chimneys, so that the necessity of securing open spaces and of planting them appropriately, is a matter of urgency. But these considerations, vast as their importance is, were only adverted to in passing, the speaker preferring, in the short time at his disposal, to deal solely with matters in which gardeners are directly concerned, such as the means which gardeners have of counteracting the unfavourable conditions of our crowded towns, the selection of suitable subjects, according to the requirements of particular cases, the proper method of planting, and of maintenance. &c. A few illustrations were selected for special mention, and specimens were exhibited of plants grown in town, showing how very large and varied is the number of plants that may be grown under what appear to be unfavourable circumstances. Over-crowding from planting too closely, or from neglecting timely thinning, was illustrated by the condition of the fine Planes on the Thames Embankment, which have to be clipped into unnatural shapes to keep them within bounds. Where, unfortunately, pruning is necessitated, the natural form and mode of growth of each plant should be followed as far as possible, and hacking and distortion carefully avoided. A full report, together with lists of suitable trees and shrubs, will be given hereafter in the *Journal of the Royal Horticultural Society*, so that we must confine ourselves here to a summary of the principal points touched on, and copies of which were circulated among those present.

CONDITIONS UNFAVOURABLE TO THE GROWTH OF TREES AND SHRUBS IN LARGE TOWNS.

Over-drained and unsuitable soil; relative absence of light; presence of smoke, of sulphurous vapours, &c.

WHAT, AS GARDENERS, WE CANNOT DO TO COUNTERACT THESE INJURIOUS INFLUENCES.

Inability as gardeners to increase the amount of light (electric light and Plane trees!)—to abate the quantity of smoke or purify the air. These are matters to be left to workers in other departments of sanitary work, &c.

WHAT, AS GARDENERS, WE CAN DO, IF PERMITTED.

Provide suitable soil; select the most appropriate plants for particular localities; plant the trees in a scientific and workmanlike manner; give proper attention to the trees, &c., when planted, &c.

SELECTION OF SUITABLE SUBJECTS.

Necessity for considering the circumstances in each particular case,—the planting of avenues, or squares, of fore-courts, in relatively pure or in unwholesome situations, &c.

HOW TO SELECT SUITABLE SUBJECTS.

Observation and experiment; visit the squares and streets of our large towns, and ascertain what trees do best; experiment so far as means will allow; town experimental gardens needed; Chelsea garden, Battersea, Victoria Park, as illustrations of gardens that might be turned to account in this way.

STUDY OF HABIT AND STRUCTURE.

Early or late leafing; resistance to injurious conditions; early or late shedding of the leaf; structural peculiarities which explain the superior powers of resistance possessed by such plants as Hollies, Skimmias, Osmanthus, Iris, Carnations, &c.

WHAT TO PLANT IN TOWNS.

Anything that will bear the climate, subject to the foregoing considerations: deciduous trees and shrubs, flowering shrubs, Evergreens, Creepers—abundance of suitable subjects, but many of them not grown largely by nurserymen, *e.g.*, Tulip trees, Maidenhair tree, Catalpas, Mulberries, Figs, Ailanthus, Magnolia acuminata, Pyrus, Maples of sorts, Poplars, Copper Beech, Birch, Hornbeam, Naples Alder, Prunus Pissardi, Laburnum, Lilacs, Privets, Catalpas, Wych Elms, Planeras, Mountain Ash, Elders, and many others; Hollies, Aucubas, Skimmias, Osmanthus, Yuccas, hardy Bamboos, Phyllirea Vilmoriniana, Arbutus, Butcher's Broom, Alexandrian Laurel, *cum multis aliis*. Among Creepers, or as wall plants, Pyracantha? Pyrus japonica, Jasminum nudiflorum, J. officinale, Ampelopsis Veitchii, Grape Vine, Aristolochia sipho, &c. Full lists to be supplied hereafter.

WHAT NOT TO PLANT IN CONFINED OR UNWHOLESOME LOCALITIES.

Timber trees in fore-court gardens; Common Elms, Limes and Thorns objected to unless in open situations; Conifers generally useless; exception, P. excelsa, &c.; Laurel—Cherry, Rhododendrons, and "American plants," generally.

METHOD OF PLANTING.

Soil, space, staking, thinning, pruning, watering, washing, and other practical considerations.

HOW NOT TO DO IT.

Respectfully commended to local Boards and Vestries:—

Dig a hole, do not trouble about its depth, or length, or breadth, nor as to the space that will be required for the roots. If the soil consist of brickbats, it will do—it will do better still if it be sodden with gas—the tree will the sooner cease from troubling. Dig your hole as close as may be to the gas-pipes, telegraph-tubes, and sewers—you will have the less soil to remove in the first instance, and it will be easier to "transplant" the tree when it is necessary to "pick up the road."

Select a tree that is sure to be too big for its place in a short time. You can then cut off its branches, and make it look like a real work of art, such as a clothes-prop or a gibbet.

Plant the trees or the shrubs as thickly as possible, and forget to thin them out; you will thus produce an immediate effect, and you will have the satisfaction, dear to philosophers in particular, and to Englishmen in general, of witnessing a fight—and appreciating a struggle for existence.

Having planted your tree, stake it in such a way that the stem must be snapped off; this will give the *wind* something to do.

Never think of removing the stake or loosening its ties—that would involve too much trouble.

Avoid placing any guard around the newly-planted tree; in this way you will provide fodder for the butcher's pony, who will graze contentedly on the bark, while he waits at your door; and you will provide healthful amusement for the butcher's boy, who will playfully score the bark with his knife while "waiting for orders."

In dry weather, do not turn on the hose on to the roots, nor attempt to wash the leaves with the engine, such procedures make a mess, and cause the leaves to remain on longer; and, lastly, whenever circumstances permit, do not fail to run the steam-roller over the roots. It bruises them well, and saves the necessity for root-pruning.

The discussion, which was practical, and to the point, was continued by Sir CHARLES STRICKLAND, Messrs. NICHOLSON, HUDSON, WYTHES, ROUPELL, G. PAUL, and others, who narrated their experiences, and whose remarks will be eagerly awaited until published.

LÆLIA ANCEPS VAR. STELLA (see Supplementary Illustration).—The fine plant of this beautiful white-flowered Lælia anceps is in the possession of C. W. LEE, Esq., Parkfield, Worcester, a foremost Orchid fancier. Mr. CATT, the gardener at Parkfield, kindly sends us the following interesting particulars concerning this plant:—"It was imported in 1885, but did not send up any flowers till 1888, when four spikes of four flowers each were produced; last year the plant sent up twelve spikes of flowers, and fifty-one flowers. I have in my Calendarial notes gone fully into the treatment of Lælia anceps, which all of the white varieties receive; it is unnecessary to repeat them. I may here say that the plant this year has fourteen spikes to flower.

NATIONAL CHRYSANTHEMUM SOCIETY.—A meeting of the committee took place at ANDERTON'S Hotel, Fleet Street, E.C., on the 27th ult. Mr. R.



LAELIA ANCEPS, VAR. STELLA.

(GROWN IN PARKFIELD GARDENS.)

Ballantine, who was in the chair, submitted an estimate of the financial position of the Society, which was of a satisfactory character. Mr. C. Harman Payne, the Secretary of the catalogue sub-committee, announced the fact of the new centenary edition of the catalogue being ready for issue, and for which he had received many applications from abroad. Reports from the Banquet and Conference sub-committee were presented. Lord Brooke, M.P., the President, will preside at the former, which is to take place in St. Stephen's Hall, on Thursday, the 13th, at 6 p.m., and at which ladies will be present. It has been arranged that access can be had to the Hall direct from Broad Sanctuary. Sir Edwin Saunders will preside at the meeting of the Conference on Tuesday, the 11th, at 6 p.m.; and Sir Guyer Hunter, on Thursday, the 13th, at 2.30 p.m. The Hon. Secretary reported the receipt of numerous applications for space for the exhibition of horticultural buildings, requisites, &c., and stated that considerable difficulty would be experienced in finding space for all; and there was every probability of the exhibition being one of a very extensive character. Provision will be made for an exhibition of curios, the literature of the Chrysanthemum, drawings, &c.—Mr. G. F. Haité F.L.S., promising a loan of an extremely interesting character. The opening ceremony will be performed by Lady Brooke at 1 p.m. Several societies were admitted to affiliation, and a number of new members were elected. A hearty vote of thanks was passed to the catalogue sub-committee for their labours in bringing out the centenary edition of the catalogue, a work involving much research and labour. Mr. L. Castle, the Hon. Secretary to the William Holmes Memorial Fund, reported as to the operations of the committee, and stated that subscriptions were coming in sums from five guineas down to half-a-crown. A cordial vote of thanks was passed to the Chairman for presiding.

Chrysanthemum Shows.—It may not be amiss, says a correspondent, to offer a few words of advice to secretaries and committees of the above societies at the present moment. In the majority of the schedules a certain hour is fixed upon for all exhibits to be in readiness for the judges. This time, however, is not always strictly adhered to—far from it, it being frequently an hour later than that stated; yet the work has to be done somehow or another in time for the exhibition to be opened at the specified hour, or soon afterwards. The executive, in order to be in readiness for the opening, will often intimate to the judges that the time for admitting the public is near at hand, this being, of course, a hint to them to proceed as quickly as possible. When this is attempted, in order to meet the expressed wishes of the executive, it is often impossible to do justice to the exhibits. The writer well remembers more than one case where it was impossible for the judges to give the amount of time which was essential in making the awards. The result of this hurrying is certain dissatisfaction amongst some of the exhibitors, who often, after having staged their exhibits, will spend more time in adjudicating upon the respective merits of the productions than it is at all possible for the judges to do, with the hope of finishing their duties in anything like fair time. The exhibitors themselves, if they could but see it, are the parties who would profit most by adhering to the rules laid down; yet they often offend in this respect, with utter disregard for the judges, whose endeavour is to do justice to all concerned. It is impossible for them to enter into matters of detail relative to each class, or to pay proper regard to regulations which are made in certain instances to govern the competition; thus the judges, in many cases, are in the end unfairly found fault with, hardly anyone thinking of the real cause of any oversight that may have been detected. To the managers of the many flower shows, and to the exhibitors also, I therefore say, "Endeavour by all means to adhere to the rules, and give the judges fair play." This is needed at all shows, but more so in the autumn than in the summer, the light not being so good then in halls and public buildings as in tents during the summer season.

—— The following list of shows includes all those of which we have received any notice. The figures in brackets refer to the number of days duration, those without figures are one day shows.—*Monday*, November 3: Woolcote (2).—*Tuesday*, 4: Kent County, at Blackheath (2), Devizes, Brixton (2), Finchley (2), Horsham (2), Streatham (2), Clapham (2).—*Wednesday*, 5: Portsmouth (3), Torquay, Wells (2), Tooting and Balham (2), Ealing, Dalston (2), Highgate (2), Market Harborough (2).—*Thursday*, 6: Chiswick, Taunton, Hammersmith, Worthing, Pembroke, Tottenham (2), Ascot (2), Isle of Sheppy (2), Stroud (2).—*Friday*, 7: Crystal Palace (2), Devon and Exeter, Bradford (2).—*Monday*, 10: St. Neots.—*Tuesday*, 11: National Chrysanthemum Society, Centenary Festival, at Westminster Aquarium (4); Leeds Paxton (2), Kingston (2), Eastbourne (2), Brighton (2), Truro (2), Lewes (2), South London (2), Watford (2).—*Wednesday*, 12: Royal of Jersey (2), Croydon (2), Birmingham (2), Isle of Thanet (2), Bournemouth (2), Tunbridge Wells (2), Catford (2), Bath (2), Cornwall Polytechnic, at Falmouth (3); Chelmsford, Sevenoaks, Dartford (2), Faversham (2), Guildford (2), Hampstead (2), Great Yarmouth (2), Canterbury (2), Northampton (2).—*Thursday* 13.—Royal of Ireland, at Dublin; Reading, Birkenhead and Wirral, Crediton, Dawlish, Barnsley (2), Cranbrook (2), Southend (2), Southgate (2), Wimbledon (2), Winchester (2).—*Friday* 14: Bolton (2), Leicester (2), Sheffield and Hallamshire (2), Reigate.—*Saturday*, 15: Wellington (Somerset).—*Tuesday*, 18: Liverpool (2), Twickenham (2), Manchester (2).—*Wednesday* 19: York Florists (3), Rugby (2), Bedford and Bedfordshire (2).—*Thursday*, 20: Shropshire, Scottish Association, at Edinburgh (3).—*Friday*, 21: Stockport. *Friday*, 28: Dundee (2).

The United Horticultural Provident and Benefit Society.—This institution, which offers many advantages to those who become enrolled as members, deserves all the support it now obtains, and we hope its success will increase more and more. The annual dinner was held at the Cannon Street Hotel, E.C., on Thursday evening, October 23, when a large company sat down under the Presidency of Mr. E. R. Cutler, who fulfilled his duties to the satisfaction of all, and in proposing the toast of "Continued Success," strongly urged its claim as a benefit society. Mr. N. N. Sherwood proposed "The Chairman," Mr. H. J. Veitch "The Officers," and Mr. Cummins "The Visitors," to which Mr. G. Anderson, of Sydney, Australia, replied in suitable terms; other speakers being Messrs. G. Bishop, J. Hudson, N. Cole, J. Wright, A. Moss, J. Laing, and B. Wynne. The tables were charmingly decorated by Messrs. Cannell, Laing, and Chard, the floral arches of the last-named being very effective. Mr. GeorgeCavendish will preside next year.

"Botanical Magazine."—The plants figured in the October number are:—

Nepenthes Curtisii, Mast., *Bot. Mag.*, t. 7138.—See *Gard. Chron.*, 1887, vol. ii., pp. 681, 689, fig. 133, and Dec. 7, 1889, p. 661, fig. 90.

Vanda Amesiana var. superba, t. 7139.—A remarkable species, differing from all others known to the editor, in its enormously stout stem and roots, and the hard, rigid leaves; the young ones being stiff, poinard-like grooved, the older ones broader and recurved, concave on the upper, rounded on the lower surface. The flowers in erect, many-flowered racemes, each flower to 1½ inch in diameter, with whitish segments, the lip panduriform, with rose coloured stripes on the disc. Cambodia.

Iris Danfordiæ, t. 7140.—A dwarf species, with yellow perianth, spotted with purplish dots and destitute of beard. Native of Armenia, where it was discovered by Mrs. Danford. Cold frame, Kew.

Clerodendron paniculatum, t. 7141.—A native of Eastern Tropical Asia, of shrubby habit, and cordate, variously lobed leaves, and large, loose, terminal panicles of scarlet flowers. Stove shrub. Kew.

Saccolabium bellinum, t. 7142.—A short species, with an erect, many-flowered raceme; flowers 1 to 1½ inch in diameter, with oblong, yellow segments, spotted with red, and with a rounded, white lip beset with small, soft, spine-like processes. Burma.

Ghent.—At the last horticultural meeting at Ghent the following awards were made:—Certificates of Merit for novelty: 1st, To Lælia elegans Turneri, from MM. Vervaet et Cie., bearing three very dark flowers; 2nd, to Odontoglossum grande excelsius, shown by M. Ed. Pynaert Van Geert, quite a distinct variety with large spots of an unusual depth of colour, the tips of the petals being of a pearly-white hue; 3rd, to Nidularium amazonicum tricolor, Hort., a handsome novelty in whose foliage shades of red, yellow, and green, harmonise admirably. A Certicate of Merit was heartily accorded to M. Pynaert Van Geert; 4th, one was also unanimously awarded for Cattleya aurea var., from M. J. Hye-Leysen, the sepals and petals were pale whitish-yellow, most delicately shaded with tender green: the lip of large size, was remarkable for unusual colouring, the ground colour being golden with brilliant stripes of red; 5th, to Lælia Perrini var., from the same Orchid grower, a pretty variety with showy foliage; 6th, to Odontoglossum bictonense var. alba, shown by M. Van Imshoot, a rare variety with pure white petals; 7th, to Adiantopsis radiata, shown by MM. Wallern et fils, a beautiful Fern, with much divided fronds, and pinnules radiating from the centre; 8th, to Cattleya Rothschildiana, exhibited by Madame la Marquise de Wavrin. Three Certificates were awarded for good cultivation and flowering:—1st, To Saccolabium Blumei majus, with two splendid clusters of blooms, of delicate colouring and freshness, shown by MM. Vervaet et Cie; as was also 2nd, Cattleya Gaskelliana, with thirteen beautiful flowers; 3rd, to Cypripedium Charles Canham, with an immense bloom, the plant being healthy and robust, and shown by M. Hye-Leysen. Honourable Mention was awarded to Cattleya Gaskelliana, var. from MM. Vervaet et Cie; to Oncidium Kramerianum, var., from M. Hye-Leysen, with a fine flower of a most striking colour; to Pescatorea cerina, from M. Léonard; to Houlletia Brocklehurstiana, from M. Van Imshoot, a very old plant species, with a most delicate perfume; to Cœlogyne cymbidioides with four clusters, and to Lælia præstans from the same amateur grower. The jury awarded Honourable Mention to cut Dahlia blooms shown by M. Schmitz, amongst which were some of beautiful and uncommon colour; they specially Commended Sir Trevor Lawrence, Impératrice des Indes, Juarezi (flowers of a Cactus-like type), Chevalier Noir, and Gloire des Jardins.

Brotero.—The number of the *Boletim of the Sociedade Broteriana of Coimbra*, lately issued, contains an illustration of the statue of the famous Portugese botanist erected in the Botanic Garden.

Floral Decorations at a Royal Visit.—On the occasion of the visit of the Belgian royal family to Lierre, on the 15th of this month, flowers played a considerable part in the decoration of the waiting-rooms at the railway station, town-hall, l'École Normale pour Instituteurs, and at the Industrial Exhibition. At the École Normale especially—thanks to the eager competition and disinterestedness of many amateurs and horticulturists—it was found possible to transform the courtyard into a beautiful garden, with avenues and flower-beds, and the reception-room into an admirable winter-garden. The pupils, who were already expert in the cultivation of flowers, contributed largely to the success of this floral entertainment. To give some idea of the importance of the plants used, we may mention the following, which were among the greenhouse plants:—Pritchardia macrocarpa, Chamærops Fortunei, Kentia Forsteriana and rupicola, Phœnix rupicola, Maranta Porteana, Pandanus Veitchii, Dracæna

cannæfolia, Polypodium aureum, Davallia tenuifolia, &c. The bouquet presented to Her Majesty the Queen was most artistically arranged by M. G. de Bosschère, of Antwerp, and was composed of Cattleya, Lælia, Odontoglossum grande and Alexandræ, Cypripedium, Oncidium, Lycaste, Miltonia, &c.; a fine Tuberose exhaled an exquisite perfume, and all the blooms were most charmingly interspersed with fresh fronds of Adiantum.

The William Holmes Memorial Fund.—A meeting of the committee appointed to deal with the above fund was held in the Royal Aquarium, Westminster, on October 23, Sir Guyer Hunter, M.P., in the chair; when after consideration of the numerous suggestions as to the form the memorial should assume, the following resolution was unanimously adopted:—"That a portion of the fund raised be set aside for assisting the technical education in landscape gardening of the late Mr. H. Holmes' eldest son, and that the remainder be awarded as prizes or medals at the exhibitions of the National Chrysanthemum Society, and at those of affiliated societies." Sir Guyer Hunter was appointed Chairman, and Mr. R. Ballantine, Treasurer, with Mr. Lewis Castle, Hotham House, Merton, Surrey, as Honorary Secretary, to whom all subscriptions and communications should be addressed. Circulars and subscription forms will shortly be issued to all members of the National Chrysanthemum Society, the affiliated societies, friends of the late Mr. Holmes, and everyone who is desirous of helping in a good cause.

Epiphyllums from Chatsworth. — Cut flowers of some twenty-five varieties of Epiphyllum truncatum, from Mr. Owen Thomas, gardener to his Grace the Duke of Devonshire, display the usefulness of these brilliant autumn flowers, and in a marked degree vouch for their high culture at Chatsworth, where seedlings have been raised from the best-named kinds, which exhibit marked improvements both in size and colour. Selecting the best in the group before us, without regard as to whether they are seedlings or not, the selection falls first to seedling No. 8, a noble flower, with the tips of the segments bright orange-scarlet, the centre and tube different shades of violet on a white ground. Next comes seedling 4, in the same way, but displaying more white in the centre of the flower. The selection then falls to seedling 6, with large purple-violet flowers, coming nearest to the specimen among the named kinds, named E. t. Bridgesii. No. 2 seedling is also very good, near to the scarlet and white E. t. Ruckerii, but showing more white than in that variety. Among the named kinds, E. t. spectabilis is a fine white-edged, and tipped with violet; E. t. salmoneum cruentum is a very bright scarlet flower, with violet and white tube and centre; and E. t. spectabile superbum is equally good, the centre white, and the tips of the segments tinged and flaked with violet. Mr. Thomas says that the Epiphyllum Russellianum have still to follow the kinds now in flower, so that the flowering season of these showy plants extends over a considerable period, and that, too, when other flowers are scarce.

Pierre Tschihatcheff.—The death at Florence of this famous traveller and naturalist is announced. His great work was one on the natural history and geology of Asia Minor, which is a standard work. He translated Grisebach's *Geography of Plants* into French, and enriched it with many notes.

Valenciennes.—A special exhibition of Chrysanthemums will be held at Valenciennes on November 22. Intending exhibitors should communicate with M. Wœlffle, Société d'Horticulture, Valenciennes, France.

The Weather in the North of Scotland.—On Sunday a complete change in the weather was experienced over the North of Scotland. A cold northerly wind had been blowing on Saturday, but up to Sunday forenoon the weather had remained dry, when, from that time towards evening, heavy showers of rain fell at intervals. The atmosphere was gradually getting colder, and sleet and rain fell during Sunday evening, but soon melted. Early on Monday morning showers of snow were experienced, and continued at intervals throughout the day. The country is now for the first time this season covered with its winter's garb.

The "Drawing" Season.—We are reminded by one of our correspondents that, in consequence of the continued drought, nurserymen will be unable to commence lifting as early as usual, as the ground is not in condition to plant, even if they should send off their orders. Apples, Peaches, and Nectarines have not yet completed their growth, and must shrivel if lifted, so that customers are advised to wait for suitable weather, and not consult the almanack.

Mr. Charles Maries.—We see announced, as in the press, a work on the cultivated Mangos of India, by this gentleman. It will be published by Messrs. W. H. Allen and Co.

The Linnean Society.—The first meeting of the Session 1890-91 will be held on Thursday, November 6, 1890, at 8 p.m. precisely, when the following paper will be read:—"A contribution to the study of the relative effects of different parts of the Solar Spectrum on the assimilation of Plants." By the Rev. Professor Henslow, M.A., F.L.S. Fellows having any objects to bring for exhibition on that evening are requested to communicate previously with the Assistant-Secretary.

Awards to Messrs. J. Jenson & Co., Limited.—The above firm, having offices at 109, Fenchurch Street, London, inform us that they have gained the highest award at the Vienna International Exhibition of this year, for all their exhibits, viz., guanos, cattle oil, trade oils, medicinal cod liver oils, liquid glue, &c.

The Freedom of the Fruiterers' Company.—We have received the following announcement from Mr. Eagleton, Secretary of the Fruiterers' Company:—"I have much pleasure in informing you that the Fruiterers' Company, at their Court held on the 20th inst., decided to confer the Freedom and Livery of the Company upon the following gentlemen: Mr. George Bunyard, Joseph Cheal, Shirley Hibberd, T. F. Rivers, A. H. Smee, and John Wright. This distinction has been conferred in recognition of the able services which these gentlemen have rendered to the Company as members of the Executive Committee having the management of the recent exhibition, and has not been conferred on any one except Sir James Whitehead during the past thirty years."

Chrysanthemums. — Such a hold has this flower secured on the affection of cultivators, that, so far from the Chiswick Conference last year having exhausted their energies, a second Centenary celebration is to take place this year at the Aquarium, under the auspices of the National Chrysanthemum Society. The arrangements are detailed in another column. One contemporary—the *Journal of Horticulture*—takes time by the forelock, and has issued a Chrysanthemum number, which is interesting and valuable. Amongst other things, we are glad to see a portrait of Robert Fortune, to whom not only Chrysanthemum growers, but all gardeners, were so greatly indebted. The *Gardeners' Magazine* also the promises some extra good fare in connection with Chrysanthemums; while reports from all quarters of the country are sure to come in to embarrass editors with limited space and many calls upon it. As these shows are so extremely numerous, and the reports involve so much repetition, we think the interests of our readers, in general, will be best met by a full report of the Centenary meeting, and by condensed notices of as many of the smaller ones as our correspondents furnish us with, or we have space to devote to them. It is noteworthy that while the Chrysanthemum *furore* has extended to Belgium and France, it has not yet invaded St. Petersburgh or Berlin, as, by a curious coincidence, is mentioned incidentally, in our issue of to-day by our correspondents in both capitals.

North of Scotland Root, Fruit, and Vegetable Association.—Among the societies in the North of Scotland established for the purpose of improving the quality of fruit, roots and vegetables, none probably has done better service than this widely-known and spirited Association. The object and aim of the Society has been to encourage and stimulate the cultivation of the best descriptions of roots and vegetables, and also the propagation of new varieties. Its success, hitherto, has been very marked, and the good that has been effected by it is strikingly noticeable, especially in the improvements that have taken place in Turnips and Potatos, particularly the latter, alike as to improved kinds and better crops. The annual show takes place at Inverurie, N.B., to-day (Saturday, Nov. 1). Seldom can a better display be seen than that which is annually witnessed at Inverurie. As in former years, considerable encouragement is held out to the competitors in the shape of two handsome prizes in plate and money, offered for field and garden produce, including Turnips, Potatos, Carrots, Cabbages, Parsnips, Beetroot, Onions, Leeks, Apples, and Pears, and a most interesting exhibition may be looked for.

Testimonial to Mr. McKellar.—At the Queen's Hotel, Kelso, on Thursday, October 23, Mr. McKellar's many friends in the neighbourhood entertained him at a dinner, Mr. W. Thomson, Clovenfords, presiding. Mr. McKellar, it will be remembered has just been appointed to the gardens at Sandringham, and a gold watch, together with a gold bracelet for Mrs. McKellar were presented on this occasion, as a mark of the esteem with which he is regarded in and around Kelso.

Solanum jasminoides.—This elegant creeping plant is generally grown near London, trained to the rafters of a greenhouse, a plan for which its clusters of pale lilac or white flowers which continue to flower in succession admirably adapt it. Never, however, have we seen it so beautiful as when growing against a wall or over the roofs of verandahs and similar situations in the Isle of Wight. We have seen it out-of-doors against a wall at Kew, and it will probably survive all but the "grand winters."

Normal School of Science and Royal School of Mines. — Her Majesty has been graciously pleased to direct that the Government Institution, now known as the Normal School of Science and Royal School of Mines, shall in future be called the Royal College of Science, London.

Sir John T. D. Llewellyn, Bart.—This gentleman has accepted the invitation of the Town Council of Swansea to occupy the office of Mayor of the town next year.

Foreign Correspondence.

BERLIN.

Summer has passed away, and the other night we had 2° of frost. The Dahlias and Cannas, which were in delightful flower during the last few weeks, are now gone, and winter-gardening begins. Amongst the flowers in the shops is a greater variety than for many years. Orchids have become more common and more fashionable, and as a consequence, the growing of Orchids has increased in many of the nurseries; Cypripediums and Odontoglossums are the most liked. The blooms of Lapageria rosea vanished for many years from the florists' shops, but several days ago I saw some of them. Chrysanthemums are only cultivated in white and sulphurous-coloured varieties. The noble, large flowers of Japanese varieties are only seen in the greenhouses of some of the rich amateurs. The best collection

here is, without any doubt, that of Mr. Spindler, whose plants will compare with the best English ones. Amateur cultivation for many years run down to a minimum, has now revived, so the plant collections in the shops show more variety than last year. The most esteemed are Palms; indeed, they are the best of indoor plants. Amongst these, the delicate Cocos Weddelliana is cultivated in large quantities. The same may be said of Kentia; and I must confess there are but few species which are better, and which are more rapid of growth, than the Kentia Fosteriana. It is true, for some three or four years the plant grows but slowly, but then it forms a leaf larger than the others, and more majestic than the other. Palm culture is well understood in Germany. We had here last summer two exhibitions, where seedling Palms were an important feature. Two-year-old plants of Latania borbonica showed four or five fully-developed fronds! I do not exaggerate when I say, that the number of seedlings of this one species grown yearly here is about 20,000.

Besides Palms, Aroids are much grown by amateurs. One exhibition showed some especially good collections of Dieffenbachia, a genus for many years not seen in the market. That Marantaceous plants are grown in larger quantities than formerly, and in many more species, is good proof that they please amateurs. Amongst Ferns, Lomaria gibba undulata, Adiantums in different species, and Pteris are most esteemed and sold, especially the Lomaria, which is a plant very often in request. A very fine acquisition is the series of hybrids of Begonia Rex × Diadem. These plants may afford a stimulus to amateurs which for some time had almost vanished. The tuberous Begonias are much liked. The colours, it is true, are brilliant, and the dwarf forms with the large flowers have a good effect, but they are of a short endurance. Those most cultivated are the single forms, although amongst the double ones there are also some good flowers. I remarked a very dwarf white, and a similar scarlet one of about 4 inches high, covered with so many flowers, that hardly a leaf was to be seen. *Nous revenons toujours à nos premiers amours*, and so many Ericas are now brought to market. Let it be hoped that the lovely Cape of Good Hope and Australian flowering shrubs will also be cultivated in greater quantities than has been the case for many years. The increase in amateur gardeners has necessitated the production of a new journal, *Blätter für Pflanzenfreunde*, which will give cultural notes of indoor plants and biological articles, and the idea has taken root and shape amongst cultivators of the amateur class. *Our Berlin Correspondent.*

St. Petersburgh.

The first national exhibition of plant, vegetable, and fruit culture, &c., was held in the large St. Michelmanège, St. Petersburg, from October 5 to 23, and was a great success in every respect. The arrangement and management of the show left nothing to be desired. A large rockery, with a cascade and a pond in front, over which was a rustic wooden bridge, has been greatly admired. It was tastefully decorated with plants from the Imperial Botanic Gardens. A full-sized cast of the monument to be erected to the well-known Central Asiatic traveller, Prewaldsky, must also be mentioned. From the entrance of the hall a broad staircase led to a great promenade, in the middle of which an elegant Russian kiosk, with rose-coloured drapery, was devoted to floral decorations from the two largest florists' firms here, Mr. H. F. Eilers and Messrs. K. Rempen & Son. Around this kiosk were the exhibits of several other florists, and many good things, both in fresh flowers and in dried and coloured grasses in the Makart style, were noted. Three broad staircases decorated with vases, Palms, and other tropical plants led down to the main hall, which looked like a beautiful garden with fountains, and winding walks leading underneath tall Palms, Tree Ferns, and Laurels. There were splendid groups of excellently grown Camellias, Roses, Lilies, Tuberoses, Bouvardias, Begonias, Cyclamens, Eucharis, Palms, and Cycads, and rare stove and greenhouse plants, chiefly from the various Imperial gardens, from amateurs, and from nurserymen of the capital. Among the very best groups must be noticed those of Mr. Potesta, St. Petersburgh, consisting of large Cycas; Mr. Koppe, Wilna, comprising large specimens of Cocos australis and Washingtonia robusta; Mr. Darnowos, splendid Dracænas and Crotons, with Aroids and Ixias in flower; Mr. Freundlish, St. Petersburg, had profusely flowering Lilium auratum and Tuberoses; Mr. Siesmayer sent from the Imperial Taurian Gardens magnificent Crotons, Dracænas, Aroids, and Araucarias—the latter in eighteen different sorts. While there were plenty of the above-mentioned plants, Orchids in flower were only twice shown, and then in small collections. Chrysanthemums are not in fashion here, and of the favourite, the Rose, there were not more than five or six groups, owing to the lateness of the season.

The last quarter of the hall was occupied by the numerous vegetable exhibits from growers and amateurs, among which enormous Cabbages, Turnips, Pumpkins, and Melons, as well as many new varieties, could be noticed. Those of the largest seed firm, W. A. Gratscheff, surpassed all others, and I gained the first prize of 500 roubles offered by the City. The same firm also exhibited a fine collection of 250 different sorts of Potatos, among them being a great many of their own introduction.

Owing to the favourable summer in Russia, all sorts of fruits have ripened excellently, which the splendid collections of various fruits amply proved. In this section, almost every competitor deserved and gained a medal. The Emperor's prize of two magnificent vases was awarded to the Warsaw Pomological Garden, while an extra gold medal was given to the excellent Grapes, Apples, &c., coming from the Imperial estate, Massandra, in the Crimea. Pineapples were also well shown, and dried fruits; also marmalades, fruit wines, &c., were largely represented.

In the classes for Mulberry and Cotton growing, Tobacco and Hop culture, and for seeds, there were many competitors; a collection of bee-feeding annuals was interesting, and the kiosk from the Caucasian silk-growing station was also shown. Outside the hall in the court were exhibited large collections of fruit trees, decorative shrubs, and trees and Conifers from many sources. As frosty weather set in some weeks ago, these trees were all without leaves, but were still very interesting. The largest and best groups of Conifers, shrubs, and trees came from Dr. E. Regel's Pomological Gardens, comprising a great many entirely new species lately introduced by him from Central Asia. *Our St. Petersburgh Correspondent.*

Montevideo.

I came here, at the request of the municipality of Montevideo, to prepare plans for certain proposed alterations and improvements for the capital of Uruguay. The programme is extensive and most interesting. It is proposed to remodel or form anew a dozen squares; to enlarge and improve the Prado Park, and to lay out three others, which vary in size from about 50 to 174 square acres; and to form boulevards, avenues, open spaces, public recreation-grounds, &c. Montevideo is a city on undulating ground, and charmingly situated; its growth has been very rapid, and it is believed that it will continue to increase, and that gardening will play an important part, judging by the inclination for this which is shown by the "Junta municipal," who sent for me.

I received a most cordial reception here, and was accorded full liberty to form my plans without the slightest restriction; my surveying is now almost done, and I am going to take back to France all the rough drawings and plans, and which will be carried out in succession. Part of the work—that which is to improve the Place Gabala—is already in train; other alterations will follow in time.

The Uruguayan Government has also entrusted to my charge an expedition to study the trees and shrubs native in the Republic as far as the Brazilian frontier. With the facilities afforded me by the political governors of the districts to undertake this journey, I have been able to traverse many regions as yet but little known, from whence I shall bring back a good collection of dried plants, and some living specimens unknown in Europe. These will be especially valuable for open-air floriculture, and for the gardens by the shores of our Mediterranean. The principal object of this excursion was to take notes of the trees and shrubs which may be utilised in planting future public parks in Montevideo. In this respect I was entirely successful. As in the great European and North-American parks, the foundation of the vegetation consists of specimens from the native flora, so will the woody plants of Uruguay be first used for this purpose. *Ed. André.*

Plant Notes.

Morisia hypogæa, *Gay* (Erucaria hypogæa, *Vivian*).

This is one of the most interesting plants for a rockery. It seems to be new in cultivation, and I was induced to propagate it, because all the *connoisseurs* who saw it in the alpine garden this summer were struck with its beauty, and recommended me to make it known. Indeed, I have not found it in any catalogue, although I read the following paragraph about it in Paxton's *Dictionary*:—"This plant is well fitted for ornamenting rockwork, where its bright yellow flowers contrast well with its deep-green, polished leaves." According to this work, the plant was introduced from Sardinia in 1833. It appears now to be rare in gardens, for I have been assured that it is known nowhere else. Yet there are few plants more worthy of notice. Imagine a low hummock, covered with dark, shiny, elegantly-cut leaves, arranged in rosettes on the ground, and forming quite an ornament of themselves; the clusters becoming covered with flowers, which are absolutely stemless, brilliant yellow, and of a large size, strongly resembling Eryngium ochroleucum; the whole plant closely packed and pressed together so as to form quite a yellow ball. It blooms from the beginning of May to the end of July, and even up to August 15. Planted in a rockery, in full sunshine, beside an Eritrichium nanum, the effect is beautiful, and would be even better were the plants still more fully exposed to the sun. This charming crucifer grows wild in the mountains of Corsica and Sardinia, and seems quite at home in our climate. It likes dryness and sunshine, is multiplied by division or by seeds. With me it has unfortunately not fruited the last two years, but it may be easily increased by dividing the clumps. *H. Correvon, Directeur du Jardin Alpin d'Acclimatation, Genève.*

Gentiana barbata, *Frol.*

In 1887 my friend, M. le Chevalier Sommier, brought me, on his return from a botanical excursion in the Ural Mountains, seeds of a Gentian new to Europe, and which he described as such in the *Bulletino della Societa Botanica Italiana*, vol. xx., No. 3, July, 1888. This Gentian has already been described by many authors as G. barbata, Fröl (Ledebour's *Flora Russica*), and which Grisebach considered to be a variety of G. detonsa, Fries, but which seems rather to be a separate species.

This Gentian grows in the Caucasus and Siberia, and M. Sommier was the first to discover it in Europe. The true G. barbata, Fröl, was previously unknown in cultivation, and all the seeds which various botanic gardens had sent to me produced Gentians known under other names, but never the true barbata.

The seeds from M. Sommier were sown in the autumn of 1887, and came up in the following spring. They bloomed this year from June to August, and have proved to be true G. barbata as described by the botanists. It is a slender plant, 11 to 13 inches in height; leaves opposite, stems erect, branching, and each bearing one flower at the end. This

flower is of a splendid blue colour, large, erect, and resembling the bloom of G. pneumonanthe. This is a mountain-growing Gentian, since it was found by M. Sommier at an altitude of 1260 feet, in latitude 57° N., in company with Rosa avicularis, Lind., and Rubus saxatilis, L. And finally, it passed last winter in our alpine garden of the Linnæa in Valais, at an elevation of nearly 5500 feet, flowered there this summer, and bore seeds. It is growing in light soil, and exposed to full sunshine. *H. Correvon, Directeur du Jardin Alpin d'Acclimatation, Genève.*

MANURE FOR THE GARDEN.

(Continued from p. 410.)

In continuation of our summary of Mr. Harris' essay on the use of nitrate of soda for manure in the garden, we come next to—

Nitrate of Soda and Drought.

Celery is a semi-aquatic plant. It delights in an abundant supply of water. But it is found that nitrate of soda is in part a substitute for water, and the same is true of many other plants. In the dry climate of America, Pansies are supposed to require a damp soil or large supplies of water. But it has been found that nitrate of soda, even on dry, sandy soil will produce a luxuriant growth of plant, and a profusion of the largest and most brilliant flowers. The effect of this manure on the growth of the Convolvulus bine, and the colour of the leaves, and the size and beauty of the flowers, is said to be most remarkable. The effect on Asters is equally satisfactory.

Nitrate of Soda for Strawberries, Currants, and Raspberries.

The Strawberry grower knows the value of water. If he will try nitrate of soda he will find it wonderfully efficacious.

The effect of this fertiliser on Strawberries in the dry climate of the United States is very beneficial. It not only doubles or trebles the yield, but the berries are larger and handsomer, and consequently command a much higher price in the market.

No ordinary amount of manure will produce so great an effect, for the reason that the plants grow and form their fruit early in the season. The nitrate furnishes the plants with nitric acid before the nitrogen of ordinary dung can be converted into this essential ingredient of plant food.

A few years ago, Mr. Harris, published a statement in regard to the astonishing effect of a large dressing of nitrate of soda on an old Strawberry bed. The bed had been neglected, and was full of grass and weeds. At that time nitrate of soda had not been tried on Strawberries, and it was not known but that it might injure them. But this particular bed was so run out and worthless, that no anxiety was felt whether the nitrate killed the plants or not.

Two or three heavy dressings were sown broadcast, early in the spring and a few weeks later. Instead of killing the plants, the nitrate made them grow so vigorously that with a little assistance from a sharp hoe, and by pulling out the large weeds, the Strawberries overpowered nearly all the grass, and a remarkably fine crop of fruit was obtained.

Since that date nitrate of soda and superphosphate has been used on all Strawberry plantations, and this dressing is found far more effective and economical than stable dung.

Another instance is given of an old Strawberry bed, in its fifth year of bearing, which was in an exhausted condition and foul with weeds. This was dressed in the spring of 1888 with 300 lb. of nitrate of soda per acre. The effect was amazing, for this bed of 1¼ acre, from which hardly anything was expected, gave fully 7000 quarts of Strawberries. The description was variety Crescent, with fertilising rows of Wilson, Sharpless, and others. The crop was nearly as large as the best the plot had made. This was on moist bottom-land, naturally fertile. Nitrate of soda is, at least, equally as good for Raspberries as for Strawberries. On Currants, with clean cultivation, large crops of fine fruit have been raised for several years, with a top-dressing of nitrate of soda alone, applied on each side of the rows early in the spring.

On poor land it is recommended to apply superphosphate and potash in the autumn, and plough or cultivate them in; and the following spring—and, in fact, every spring—give a top-dressing of nitrate.

Nitrate of Soda and Weeds.

From what has been said about the effect of nitrate on the old grassy Strawberry-bed, it must not be inferred that this substance will kill weeds and nourish wholesome plants. Nitrate of soda, properly used, makes "rich land;" and it is known that weeds, if they have the chance, will grow luxuriantly in rich soil. It is also well known that a light, thin crop, favours the growth of weeds, while a heavy, "smothering crop," will hold them in check. Much depends on whether the crop or the weeds get the start. Hence, it is of vast importance to make the land as clean as possible before sowing the crop, and to keep down the weeds by the frequent use of the cultivator and hoe. If this is done, nitrate of soda will make the crop grow so rapidly that it will smother or check the weeds. On the other hand, if this is not done, the weeds will prove better fighters than the crop we want to raise, and they will secure the lion's share of the nitrate, and with the nitrate they will also appropriate other plant food and moisture, and thus the nitrate, instead of helping the crop, may actually injure it. There will be a large total growth of vegetation, but it is vegetation of the wrong kind.

Nitrate of Soda for Tomatos.

Professor Voorhees, of the New Jersey experiment station, made experiments with different fertilisers on Tomatos in 1889. The trials were made on the farm of Mr. C. M. Housell, an intelligent practical gardener, who attended to all the details. The results were as follows:—

Manures used per acre.	Cost of Manure.	Value of the crop per acre.
	Dols.	Dols.
Without manure	...	271·88*
20 tons stable dung	30	291·75
8 tons stable dung and 400 lb. complete fertilizer	15	317·63
160 lb. nitrate soda alone	4	361·13

The above manures were all applied May 7. On an adjoining plot, 160 lb. of nitrate of soda was sown May 7, and again on June 12, when the Tomatos were beginning to set; another dressing of 160 lb. was sown on the surface around the plants. This plot produced a crop which sold for 369 dols. per acre.

The first dressing of 160 lb. of nitrate yielded a profit of 85·25 dollars per acre; the second dressing of 320 lb. produced a profit of only 3·87 dollars per acre.

It is evident, therefore, that 160 lb. of nitrate of soda per acre was all that the plants needed, or could make use of without a greater supply of phosphoric acid and potash than the soil afforded.

In addition to the above experiments, Professor Voorhees made others that are worthy of consideration. The results may be tabulated as below:—

	Manures per acre and date of sowing.	Cost of Manure.	Value of crop per acre.
		Dols.	Dols.
A.	Without Manure	.....	271·88
B.	160 lb. Muriate of Potash, 300 lb. Superphosphate	7·2	284·25
C.	Same as B. with 160 lb. Nitrate Soda, May 7	11·2	336·63
D.	Same as C. with 160 lb. additional Nitrate, June 12	15·2	429·38
E.	Same as B. with 320 lb. of Nitrate, May 7	15·2	395·25

It will be seen that the addition of phosphates and potash to the 160 lb. of nitrate soda had no effect. The reason for this is, that the soil could furnish enough phosphoric acid and potash for all that the crop produced by the 160 lb. of nitrate required. But when an additional 160 lb. of nitrate was used, then the phosphoric acid and potash came into play, and the crop brought 429·38 dollars per acre.

It will be seen further, that the 320 lb. of nitrate applied May 7 on Plot E., did not have as great an effect as the same amount of nitrate of soda applied at two dressings, on Plot D.

It may surprise many gardeners that 20 tons of good stable manure did not produce as large a crop of Tomatos as 160 lb. of nitrate of soda. The 20 tons of dung contained not less than 160 lb. of nitrogen, while the nitrate of soda contained only 25 lb. And that the great effect produced by the nitrate of soda was due to the nitrogen, there is abundant evidence.

Why then, did not the 160 lb. of nitrogen in the dung do as much good as the 25 lb. in the nitrate? Simply because the nitrogen in the dung has to be converted into nitric acid before the plants can use it. *J. J. Willis, Harpenden.*

(To be continued.)

* A dollar is equal to about 4*s.* 2*d.*

FLORISTS' FLOWERS.

THE GLADIOLUS.

Some persons will discuss the question whether the corms of Gladiolus should be lifted or be allowed to remain out-of-doors. I have no doubt which is the best for the garden varieties of G. gandavensis, at least if they have been planted in rich deep soil, with the idea of obtaining long spikes of well-formed flowers. If the district be a wet one, they must be taken up and stored in a dry place. Cultivators of these or any other plants may have no experience with them in any other district except their own, and write or speak as if the same kind of treatment were good for all other districts. The Gladiolus does best in districts where the rainfall in autumn is much below the average; Cambridge, for instance, where the rainfall may be 20 inches in twelve months. It is another matter altogether when this is doubled. The soil must be moist when the plants are growing, and dryish when the bulbs are ripening off in September and October.

When the soil is naturally adapted for the plants, and the climate suitable, it would be well to treat the Gladiolus as a hardy plant. Dean Herbert was very successful with it in his garden at Spofforth; the soil was a good yellowish light loam suitable for Barley. In artificial borders of peat soil, they also did well, but in such soil more water was needed in the summer. The many fine hybrid Gladioli raised at Spofforth were perfectly hardy in the open borders, and clusters of corms remained in the same place undisturbed for twenty years, and did best when allowed to grow into a thick tuft, giving a profusion of blossoms. The clumps were covered with leaves from November to March or April. There are now many fine species in cultivation which were unknown to Herbert, but his success was remarkable, as some of the seedlings would flower the first autumn, which I have never seen, although I always raised the seedlings of G. gandavensis in pots as Herbert did; but he had not G. gandavensis. The garden varieties in cultivation should be taken up now, as even if the leaves are still green on some of the plants, the corms will not be improved by being left out in the wet soil. As they are dug up, cut the stem over close to the top of the corms, and convey them away at once to a dry airy house. I have generally placed them in a vinery from which the Grapes have been removed, and the small corms at the base of the old ones are left until the soil still clinging to the bulbs is quite dry, when they may be removed, and the old corms cleaned, and stored in a dry, frost-proof place. I knew a case, many years ago, of a collection of Gladioli corms being stored in a shed; these were placed with their labels in flower-pots, the whole

being arranged upon the brickwork over a hothouse boiler; but the place being too hot, everyone of them was killed. The large corms keep best in paper bags; the small bulbs from the base of the old ones should be kept in dry sand.

Seedlings should also be taken up now if in the open ground; they form corms the first year as large as Marrow Peas, and they are best preserved in dry sand. We find they keep best on the shelves in the fruit-room, where the temperature does not fall below the freezing-point. *J. Douglas.* [Some good cultivators do not cut off the tops, or remove much of the soil on taking the plants up, but store them away as they are. In this way the corms remain sound the whole of the winter. Ed.]

ROOT-GALL OF ORCHIDS.

A correspondent sends us specimens of these growths, and asks for information concerning them. To meet our correspondent's wishes, so far as we are able, we reproduce the illustrations contributed to our columns in 1869 and 1885 by Professor Westwood. The Professor described, under the name of Isosoma orchidearum, a minute insect, which he believed to be the cause of the mischief, although the Chalcididæ, to which group this insect belongs, are known to be parasitic on the bodies of other insects. Mr. MacLachlan, however (July 18, 1885), considers that the Isosoma is parasitic on a midge



Fig. 100.—Antenna and wing of the root-gall fly.

(Cecidomya), which latter does the mischief to the plant. While the entomologists are settling the question, cultivators must adopt the very unscientific method of destroying the affected roots, and thus, from ignorance, involve both friend and foe in one common destruction.

NOTES ON VINES AND GRAPES.

Buckland Sweetwater.—To see this Grape in the best condition, so far as my experience goes, it should ripen about the end of August; it is then in prime condition. Some years ago, I had a 12 lb. basket of this Grape at the Crystal Palace; and though it was awarded a 3rd prize, I thought, at the time, that this spoke well for it, considering that it was shown alongside so good a Grape as Muscat of Alexandria. When grown with the midseason Hamburgh, there is no other Grape that gives me more satisfaction. Unfortunately, the Grapes do not improve in look by hanging on the Vine. The Vine is of free growth, and a sure fruiter, as also a good setter. To secure large bunches, leave an extra bud at pruning, or run up young canes. A good grower of Hamburgh will not fail to do this. Unlike most white Grapes, Buckland Sweetwater will colour up well under a good mass of foliage, and if the sun should, by chance, shine direct on the berries before they are ripe, it will scald them. Liberal root-feeding will increase the size of the berries; sometimes these are rather uneven in size, owing to the stoning having been faulty; and this may be remedied by giving the roots a top-dressing of lime, or gypsum, in the spring. It is a Grape that bears carriage well, of very fair flavour, and should do well for market work. I have made as much as 4*s.* per lb. with it, but those days of high prices are gone. As an early Grape, I like it much. Should large bunches be required, they may be obtained by tying up the shoulders, and by practising moderate thinning, especially at the first time. It is, however, the compact bunches that present the most desirable appearance. *Stephen Castle.*

FRUIT REGISTER.

CHERRIES.

Rivers' Early.—This fine early Cherry should be included in every choice collection. It usually ripens here on a west wall in the middle of June, and the black fruits are large, and of capital flavour. The tree grows well and crops very heavily most years, the clusters of fruit hanging six to ten together. Kentish Bigarreau has very fine fruits of a somewhat pale colour on the underside, and red next the sun. It is a prodigious cropper when grown on a wall, and in the generality of seasons scarcely

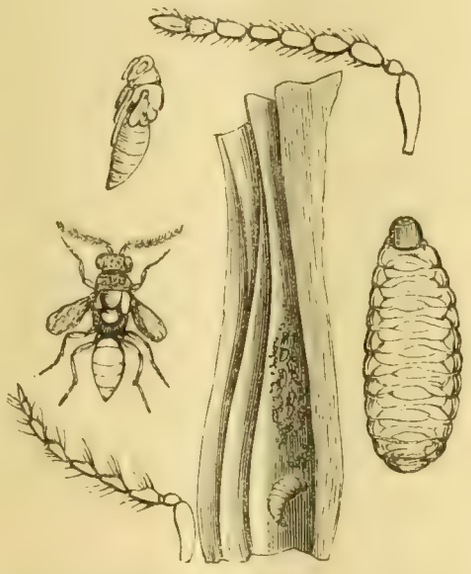


Fig. 101.—Leaf gall, and the insect producing it.

ever fails to give satisfaction. Napoleon Bigarreau ripens later than the Kentish Bigarreau, and is of a much better colour, and the flesh firm; and the fruit hangs on the trees a long time after being ripened. This variety is, in my opinion, one of the very best of the red Cherries in its season. It succeeds as a wall tree on a west aspect. It generally realises a good price in the market.

Black Tartarian.—The fruit of this variety which is almost black, is good for the dessert, and there is no better Cherry grown, it being also a certain cropper. The tree is hardy and grows with freedom, the fruit ripening towards the end of June and the beginning of July, at least in Kent. The Elton Cherry is perhaps one of the largest fruited varieties. The fruit is readily known by its heart-shape, and the flowers which are very large and fine, make the tree when in full bloom a beautiful picture. The flesh is firm, and is good flavoured if gathered at the right time, but becoming somewhat too tender if left long on the tree after being ripe. It is one of the best dessert Cherries, and ripens in the second week of July, and sometimes earlier; it grows and fruits well on a west aspect. *H. Markham, Mereworth Castle, Kent.*

The Chrysanthemum in Japan is the emblem of long life.

CEDARS OF LEBANON IN ENGLAND.

Mr. A. Ashton, writing to an evening contemporary, gives some interesting facts about what is stated to be the progenitor of all the Cedars of Lebanon in England. This venerable tree stands immediately behind the old Manor House (formerly Queen Elizabeth's Palace), at Enfield. It reaches to about 100 feet in height, and what is more, its branches are so widespread that they have to be supported all round by wooden props and iron bands. Having found on inquiry that the Enfield folk knew next to nothing about the origin of this remarkable Cedar, and, consequently, are utterly unable to enlighten on this point the various visitors who from time to time come to view the tree, I think that a few particulars concerning the planter of the Enfield Cedar, which I have copied word for word from the pedigree of the ancient and distinguished family of "Uvedale of Horton," may be of some interest to your readers:—"Robert Uvedale was born in the parish of St. Margaret, Westminster, May 25, 1642, educated at Westminster School under Dr. Busby, whence he was elected to Trinity College, Cambridge; B.A., 1662; M.A., 1666; LL.D. Com. Reg., 1682 (Sir Isaac Newton was competitor with him for the Law Fellowship, which Dr. Uvedale had the honour of obtaining), and was master of the grammar school at Enfield about the year 1670. He resided in the old Manor House in that town, called Queen



Fig. 102.—Root-gall, and its contained grub.

Elizabeth's Palace, and being much attached to the study of botany, had a very curious garden there, and planted, among other trees, a Cedar of Libanus, which (till within these few years) was one of the finest in the kingdom, measuring (in October, 1793), 12 feet in the girth. In an account of the most remarkable gardens near London in 1691, by F. Gibson, printed in the *Archæologia*, vol. xii., p. 188, Dr. Uvedale is said to have 'the greatest and choicest collection of exotics that perhaps was anywhere in this land.' Dr. Pulteney, in his brief *Memoirs of Dr. Leonard Plunkenet*, says: "I regret I cannot collect any material anecdotes relating to his friend and collegian, Dr. Uvedale, of whom Plunkenet ever speaks in a style which indicates that he held him in great esteem.' . . . . 'The garden which he cultivated at Enfield appears to have been rich in exotic productions, and though he is not known among those who advanced the indigenous botany of Britain, yet his merit as a botanist, and his patronage of the society at large, was considered enough to incline Pettiver to apply his name to a new plant, which Miller retained in his Dictionary, but which has since passed into the genus Polymnia of the Linnæan system, the author of which has nevertheless retained Uvedalia as the trivial name.'—*Pulteney's Botanical Sketches*, vol. ii. p. 30. In the British Museum (Bibl. Sloane, 4064, Plut. 28 F), are fifteen letters from him to Sir Hans Sloane; also letters from him to Dr. Sherard and Mr. James Pettiver. Dryden, Dr. Uvedale, and other learned men, having agreed to translate *Plutarch's Lives* from the original Greek, Dr. Uvedale accordingly translated the *Life of Dion*, and the work was published in 1684. A whole-length por-

trait of him, and another of his wife, were in the possession of the late Admiral Uvedale, of Bosmere House, Suffolk." In another part of the pedigree his name is entered thus: "Robert Uvedale, LL.D., Fellow of Trinity College, Cambridge, and Rector of Orpington and the chapel of St. Mary Cray, Kent; the celebrated botanist; born 1642; died 1722; buried at Enfield." *W. R.*

Home Correspondence.

THE RAIN.—It is a remarkable circumstance that, so late in the year as fully four weeks after Michaelmas, we should have been ardently wishing for rain. That a good soaking took place generally on the 25th ult. is something to be grateful for, as until the visitation the soil was so dry, and, in many localities, hard, that even ploughing had to stand still, and cultivation was hindered. To nurserymen and intending planters the rain comes as a veritable God-send, and will set them to work busily for several weeks. It was a remarkable circumstance also, that we should have had so much dry weather with so little frost, so that in somewhat sheltered places, Dahlias, tender as they are, were [till the last few days] still blooming profusely. Mr. Arthur Turner mentioned only the evening before the rain came, that Pompon Dahlias were blooming wonderfully at Slough. A rare thing; indeed, it is long since frost spared our tender plants outdoors as they have been spared this year. Now that rain has so considerably fallen, we may expect broken weather for some time, with speedy frosts. The soil has been greatly cooled, and with everything moist, a sudden fall in the temperature may bring several degrees of frost, and then all tender things will be settled. I hope the outdoor late Chrysanthemums may be spared to us, although growers for cutting, whose plants are housed, pray for some severe frosts to settle the outdoor bloom effectually. With that sentiment I have no sympathy, as we want a few late flowers in our gardens for our own satisfaction as long as possible. It is worthy of note that, in spite of the long spell of autumn drought, leaves are not falling unduly early. Generally, fully three weeks will elapse ere the later trees are stripped, unless white frosts come. Whatever may happen, however, there can be no doubt but that the present rainfall is exceedingly welcome. *A. D.*

TROPÆOLUM SPECIOSUM.—This climber at this place made 10 feet of growth last year, planted as it was at the base of a north wall two years since, in soil consisting of loam, leaf-mould, and refuse soil from the potting-bench. All the soil here is charged with lime, as chalk is freely used as a dressing on the grass land from which the turf was dug, and chalk contains, I think, about 80 per cent. of lime. The foliage of our plants is pale in colour—like many other subjects which object to lime in any form. I do not think that the use of lime in the soil prevents this Tropæolum from growing, as it succeeds pretty well here in this soil. It flowers freely, and the attractive-looking seed come freely also. *E. M.*

—— I should not be prepared to go so far as Canon Ellacombe with regard to this plant, for I have seen it succeed excellently with a chalk subsoil. What it delights in is a dry subsoil. In the Strathern district, where it grows better than anywhere else in the United Kingdom, the subsoil is of this description. A great number of the cottages are covered with it, also the farm-houses, and likewise the splendid terrace-wall at Drummond Castle. It may, however, be grown in any part of the country by digging a pit about 2 feet in depth and 3 in width; and should the subsoil be clay or moisture-holding, 6 inches of stone or rubble should be added. Mr. Divers mentions Mr. Burroughes, who is one of the best amateur gardeners in the country, as a successful cultivator. It is curious how often amateurs succeed with plants of this kind. At Kirkton Manse this Tropæolum is planted in a mound of soil in the corner of a low wall, and by means of faggots is induced to climb into an old Damson tree, which it swathes in a glowing cardinal's robe. It is a fact that it always prefers wood to climb over to anything else. I may mention that this plant was a great favourite with my father, who introduced it wherever he went. *C. A. M. Carmichael.*

—— My experience differs from that of your correspondent on p. 446. The soil here is principally a calcareous loam on limestone and shale, and my Tropæolum grows and flowers best in a border composed in great part of loam and lime rubbish. The spring and brook water here contains so much lime as to kill completely Acacia dealbata, if watered with it; but this Acacia is peculiarly susceptible on this point, as may be noticed in the sickly specimens growing on the limestone at Nice, whilst it flourishes luxuriantly in the granitic soil of Cannes, under otherwise similar conditions. Tropæolum speciosum has the peculiarity in another border of disappearing completely for a year, and reappearing at some yards distant the next year; whilst it was in full luxuriance of flower and berry against a south-west and a north-west wall, it had not appeared above-ground at all in this year (1890) until August; since which it has grown 12 feet into a Garrya elliptica, on whose dark foliage its flowers tell admirably. It dies down to the ground here each year. *R. Milne-Redhead, Holden-Clough, Clitheroe.*

AMPELOPSIS VEITCHI.—A fine example of the above plant covers the entire front of the house in which I reside in Orchard Street, Bury St. Edmund's. The plant was struck as a cutting some six or seven years ago, and planted with but little preparation of the soil. It very soon covered the entire front of the house, and is now growing on the adjoining houses. This species of Virginian Creeper, although deciduous, is nevertheless one of the most useful and ornamental of climbing plants, as it requires no training, and is not subject in this country to the attacks of insects of any kind, and when the leaves fall, it leaves the surface of the wall quite clean, and the net-like branches adhering closely; it has therefore a neat, and even ornamental, aspect, even in the winter. It is found to adhere to surfaces of any kind. At the present season its leaves are possessed of remarkable brilliancy, and are in great request for church decoration and similar purposes, and, when carefully dried, they retain their brilliant colours for years. The plant is sometimes grafted upon the common Virginian Creeper; this, however, is not necessary, and I believe it succeeds best upon its own roots, and is readily increased by cuttings of the ripe wood, or cuttings of the young and growing shoots may be readily struck in bottom-heat, or under a bell-glass, at any time during the summer. *P. G.*

FROST ON THE MORNING OF OCTOBER 28.—At Atherstone, Warwickshire, the temperature as registered by our thermometer, which stands 3 feet from the ground, fell to 15° Fahr., or 17° of frost. Is there any previous record of frost of such severity occurring in the Midlands in the month of October? *T. Woodford.*

POTATOS, WHAT BEST TO GROW.—At this time of year, while the operation of lifting Potatos is being carried out, it appears to me to afford a seasonable opportunity for elucidating a few facts, and comparing notes, as to production, quality, and general utility of a few varieties grown for the use of a large establishment. I confess to being disappointed in one or two varieties, which I will name hereafter. That is why I should be pleased to hear how others have fared. Hitherto, I have grown "Scotch Champions," Reading Hero, Paterson's Victoria, Chiswick Favourite, Adirondack, and Magnum Bonum in the field. The latter is a well-known variety, grown for the servants' hall exclusively, as it does not attain the standard of excellence required for the best table. However, as a disease resisting, and prolific variety, of fair quality, nothing in my opinion will compare with it. In addition to the already named late round varieties of Potatos, I have grown Early Border, Schoolmaster, and Vicar of Laleham, neither of which find much favour at table; Early Border is so shy a cropper as to make it not a profitable variety to plant. Schoolmaster, although "mealy," and looking tempting on the dish, has a peculiar flavour which is not generally liked; Vicar of Laleham is so greatly subject to the disease, that I have had to discard it. Of the late varieties, "Paterson's Victoria" takes precedence as a Potato of the finest table quality. Yes, I think I hear someone echo, "and it takes precedence, too, as being one that is most subject to disease, and a shy bearer." I admit all that, but I must still retain it, until something to equal it shall turn up. Scotch Champions are too wasteful, and this year with me they have come so variable in size, with so many small ones, that I must find a substitute for it. Reading Hero has been discarded, as it discoloured so much after cooking; it is a variety still grown by some of my neighbours, who praise it, and say they can make 1s. 6d. per bushel more of it than any other variety. Chiswick Favourite is a Potato of vigorous growth and constitution, disease resisting, but of such abnormal size and shape, that it will require a long time to get by careful selection a good reliable Potato fit to send to table. Adirondack has only had a trial this year, and I have not yet had judgment passed upon it, so must dismiss it from notice at present by saying there was a fair crop of sound tubers of nice size for use. Having stated the varieties hitherto grown here, I would ask your readers to give me the name of a couple of white round Potatos to supersede Schoolmaster and Champion. What we seem to require is a Potato of the quality of Patersons, with the constitution of Magnum Bonum, Imperator, or Chiswick Favourite. Probably some of your readers might exclaim: "Why ask for such information, when you can be informed from catalogues, &c., of recognised growers? I have a list containing the names of upwards of sixty varieties of round Potatos, surely choice sufficient to satisfy the most fastidious." I answer, the whole list is perplexing, and I being limited to ground, have not the opportunity of growing more than a select few of trustworthy sorts. *D. R. P.*

EARLY NEST BUILDING BY ROOKS.—Your correspondent, "G. C.," asks if any one has noticed rooks building nests at this time of the year. In the North many old stories are told concerning rooks, some of which are extremely superstitious. Some say this autumn building points to the birth in the neighbourhood of a child who will be of importance some day; others say it is a sure sign of a severe winter. I remember to having seen the following lines engraved in a summer-house which stood in a rookery:—

> "Should rooks at fall their nests renew,
> A winter hard they have in view."

Be that as it may, I contend that this renovating of nests is done with the intention of storing a little food for winter use, for I once saw a branch fall with a nest attached to it which contained Walnuts, Crabs, and several pods of field Beans. *G. B. Claydon, Holbecks Park.*

—— In reply to the note of "G. C.," on p. 474, it is a well-known habit of rooks to revisit their nests in autumn, and to seem as if repairing them. In Yarrell's *British Birds*, 4th edition, p. 395, we read, "In autumn the rookery is generally frequented for some days by the birds belonging to it, and they are seen sitting on or about the old nests, occasionally carrying sticks, as though intent on breeding." *C. Wolley Dod, Edge Hall, Malpas.*

FINE FLOWERING OF CATTLEYA BOWRINGIANA.—There is here, at the present time, a plant of Cattleya Bowringiana carrying a spike with seventeen flowers. It would be interesting to learn from any of your readers the greatest number of blooms that a single bulb has been known to carry. *J. Woolford, East Thorpe, Reading.*

HARDY SARRACENIAS.—The editorial note (p. 472) reminds me how successfully Dr. Patterson, of the Bridge of Allan, used to cultivate these plants. To the northern side of one of his well-known Orchid-houses was attached a one-light frame. In this were planted New Zealand Todeas and Sarracenias (Drummondii, if I remember rightly). There was no heat, nor was any protection given at night, yet the coldest winters did not affect the plants, which were in perfect health. *C. A. M. Carmichael.*

NARCISSUS CYCLAMINEUS.—Your correspondent, "C. C. W.," p. 478, may be glad to know that this plant was first figured in the *Gardeners' Chronicle*, December 19, 1885 (fig. 185), the year before it was re-discovered in Portugal, by Mr. Tait. The figure was copied in part from the *Theatrum Floræ*, of 1637. *F. W. Burbidge.*

EARLY PEAS.—It is a practice of some gardeners to sow some early variety of Pea at this season, and I have no doubt that in some gardens it may be worth doing, and Peas gathered a trifle earlier than those sown in the spring. I have tried autumn-sowing here and elsewhere, and have found, after three or four months of attention and anxiety, that the crop was no earlier than from those that were sown three months later; and, moreover, during the winter, it has been the work of a man to go round

every morning and night and set mouse-traps, or dust the rows with lime and soot, to keep slugs and snails from eating the little plants. In spite of these precautions, your Peas go one by one, till there is nothing left but an untidy plot of ground that you are ashamed of any person seeing. It seems to me that this kind of thing is time and labour lost. Last November fifteen rows were sown on a south border, with results as given. Peas were again sown in January and February, and those that were sown the last week in February were a week ahead of those sown in November and January, and better crops altogether. It would seem, therefore, that there is very little to be gained by sowing very early, and if we save time by sowing in February, we also save ourselves all worry of preserving the crop during the winter. Peas are like other plants, they will grow in their proper season when they can go ahead without check, and without so much coddling. It will happen, when they get a sunny day, these autumn-sown Peas flag for want of sufficient roots to support them; at least, that is my experience. Our earliest supplies are derived from seed sown in 4-inch pots, which are repotted into 7-inch pots, and wherein they stay till done with. We grow them in a dry airy house. Green Peas, new Potatos, French Beans, and Strawberries at Easter are considered rare luxuries at that season. The earliest crop outside is raised from seed sown in 4-inch pots in February, and transferred to a south border; and from these plants Peas are invariably gathered about a week or ten days before those sown out-of-doors. These transplanted Peas are protected from wind and frost with some branches of Fir or other evergreens. *W. A. Cook, Compton Bassett.*

EVERGREEN BEECH.—Upwards of twenty years ago, specimens of the Evergreen Beech of Mr. Dilwyn Llewellyn, of Penllergare, near Swansea, were exhibited to the Fellows of the Royal Horticultural Society at South Kensington. From the subsequent remarks upon this Beech, as they appeared in the *Gardeners' Chronicle*, I gathered that it would only do well by the sea. I should be glad to know whether I am correct as to this, for I want to plant it inland, remote from the sea. *John Colebrook.*

PEARS IN CORNWALL.—Not all varieties of the Pear are found to grow successfully near the sea-coast, so that a selection of those which will bear well and ripen their fruits may be esteemed by some of your readers. Our garden is close to the sea, and the following varieties of Pears give satisfaction, and are this year especially: — Williams' Bon Chrétien, Catillac, Beurré Diel, Brown Beurré, Bishop's Thumb, Bergamot d'Esperen, Bürgermeister, Duchess d'Angoulême, Jargonelle, Louise Bonne, Marie Louise, Winter Nelis. Our trees are all of them trained to walls or other supports, as much as a preventive against loss by wind as for other reasons. *J. Macers, Chymoroah, Marazion.*

CASSIA CORYMBOSA.—I send you a branch of Cassia corymbosa for you to see how well it does out-of-doors here, without any protection whatever, winter or summer. The plant is growing against a wall facing south, and it has made shoots this year of more than 6 feet in length, and there are scores of such branches on it as good and better than the one I send, and which, as you will perceive, will be in flower for a long time to come. *James Webber, Somerset.* [The branch our correspondent sent to this office was 6 feet long, full of bloom, and very vigorous, the dark green foliage being remarkable for strength and size. Ed.]

WHAT IS A TRUSS?—This question was discussed at the recent exhibition of the Royal Aquarium in connection with one of the classes for Pompon Chrysanthemums. Prizes were offered by the National Chrysanthemum Society for October-flowering Chrysanthemums, and among the classes was one for twelve bunches of Pompon Chrysanthemums, three trusses to a bunch; and one for six bunches, the same number of trusses to form a bunch. It was curious to notice how differently the exhibitors express their conception of what constitutes a bunch. One exhibitor staged three flower-stems, each carrying a finely developed flower; but one only. Another brought three branches, each branch bearing several branchlets that are generally regarded as trusses. The latter formed quite large bunches, of what many supposed to consist of several trusses. The National Rose Society define a truss as—"a bloom or truss shall be taken to mean a Rose, with or without buds and foliage, as cut from the tree." If this is a good definition, then a side flower-stem from a Pompon Chrysanthemum bearing two or three less or more flowers, should form a truss. But the exhibitor who staged the branches certainly included several trusses on each, according to the definition given by the National Rose Society, and I think the judges should have disqualified him, though they did not do so. In connection with the exhibition of Roses, one bloom is regarded as constituting a truss, though truss is the florists' name for what botanists call an umbel, in which several flowers have their stalks united in one common centre, or, as in Roses, in one common stalk. If a single bloom of a Rose is accepted as a truss, as it is in the definition given by the National Rose Society, then a single bloom of a Chrysanthemum should be so accepted, and is accepted. But a number of trusses on a branch should not be so accepted. But what does the Editor say? *Enquirer.* [Etymologically, and in common usage, "truss" applies not to a single flower, but to a collection of flowers, just as a truss of straw is not one, but a bundle of straws. The Rose Society has a right to put what conventional interpretation it pleases on the terms it uses, but other people are not bound to follow it, especially when as, in this case, it is in error. Ed.]

A SPADE.—I wonder if any gentleman can tell me who invented the spade? This would be a very interesting fact to learn, and it would be doubly interesting to know who improved it to its present form as an implement of torture for the roots of all trees and shrubs coming within range of its tender mercies. I have watched every ironmonger's shop and implement exhibition coming under my notice, and up to the present time I have only found two manufacturers who can make a useful spade; the crooked handled tool of commerce does not possess one good quality for its work: it is weak at the very point where strength is most needed—from the angle at which it is set on its handle, the workman using it loses much power, and unless he leans forward in a constrained and most uncomfortable attitude, it murders the roots of the young trees—in fact, instead of a useful tool, it is simply, as I said before, an implement of torture. Now having found such fault with the spade as generally seen, perhaps you will think I had better describe the ideal spade I use myself, and which only two manufacturers seem capable of producing. I could; but no. I will wait until I have received the castigation my rashness deserves in accusing manufacturers of palming off a bad tool (instead of what ought to be the most valuable implement in the world) on to the innocent race of nurserymen and gardeners! I await it trembling. *Charles Noble, Bagshot.*

SOCIETIES.

ROYAL HORTICULTURAL.

October 28.—Meetings of the several committees were held at The Drill Hall, James Street, Westminster, on Tuesday last. Exhibits were not very numerous, but some interesting subjects were submitted. Chrysanthemums were very fine. The lecture in the afternoon was given by Dr. M. T. Masters, F.R.S., the subject being "Trees and Shrubs for Large Towns." An interesting discussion followed, in which Messrs. G. Nicholson, J. Hudson, G. Wythes, and G. Paul took part.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. H. Herbst, R. Dean, B. Wynne, G. Nicholson, L. Castle, H. B. May, T. Baines, C. Jeffries, H. Turner, H. Cannell, C. Noble, J. Fraser, G. Paul, and the Rev. H. H. D'Ombrain.

Several exhibits of Chrysanthemums were the feature of the display. From Mr. J. H. Crasp, gr. to Lord Wimborne, Canford Manor, Wimborne, Dorset, came two boxes of cut blooms of popular varieties, and very fine samples, too, they were set up with long stalks, and a liberal supply of foliage, a board was raised as a background, which being covered with green-baize, helped to set off the flowers; Comte de Germiny, Source d'Or, Eynsford White, Madame de Sevin, Peter the Great, and Florence Percy, were all good.

Some interesting novelties were sent by Mr. R. Owen, Floral Nursery, Castle Hill, Maidenhead. Duchess of Westminster is a fine addition to the Japanese Anemone section; it is a large flower, the rays very pale pink, almost white, with rose flush, while the disc florets are a mixture of yellow and crimson. Miss Anna Hartshorn is a pretty Japanese, pure white, with broad petals. A sport from Madame Desgrange bids fair to be a good-sized flower, and is pale cream, with a richer-coloured centre. Mr. W. Lane, Japanese, dark amber-brown; Mrs. Irving Clark, Japanese, with twisted petals of cream and pink; Mr. Hillicot is a capital reflexed Japanese, of rich dull amber-brown, tinged with yellow, and darker in the centre.

Messrs. H. Cannell & Son, Swanley, Kent, staged a number of very fine blooms, showing the different varieties in bunches, large size, substance, and clear colour, were conspicuous. La Triomphante, Mrs. Neville, Sabine, Alcion, Avalanche, Gorgeous, Eugénie Giat, Japanese, dark carmine-lake, with pale reverse; and W. Tricker, incurved Japanese, bright rose-pink, broad petals, were among the best.

Several plants in pots, carrying good solid blooms, were contributed by Messrs. J. Laing & Sons, Forest Hill, S.E. Among them the incurved varieties, Miss M. A. Haggas, yellow, and Violet Tomlin, were well represented; Viviand Morel, a reflexed Japanese, shaded rosy-pink; and Mdlle. Marie Hoste, a pure white, broad-petalled reflexed Japanese, are good flowers.

A collection of cut blooms of Chrysanthemums, arranged on a board covered with moss and edged with Adiantum, and backed by small Palms and Dracænas, came from Mr. G. Wythes, Syon Gardens, Brentford, and a capital lot they were, too, the admixture of other plants being very effective. Elaine, Avalanche, Source d'Or, Cloth of Gold, Margot, Peter the Great, Duchess of Manchester Gluck, Cossack, and Lord Wolseley were each good. Mr. H. Jones, The Cedars, Torquay, sent a self rose-pink sport from Sœur Dorothée Souillé.

A great number of Cyclamens in pots were staged by Mr. W. Taylor, Twickenham Road, Isleworth, and he included several plant] showing very prettily marbled foliage.

Messrs. W. Cutbush & Son, Highgate, sent a finely-berried lot of Pernettya mucronata vars.; and Mr. R. Dean, Ealing, showed seedling Pentstemons, the strain of which was Commended.

A very pretty border Carnation, named Saccharissa, pale yellow flushed rose, and flaked deeper rose, came from Mr. Bridger, Penshurst Place, Tunbridge; it was apparently a free-flowering sort, and the specimens exhibited had been cut from the open on Monday.

From the Royal Gardens, Kew, came flowering species of the following interesting plants:—Philodendron Simsii, the spathe of which is rich carmine-rose at the base, whilst the upper portion of the spadix is ivory-white; P. dolosum, greenish-yellow outside, and carmine on the inner face; Ipomœa Briggsi, a variety of I. Horsfalliæ, with bright carmine flowers, smaller than those of the type; Spathiphyllum longirostre with a spadix of cream and a leaf-like spathe of green; Solandra grandiflora, flowers of large size, trumpet-shaped, buff with broad crimson-brown lines in the tube; Cleome heptaphylla, a stove annual growing 6 feet high, and having a profusion of bright rosy lilac flowers; also Solanum Seaforthianum, with mauve flowers.

Messrs. W. Paul & Son, Waltham Cross, N., sent a number of branches of hardy trees and shrubs, Berberis, Almond, Pyrus, &c., being included; also a plant of Berberis Thunbergii, with its scarlet leaves, which made a bright show.

Orchid Committee.

Present: Dr. M. T. Masters, F.R.S., in the chair; and Messrs. J. O'Brien, C. T. Pilcher, J. Dominy, H. M. Pollett, De B. Crawshay, A. H. Smee, S. Courtauld, and J. Douglas.

The chief item of interest before the committee was an exhibit by M. Linden, l'Horticulture Internationale, Parc Leopold, Brussels, of a series of fourteen varieties of Cattleya Warocqueana; in C. W. amœna, the flower is very light rose, and the lip pale, with a deep central blotch; the variety Victoria is rose, with a deep rose lip, entirely one colour. Cattleya Lindeni was also sent; it is of the Hardyana section, with sepals of pink, petals lilac-rose, with lighter veins, while the lip is very rich crimson, with two lateral yellow blotches in the throat.

Three finely-flowered spikes of the grand Vanda Sanderiana, one bearing a dozen flowers, and all

rom one plant, came from Mr. R. Young, Liverpool; it is a very rich coloured form. Odontoglossum grande, with good flowers, was sent by W. J. Nicolls, Esq., 258, Kingsland Road, N.E.; and blooms of Lælia Perrini varieties, ranging from purest white to mauve-lilac, came from Messrs. Seeger & Tropp, East Dulwich, N.

Fruit Committee.

Present: Sir C. W. Strickland; and Messrs. J. Lee, T. F. Rivers, P. Crawley, R. Hogg, J. Cheal, J. McIndoe, T. J. Saltmarsh, G. W. Cummins, G. Wythes, J. Hudson, and W. Warren.

Messrs. J. Carter & Co., High Holborn, W.C., sent what should prove to be a desirable acquisition, namely, a white-skinned Jerusalem Artichoke; they also sent a very large Cauliflower. Mr. W. Smythe, Basing Park Gardens, Alton, sent a seedling Grape, which greatly resembles Gros Colmar. Mr. T. Laxton, Bedford, sent specimens of the Portugal Cabbage, Couve Tronchouda. Mr. Hunt, Ashlea Park, sent samples of Apples of good appearance, but no great merit. Mr. G. Wythes showed the green-top Cheltenham Beet. Fruits of the Noble Strawberry were sent by Mr. Colbourn, Woolhampton; and Mr. R. Dean sent fruits of Apples Grange's Winter Pearmain and Nouveau Poitou. Endives and Potatos, both in great variety, from the trial collections at Chiswick, were good.

Awards were made as follows:—

First-class Certificates.

To Berberis Thunbergii, from Messrs. W. Paul & Son.

Awards of Merit.

To Chrysanthemum Duchess of Westminster, from Mr. R. Owen.

To Chrysanthemum Miss Anna Hartshorn, from Mr. R. Owen.

To Chrysanthemum Eugénie Giat, from Messrs. H. Cannell & Sons.

To Chrysanthemum W. Fricker, from Messrs. H. Cannell & Sons.

To Chrysanthemum Miss Violet Tomlin, from Messrs. J. Laing & Sons.

To Chrysanthemum Miss Haggas, from Messrs. J. Laing & Sons.

To Chrysanthemum Viviand Morel, from Messrs. J. Laing & Sons.

To Chrysanthemum Mdlle. Marie Hoste, from Messrs. J. Laing & Sons.

To Seedling Pentstemon, the strain from Mr. R. Dean.

Medals.

Silver Flora, to M. Linden, for a group of Orchids.

Silver Banksian, to Mr. T. H. Crasp, for a group of Chrysanthemums; to Mr. W. Tayler, for a group of Cyclamen.

Bronze Banksian, to Messrs. W. Paul & Son, for hardy shrubs (cut); to Mr. G. Wythes, for a group of Chrysanthemums; to Mr. H. Cannell, for a group of Chrysanthemums; to Mr. Cutbush, for a group of Parnettyas.

By the Orchid Committee.

Awards of Merit.

To M. Linden, for Cattleya Lindenii.

NORTH OF SCOTLAND HORTICULTURAL ASSOCIATION.

The monthly meeting of this Association was held in the Music Hall, Aberdeen, on October 27. There was a good attendance, and Mr. D. M. Smith presided. A paper by Mr. Donald, gardener, Denmore, on "The Gooseberry," was read; and, after giving an interesting history of the plant, Mr. Donald went on to speak of its cultivation, and the advances that have been made in recent years in size of berry and productiveness.

Proceeding to speak of the profitable cultivation of the berry, he went on to say, that an acre containing 1210 plants, in a good season should yield £120; but speaking generally, the average return was something like £75. With reference to the productive powers of the Gooseberry of other countries, he did not think that this country had any serious competition to meet. He then made some remarks on the uses of the fruit, and gave a number of hints in regard thereto. The yellow, green, and white varieties were mostly used in a fresh state, being generally of a sweeter and more palatable nature, whilst the smaller red sorts are preferred for making into jams, unripe berries of all kinds being equally adaptable for the making of jellies, &c. In the matter of over-production, it was his opinion that the present supply would be as nothing to the demand were the nature of the fruit better understood, and better managed. He would suggest as as interesting matter for the Fruit Committee of that Association, to make a specialty of raising new varieties, flavour, and the maintaining of flavour, being the chief points in view. Prizes might be offered for varieties possessing merits over existing varieties. New methods of preserving ought also to be sought. Why, he asked, were not the berries preserved in a dry state as well as a liquid? He also spoke of the manufacture from the Gooseberry of brandy and wine; and while he might not commend this, he thought a good cordial or temperance beverage could be made from the berry. The demand for fruit, he said, was growing, and if cultivators did not keep their weather-eye open, they, together with their fruit-producing privileges, would be nowhere. He concluded his interesting lecture by commending to amateur growers the culture of the berry as an interesting and profitable recreation.

A discussion followed, and at the close, Mr. Donald was thanked very warmly for his paper.

Mr. Minty, Canal Road, exhibited two beautiful specimens of Chrysanthemums grown outside, which showed the mildness of the season hitherto.

CHERRIES FOR MARKET.*

Kent is the greatest Cherry producing county in England. They were introduced there in the time of Henry VIII., and put under the care of Richard Hains, the King's fruiterer at Newington, a village near Sittingbourne, on the main road from London to Dover, and the family is now represented there by men of the same name in the fruit trade. This parish still maintains its reputation as the best district for the culture of the Cherry, and in the deep brick earth there they attain to a great size, as much as 70 or 80 feet high. The annual sales attract buyers from all parts, and are the event of the year in the locality.

The older orchards have been planted in a haphazard way, but the more modern are in straight lines at 24 to 48 feet apart, and are perfect visions of beauty when in full flower, with their graceful wreaths of snowy-white, the beauty of which cannot be imagined by those who have never seen them; in fact, for the blossom alone, Cherries are worthy of a place in parks and garden enclosures. All these orchards are in grass, and form convenient sheltered spots for lambing and for cattle, which, however, are not put in when the leaves fall, or into young orchards, where they eat the boughs. In order to produce the finest fruit, large, juicy, and of good colour, these orchards are maintained in good heart by fatting sheep in them, such being fed on corn, cake, and other rich foods. Pigs are sometimes kept in such orchards, and in order to get direct benefit they should be penned in a limited space until the grass is eaten away, and then they are moved to the next space, and so on. It is better to do these limited portions thoroughly than to allow the animals a full run. During the time the leaves or fruits are on, all cattle are kept out, as they will break the lower boughs, and in young orchards do irreparable damage.

In starting fresh plantations, there are several ways of procedure:—

(A). If the land is already in grass, holes of 2 feet square are prepared, and the trees planted at 24 to 30 feet apart, the roots being as much upon the surface as possible, and they are "cradled" with Chestnut battens securely fixed. As this wide planting is a great loss of space, the smaller-growing Apples, Plums, and Damsons are planted between them, such extra trees paying for their cost before the Cherries come to a profitable age; and when the Cherry boughs meet the other trees, which would be in fifteen or twenty years, the former are cut out. Old Cherry orchards cannot be too highly manured, and one grower told me he had fatted about four sets of sheep per annum in his orchards, and that the Cherries were so fine, that he sold the crop for £1000 on a small average; but young orchards of Cherries should only be planted in the ordinary soil, without manure.

(B). Another way, and one which brings a quicker return, is to plant Cherries at 30 feet apart, and fill up with Apples, Pears, or Plums at 15 feet, and then to plant the ground with red or black Currants and Gooseberries at 5 or 6 feet apart. In this case, the land has to be dug annually, and heavily manured in winter, but a crop is taken the second year, and in the fourth or fifth year the Apples and other fruits come to bear, the Cherries following about the sixth or eighth year.

It is important that land under Cherry trees should not be cultivated, and for the first three or four years, 4 feet from the trees is left untouched; this is gradually increased when in about ten or twelve years the bush fruit is removed and the land laid to grass, the intermediate trees being removed as before.

(C). A Kentish plan is to put Cherries in Hop gardens at 36 feet apart, and after eight or ten years to lay the whole to grass; they make much progress in this way, as Hops must be cultivated highly to be remunerative. A danger in this case arises from too free growth, as gum is induced by occasional frosts acting on the sappy wood.

The pruning of Cherries is of the simplest. They are best allowed a year's growth before cutting back, which should be severely done in order to produce a well-formed balanced head of, say, five branches. The extra shoots are cut away, and from this time onward, the trees make a naturally regularly-balanced head, and only require the boughs to be thinned when they cross each other, or are too thickly placed. A man should be able to get his head and shoulders between them easily. If any shoots break or twist off in a gale, or through the burden of fruit, they should be cleanly cut away with a sharp knife, and if the form of the tree is seriously injured by this loss, the trees must be cut in hard to form them again; but, as a rule, the less cutting there is the better, and if a saw is necessary, the exposed end should be rounded with a sharp knife to assist Nature in healing the wound. All young orchards should have the fruit gathered by means of step ladders, as the boughs cannot bear the weight of the ordinary ladders when young (under ten years old).

When the trees make over a foot of growth yearly they will be better left without any stimulants, but if the new wood is but 6 to 9 inches long they should be assisted with the manure before named, or by the application of liquid-manure or top-dressings of any description of dung, or failing that bone-dust, Odam's blood manure, or Thomson's manure, or any similar chemical fertiliser will assist them. The Cherry naturally roots upon the surface, and feels the benefit at once.

In making new orchards care should be taken to plant a considerable quantity in one spot, otherwise birds will take the crop. A few Cherries in a mixed orchard are rarely a paying investment. When in bulk it pays to have a man on the ground day and night, to scare or shoot the birds. To do this a hut should be provided for him to sleep in, and he can thus keep off other larger animals to whom Cherries are a luxury. In the day he assists to move the ladders for the pickers, who in Kent are frequently women, who earn good money at the work, either by day pay or agreement per half-sieve of 24 lb. One gathering generally clears the trees, but it pays well to pick the sunny side first, and also the outsides of the branches; this causes the remaining fruit to swell up, and if these larger examples are marketed in 12 lb. basket, or "quarters," they frequently make 20*s.* to 30*s.* per bushel, or 5*d.* to 9*d.* per lb.

In setting out an orchard of Cherries, care should be exercised to keep all of one kind together, and if alternate rows of the stronger kinds (such as Napoleon, Black Tartarian, Bigarreau, and Elton are made to alternate with such growers as Black Cluster or Carone, Black Hearts and Brown Hearts), the grass

* A paper by Mr. G. Bunyard, read at the Conference of the British Fruit Growers' Association, Crystal Palace, September 5.

below is not so much shaded, and consequently is of better feeding quality. Another useful and delicious race of Cherries, but little grown out of Kent, are what are locally called Reds, being the Kentish and Flemish, or the Montmorency of the Continent.

These are rather later than the sweet Cherries, and are far more delicious to preserve or for tarts than any others; in fact, the jam from these sorts is a perfect sweetmeat, and comes near to Tamarinds in its delicate and pronounced ratafia-like flavour. These (Reds) never make large trees, and are short lived, so that they are frequently used to plant between the larger kinds, or for the odd distances on the outsides, or in angles where there is not space for the strong growers. I would specially commend these to the Scotch growers, who would find them even better than their noted Dundee marmalade. After the main boughs decay they send forth fresh growth from the stem or the stumps, and in that way the trees fruit for fifty years, but their average life is only about twenty-five years, by which time they have well paid their way. This race is also the best for drying. The Morello Cherry is of similar growth, succeeds well as a standard, while the May Duke and others of that race are useful for sheltered spots.

As regards varieties, the following list includes those generally planted for profit, and can be relied on for extended culture; fully-developed trees of two or three years in the head are worth 180*s.* to 250*s.* per 100, but the Kent growers prefer those with one year's heads, at 130*s.* to 170*s.* per 100.

White or Heart Cherries.—Kent Bigarreau, or Amber, Napoleon Bigarreau, Florence, Elton, Frogmore Bigarreau, Governor Wood.

Red Cherries.—Kentish, Flemish, Olivet, Morellos,

Black Cherries.—Early Rivers, Werder's Black Heart, Waterloo, Black Eagle, Black Cluster or Carone.

Duke Cherries.—May Duke, Late Duke, Royal Duke.

For private gardens the following are useful as standards:—Early Lyons, Emperor Francis, Ludwig's Bigarreau, Nouvelle Royale, Tradescant's Black.

In connection with this subject, I would suggest that orchard trees should have at least a stem of 6 feet, and should be trees worked on the wild Gean, as the stems so formed are hardier and less liable to gum and die than when they are worked low and run up on their own stems; and grafted trees are preferable to those that are budded.

Grass orchards of Cherries are largely planted in Kent, as there is always the chance of three crops, viz., Cherries, mutton, and wool, and it is rare for all these to fail. The following notes may interest your members as to the nature of Cherry orchards in Kent. The custom is to sell the fruit upon the trees about fourteen days after the flowering, and from the fall of the hammer the buyer puts in his own men, and takes all the risk, finding his pickers, overlookers, packers, &c., and delivers them to the rail himself, the grower simply taking the proceeds of the sale, less 5 per cent. commission. When it is considered that this only represents a part of the produce of the land, you will understand that a Cherry orchard on a holding often adds letting value to an estate or single farm. In fact, a Cherry orchard never goes begging for a tenant. From £20 to £40 per acre is an average price for an established orchard; choice lots have made £80 per acre. Plantations of dwarf Cherries are not grown, except the Morellos, which, as pyramids, bear as fine fruit as from a wall, and from the large number of trees per acre must prove a profitable investment.

There is yet another Cherry grown in Kent of great importance. It appears to be the wild Morello, or the native form of it. This produces a small flat fruit, which is somewhat acid in taste, but the juice is of high specific gravity, and is the base of the famous Grant's Morello Cherry brandy, which is made at Maidstone only, and is to the so-called Cherry brandies of the trade and the Kirkschwasser of the Continent are what real Highland whisky is to poor gin. The maker is a neighbour of mine, and a most conscientious painstaking and scientific distiller, who spares no pains or expense to maintain the high qualities of this wholesome and delicious cordial. The growth of this tree resembles a Birch more than a Cherry, and it soon assumes a pendent form from its copious crop and the wiry growth it makes yearly.

I have dealt hitherto with Cherries on a large scale, but they may be profitably grown by cottagers on the gables of their houses, and by farmers on their walls and buildings, and will in these positions produce fine large fruit, which can readily be protected by fish netting, which is doubtless cheap in these parts. Such fruit would be ready to pick before the outside crops, and command a good price packed in ½ lb. or 1 lb. punnets.

The packing of Cherries is in Kent done in this way. After having first lined his basket with blue paper, the ends of which lap over about 1½ foot (in order to turn back to cover the fruit when the basket is full); the fruit being gathered, the packer carefully passes them through his hands in tipping out the picker's basket, and then removes any bird-pecked, unripe, or smashed fruit, and with a quick shake settles the fruit firmly in the receptacle. This is generally placed on the scales, so that the proper weight (24 lb.) is given, allowance being made for the basket. He then levels the top with his hand, and spreading the paper over and tucking in the edges, places a small portion of bracken, short dry grass, or fine straw upon the top, and fastens this with two pieces of wood pointed at each end to push under the rim of the basket. After cutting off the ends that protrude beyond the outside of the rim, the work is done.

The baskets have a hollow base, so that when set one on the other, the fruit is not smashed. The sticks mostly used to pack are split Hazel of about 2 inches round, or the shoots of the Cob-nuts taken out in "wanding" the Nut plantations.

The price of Cherries varies much with the weather and the crop, from 1*d.* to 8*d.* per lb. In your district, where possibly Cherries could be delivered direct to the shops, the packing at the top could be avoided by using baskets which fit one on the other, and they would in this way be less bruised, and open, fresh, and inviting.

Garden Cherries.

For pyramids on Mahaleb stock, where they can be netted, Early Rivers, Belle d'Orleans, May Duke; Black Eagle, Governor Wood, Archduke, Nouvelle Royale, Royal Duke, Waterloo, Ronald's Late Duke, and for tarts, &c., Morello, Kentish Red, Flemish, and Olivet. For walls, the best are Early Lyons, Early Rivers, May Duke, Governor Wood, Black Eagle, Bigarreau Napoleon, Florence, Bigarreau de Mezel, Black Tartarian, and St. Margaret's. Amongst the little known kinds, Emperor Francis, Guigne de Winckler, Ludwig Bigarreau, and Windsor from America, we think, are destined to become established favourites.

Cherries are in some places very successfully grown up the rafters of cold Peach-houses as single cordons, grand examples are thus produced which attain a large size. For this purpose the following are useful, and possibly cordons on the Mahaleb are preferable—Black Eagle, Black Tartarian, Florence, Early Rivers, Bigarreau Napoleon, St. Margaret's, would be the best.

The Weather.

THE PAST WEEK.

The following summary record of the weather for the week ending October 25, is furnished from the Meteorological Office:—

"The *weather* has been extremely dull in nearly all parts of the kingdom, and the air damper than of late. Rain has fallen from time to time, but the amounts have, as a rule, been slight.

"The *temperature* has been above the mean in Scotland, Ireland, and the northern parts of England; in the other English districts it has been generally below the normal. The highest of the maxima were recorded at most stations either on the 23rd or 24th, and varied from 62° in 'Scotland, E.,' to 58° in 'England, N.W.' The lowest of the minima, which were recorded on the 25th in the north, but on irregular dates elsewhere, ranged from 27° in 'Scotland, W.,' and 'England, S.W.,' and 29° in the Midland Counties, to 36° in 'England, S.,' 37° in 'Ireland, N.,' and 39° in the 'Channel Islands.'

"The *rainfall* has been more than the mean in 'Scotland, N.,' and equal to it in 'England, N.E.,' but in all the other districts a deficit is shown.

"*Bright sunshine* has been very deficient, the percentage of the possible amount of duration having ranged from 4 in the 'Midland Counties' and 5 in 'England, N.E.,' to 15 in 'Ireland, S.,' and the 'Channel Islands,' and 24 in 'England, S.W.'"

By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending Oct. 25.	Accumulated. Above 42° for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	2 +	39	0	+ 197	— 102	1 +	215	44.8	10	24
2	3 +	39	0	+ 50	— 90	2 —	177	25.4	13	30
3	2 +	47	0	+ 136	— 111	0 av.	149	19.7	5	30
4	1 —	41	0	+ 55	— 47	4 —	147	18.7	10	38
5	1 —	34	0	+ 19	— 44	3 —	144	18.1	4	33
6	1 —	49	0	+ 36	— 76	3 —	142	21.6	12	36
7	2 +	47	0	+ 80	— 93	7 —	182	41.1	12	31
8	1 +	49	0	+ 124	— 92	1 —	170	27.4	11	30
9	0 av.	56	0	— 12	+ 7	5 —	171	28.9	24	36
10	4 +	62	0	+ 109	— 73	2 —	198	28.6	8	29
11	4 +	73	0	+ 120	— 25	5 —	183	31.7	15	33
12	1 —	74	0	+ 59	— 22	5 —	164	24.9	15	43

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

Trade Notice.

MESSRS. CORNISH AND CO.,

of Peacock Nurseries, Hammersmith, beg to state in reply to a recent advertisement, that Mr. Hill has not changed his address.

The promised Reward may be sent to the Gardeners' Orphan Fund.

Markets.

COVENT GARDEN, October 30.

Market with little alteration. Kent Cobs in better supply, owing to the advance prices of 5*s.* per 100 lb. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	*s. d.*		*s. d.*	*s. d.*
Apples, ½-sieve	3 6-	7 0	Melons, each	0 6-	2 0
Cobs, Kent, 100 lb.	75 0-	80 0	Peaches, dozen	3 0-	12 0
Grapes, lb.	0 9-	2 9	Pine-apples, St. Michael, each	2 0-	6
Lemons, per case	20 0-	40 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, each	0 4-	0 6	Lettuces, per dozen	1 6-	...
Beans, French, lb.	0 4-	0 6	Mushrooms, punnet	2 0-	...
Beet, red, per dozen	1 0-	2 0	Mustard and Cress, punnet	0 4-	...
Carrots, per bunch	0 6-	...	Parsley, per bunch	0 4-	...
Cauliflowers, each	0 3-	...	Shallots, per lb.	0 6-	...
Celery, per bundle	1 6-	2 0	Spinach, per bushel	2 0-	...
Cucumbers, each	0 4-	0 6	Tomatos, per lb.	0 9-	...
Endive, per dozen	2 0-	...	Turnips, per bunch	0 4-	...
Herbs, per bunch	0 4-	...			

POTATOS.—Our market is gradually getting more settled. Best samples of Magnums and Bruce, 80*s.* to 90*s.*; Snowdrops, 85*s* to 95*s.*; Imperators, 70*s.* to 80*s.*; ordinary and inferior samples, 45*s.* to 70*s.* Supplies not so heavy, and stock at Potato dèpôts reduced this week, *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	18 0	Ericas, various, doz.	8 0-	18 0
Aspidistra, doz.	18 0-	42 0	Ferns, in var., doz	4 0-	18 0
— speci. plants, each	7 6-	10 6	Ficus elastica, each	1 6-	7 0
Asters, per doz.	4 0-	9 0	Foliage plants, various, each	2 0-	10 0
Begonias, per doz.	4 0-	6 0	Fuchsia, per doz.	3 0-	6 0
Bouvardias, p. doz.	9 0-	18 0	Heliotrope, per doz.	4 0-	6 0
Chrsanthem., p. doz.	4 0-	18 0	Hydrangeas, doz.	9 0-	18 0
— specimen plants, each	2 6-	5 0	Liliums, various, per dozen	9 0-	18 0
Coleus, per dozen	2 0-	6 0	Marguerites, doz.	6 0-	12 0
Cyperus, per dozen	4 0-	12 0	Mignonette, per doz.	4 0-	6 0
Dracæna terminalis, per dozen	30 0-	60 0	Palms in variety, each	2 6-	21 0
— viridis, per doz.	12 0-	24 0	Pelargoniums, scarlet, per dozen	3 0-	6 0
Euonymus, in var., per dozen	6 0-	18 0	Solanums, per doz.	9 0-	15 0
Evergreens, in var., per dozen	6 0-	24 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0-	4 0	Mignonette, 12 bun.	1 0-	3 0
Asters, 12 bunches	4 0-	9 0	Pelargoniums, scarlet, 12 spr.	0 4-	0 6
Bouvardias, per bun.	0 6-	1 0	— dozen sprays	0 6-	0 9
Callaæthiopica, 12 bl.	4 0-	8 0	Primulas, double, 12 sprays	0 6-	1 0
Carnations, 12 blms.	1 0-	2 0	Pyrethrum, 12 bun.	2 0-	4 0
— 12 bunches	4 0-	9 0	Roses, Tea, per doz.	0 6-	2 0
Chrysanth., 12 bun.	3 0-	12 0	— coloured, dozen	2 0-	4 0
— 12 blooms	1 0-	3 0	— red, per 12 bun.	6 0-	12 0
Dahlias, 12 bun.	2 0-	4 0	— Safrano, dozen	1 0-	2 0
Eucharis, per dozen	4 0-	6 0	Stephanotis, per 12 sprays	4 0-	6 0
Gardenias, 12 blooms	2 0-	4 0	Tuberoses, 12 blms.	0 3-	0 6
Gladiolus, 12 bun.	6 0-	12 0	Violets, 12 bun.	1 0-	2 0
Heliotropes, 12 spr.	0 6-	1 0	— Parme, Fr., bun.	2 6-	3 6
Lilium, var., 12 bl.	0 6-	4 0	— dark, Fr., bun.	1 0-	2 0
Maiden Hair Fern, do	4 0-	9 0			
Marguerites, 12 bun.	3 0-	6 0			
Michaelmas Daisy, 12 bun.	4 0-	8 0			

ORCHID-BLOOM in variety. Not over plentiful.

SEEDS.

LONDON: *Oct.* 29.—Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, London, E.C., write that the seed markets, as usual at this season, are now thinly attended, with a small amount of business doing. As regards red Clover seed, buyers for the moment hold aloof, preferring apparently to play a waiting game. The same can be said of Alsike, white Trefoil, and Rye-grasses. For Rape seed, higher prices are asked. White and brown Mustard seed continue cheap. Winter Tares now offer at temptingly low rates. The new Hemp seed, just arrived here is obtainable on reasonable terms. Blue Peas keep firm. Linseed steady. No change in Canary seed.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending October 25 and for the corresponding period in 1889:—1890, Wheat, 31*s.* 0*d.*; Barley, 29*s.* 10*d.*; Oats, 17*s.* 3*d.* 1889, Wheat, 30*s.* 4*d.*; Barley, 30*s.* 11*d.*; Oats, 16*s.* 11*d.*

FRUIT AND VEGETABLES.

STRATFORD: *October* 28.—There has been an excellent supply during the past week, and a brisk trade was done at the undermentioned quotations:—Cauliflowers, 4*s.* to 6*s.* per tally; Cabbages, 2*s.* to 4*s.* do.; Savoys, 2*s.* 6*d.* to 4*s.* 6*d.* do.; Turnips, 3*s.* to 3*s.* 6*d.* per dozen bunches; do. 25*s.* to 40*s.* per ton; Carrots, household, 45*s.* to 50*s.* do.; do., cattle feeding, 26*s.* to 33*s.* do.; Mangels, 16*s.* to 19*s.* do.; Swedes, 18*s.* to 20*s.* do.; Onions, English, 95*s.* to 110*s.* do.; do., Dutch, 4*s.* to 4*s.* 6*d.* per bag; Apples, English, 3*s.* 6*d.* to 7*s.* per bushel; Turnips, 3*s.* to 3*s.* 6*d.* per dozen bunches; Celery, 6*s.* to 10*s.* per dozen rolls; Carrots, 2*s.* 6*d.* to 3*s.* per dozen bunches; Dutch Apples, 14*s.* to 16*s.* per barrel; Watercress, 7*d.* per dozen.

POTATOS.

BOROUGH AND SPITALFIELDS: *October* 29.—Quotations.—Hebrons, 60*s.* to 90*s.*; Regents, 50*s.* to 75*s.*; Magnums, 55*s.* to 80*s.*; Imperators, 55*s.* to 80*s.* per ton.

SPITALFIELDS: *October* 29.—Quotations:—Early Rose, 50*s.* to 55*s.*; Magnums, 50*s.* to 70*s.*; Regents, 50*s.* to 80*s.*; Champions, 50*s.* to 60*s.*; Imperators, 55*s.* to 90*s.*; Hebrons, 60*s.* to 85*s.* per ton.

STRATFORD: *October* 29.—Quotations:—Magnums, light, 55*s.* to 75*s.*; do., dark, 45*s.* to 50*s.*; Imperators, 50*s.* to 70*s.*; Hebrons, 50*s.* to 85*s.* per ton.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80*s.* to 102*s.* 6*d.*; do., inferior, 46*s.* to 75*s.*; hay, best, 60*s.* to 87*s.*; inferior do., 29*s.* to 50*s.*; and straw, 24*s.* to 39*s.* per load.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

DIANTHUS PULCHERRIMUS.—Does any horticulturist, nurseryman, or amateur, in England, still possess Dianthus pulcherrimus, syn. D. japonicus? For a plant of this, the undersigned would be willing to make an adequate exchange. *Max Leichtlin, Baden-Baden.*

NOTICES TO CORRESPONDENTS.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

RHUBARB ROOTS: *V. J.* The grubs found in your Rhubarb roots are those of the common cockchafer (see fig. 103). Their appetite is rapacious.

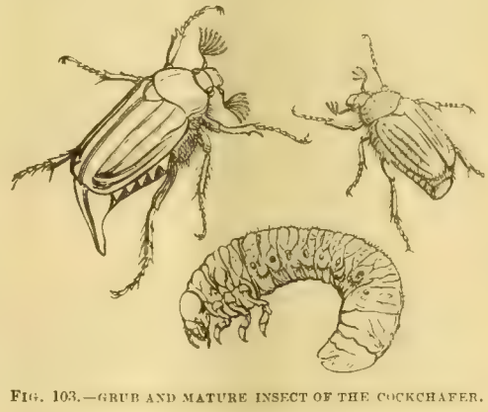


FIG. 103.—GRUB AND MATURE INSECT OF THE COCKCHAFER.

CATTLEYA DISEASED: *Le Malheur.* The plant is attacked by a fungus, the Cladosporium orchidearum, described by Mr. Worthington Smith in these pages on October 11 this year. The fungus is in different stages of growth. Carefully cut away any affected parts of the plant as soon as discovered and burn it, and if necessary, the whole plant. Only thorough measures are of any use.

CHRYSANTHEMUM LEAVES EATEN: *Constant Reader.* Grub of a species of Weevil.

CHRYSANTHEMUM SHOWS: *J. G. C.* For a list of these see p. 501 of this number.

CORRECTION.—The answer given to "Southampton," at p. 478 of our last issue, should have been Staphylea trifoliata, not "Ptelea," &c.

GRAPES: *P. B.* The berries are suffering from "spot." We will investigate the matter further.

HOUSES: *Civis.* We cannot recommend the houses you name for the purpose mentioned.

LEAF BORER: *S. Ray.* Hand-picking is the only cure. The plant is the common Wormwood Artemisia vulgaris.

NAMES OF FRUITS: *W. H. Beale.* Apple Golden Reinette.—*W. C.* 1, Marie Louise; 2, Hacon's Incomparable; 3, Chaumontelle; 4, Beurré Bose; 5, Althorp Crassam.—*Apples.* 1, Coklinville Seedling? 4, Autumn Pearmain.—*S. F. Winch.* 1, Mannington's Pearmain; 2, Pine Golden Pippin; 4, Flower of Kent; 5, Grange's Pearmain; others not recognised.—*A. R. L.* 1, Gloria Mundi; 2, Yorkshire Beauty; 3, Winter Hawthornden.—*J. T.* 1, Sweeney Nonpareil; 3, Claygate Pearmain; 4, Lord Derby; 5, Ribstone Pippin; 6, Brabant Bellefleur.—*C. F. S.*—1, Warner's King; 3, Fearn's Pippin; 4, Golden Noble; Pear Louise Bonne of Jersey.—*W. S.* 1, Easter Beurré; 2, Glout Morçeau; 3, Gansell's Bergamot; 4, Beurré Rance; 5, Chaumontelle.—*W. Farr.* See under H. Farr last week.

NAMES OF PLANTS: *C. H.* (Labels displaced — we guess at the names). 1, Not recognisable; 2, Anemone japonica; 3, Antennaria margaritacea; 4, Phygelius capensis; 5, Monarda didyma; 6, Achillea millefolium, pink variety.—*T. S.* 1, Cotoneaster frigida; 2, Helianthus multiflorus, double fl.; 3, scrap not recognisable—a Helianthus; 4, Browallia elata; 5, Chrysanthemum lacustre.—*C. W. Dod.* Stachys Betonica var. major. *D. D.—Civis.* Echinops Ritro.—*C. H. J.* It is impossible to name such scraps with certainty, we think they are as follows:—1, Cupressus Lawsoniana; 2, Thuia (Biota) orientalis; 3, not known; 4, Juniperus, perhaps virginiana; 5, Thuiopsis borealis; 6, Picea cephalonica; 7, Colutea arborescens, Bladder senna; 8, Picea excelsa, or perhaps obovata.—*H. G., Belfast.* 1, Pulmonaria officinalis; 2, Euphorbia Lathyris, Caper Spurge; 3, Pittosporum tenuifolium; 4, Physalis alkekengi, Bladder Cherry; 5, Polygonum complexum; 6, Alchemilla alpina, Lady's mantle; 7, Lotus Jacobea; we shall be glad of your promised note if short and appropriate.—*L. P.* 4, Houttuynia cordata; 5, Calceolaria; 6, Erica cedonodes; others not found.—*E. Sandford.* Cirrhopetalum cornutum.—*Miss Hornby.* Teucrium montanum; Senecio abrotanifolius; Saponaria ocymoides.—*S. P.* Rosa myriantha, Digitalis ferruginea, D. purpurea.

NATIONAL CHRYSANTHEMUM SOCIETY'S CATALOGUE: *A. E.* To be obtained by applying to the Secretary of the Society, Mr. R. Dean, Frampton Park Nursery, Hackney, N.E.

OILED PAPER FOR FRUIT TREES: *W. T.* Ask some dealer in horticultural sundries.

PLANTS GOING OFF IN CORRIDOR: *W. S.* We still think it must be the lighting gas, or fumes from a flue.

RASPBERRY SEEDLING: *Admiral Sir G. Gifford.* We think your seedling is as good as Merveille de Quatre Saisons, and coming in so late in the autumn as it does, it is of great value. The flavour is good.

SPAN-ROOFED GLASS-HOUSE: *H. L.* If you have no more heat at command than will keep out the frost, the house is not adapted for forcing. It might be utilised for bringing into bloom slowly, Lilac, Rhododendrons, Azalea mollis, Prunus, Staphylea Colchica, Hyacinths and other Dutch bulbs, after they have become well rooted.

VINE ROOTS: *Bywater.* Without being on the spot we can scarcely tell you what is wrong with the twenty-year old Vine or the border. Possibly the soil is in bad condition, and naturally the roots of the Vine have suffered in consequence. When renewing the border, plant new Vines rather than replant the old ones.

VINERY: *P. W. C.* The vinery would do well for Tomato culture, but the Beans that you intend to grow in the winter would only do well in pots brought close to the light. The varieties named are suitable—Sion House for the earlier sowings.

CATALOGUES RECEIVED.

JAS. M. THORBURN & Co., 15, John Street, New York, U.S.A.—Wholesale List of American Seeds.

LAMBERT & REITER, Trier, Rheinish Prussia—Wholesale Rose List.

COMMUNICATIONS RECEIVED.—A. D.—SIR J. D. H.—C. B. H.—H. M.—E. S., St. Petersburgh.—U. D., Berlin.—R. A., Montevideo.—W., Valenciennes.—R., Ghent.—W. P. & Sons (many thanks).—H. E. Ryde.—W. W.—E. J. L.—J. R. J.—A. G. N.—E. M., Louvain, letter follows.—Barr & Son.—G. P. C.—J. W.—R. R.—H. Alexander & Co.—F. A. G.—E. Sandford.—W. G. S.—H. Hall, photos; yes, send them to this office.—F. A. G.—J. A. C.; no paper has arrived.—J. Young.—Civis.—A. V.—Der Verein Erfurter Handels Gärtner.—R. D.—S. C.—E. T.—D. L.—B.—F. Le B. B.—W. C.—J. J. W.—H. W. W.—J. H. G.—E. M.—T. B.—J. W. K.—Surrey.—W. W. S.—A. G. W.—J. R.—G. B.—W. S.—A. Miller (see our "Notices to Correspondents" column.

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DIELYTRA SPECTABILIS,
LILY OF THE VALLEY CLUMPS,
LILY OF THE VALLEY CROWNS,
GLADIOLUS, of all varieties,
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CYCLAMEN, extra fine flowers, and BOUVARDIAS, freest flowering sorts, at 6*s.*, 9*s.*, and 12*s.* per doz.; small, 3*s.* per doz.
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SMILAX, lovely tresses of green foliage, 9*d.* and 1*s.* each.
RONDELETIA SPECIOSA MAJOR, beautiful, 1*s.* 6*d.* each.
PRIMULA OBCONICA, continual bloomer, 6*d.* and 9*d.* each.
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DRACÆNAS, in variety, in 3½-inch pots, 6*s.* per doz.; larger, 1*s.* 6*d.* and 2*s.* 6*d.* each.
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Six distinct and beautiful Conservatory Plants, 6*s.*
Twelve ,, ,, ,, ,, 10*s.* 6*d.*

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It is now generally acknowledged that this highly concentrated Manure exceeds all others in general fertilizing properties and staying powers, thus rendering its money value at least double that of other Manures.

More prizes have been obtained through the use of this Manure by Chrysanthemum exhibitors than by any other Fertilizer.

It promotes a rapid, healthy, and robust growth to plants generally.

It is a clean and dry Powder, with very little smell.

It is consequently particularly adaptable for Amateurs, equally with Nurserymen.

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"SIRS,—We have used Standen's Manure for Chrysanthemums, mixed with the mould, when potting their last shift, and an occasional sprinkle over the top of the pots during their growth, especially just before the bud shows. We took last season thirty-one First Prizes, Silver Cup at Portsmouth, £25 Silver Cup, Devizes, and £10. We can highly recommend it for plants, especially Roses, Pelargoniums, Azaleas, Gardenias, and Stephanotis. Our Stephanotis this season we can pick by the gallon, from six to eight pips on each spray."

(Signed) W. & G. DROVER.

"We have used Standen's Manure for some years, and have never found any fertilizer so safe and valuable. Its action is literally 'magical.' We have tried it on unhealthy plants which seemed past recovery, and it has restored them to their natural vigour. However valuable other fertilizers may be, none can be compared to this. Camellias grown in the same pots *for ten years* are as healthy as if just repotted."

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Per doz., 4*s.*; per 100, 25*s.* Per doz., 5*s.*; per 100, 30*s.*
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LONGIFLORUM JAPONICUM, per doz., 4*s.* 6*d.*; per 100, 35*s.*
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1600 SPRUCE FIR, 2 to 8 feet.
100 Green HOLLY, very fine and bushy, 2 to 4 feet, 15*s.* doz.
9000 Common ASH, 3 to 4 feet, 30*s.* per 1000.
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1000 Common LAURELS, 2 to 3 feet, 25*s.* per 100.
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600 Austrian PINES, 1 to 2 ft. 500 POPLARS of sorts, 6 to 10 ft.
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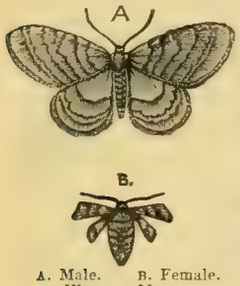
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"DEAR SIR,—I am pleased to tell you your Tree Dressing gave me great satisfaction in sticking the Winter Moth. I found a great many on the dressing in November.
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GENUINE ORCHID PEAT, 8*s.* 6*d.* per sack; 5 sacks, 40*s.*; BEST BROWN FIBROUS PEAT, 5*s.* per sack; 5 for 22*s.* 6*d.* BLACK FIBROUS PEAT, 4*s.* 6*d.* per sack; 5 for 20*s.* COARSE SILVER SAND, 1*s.* 6*d.* per bushel; 14*s.* half ton; 24*s.* per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1*s.* per bushel. Chrysanthemum Compost, 1*s.* 6*d.* per bushel; 4*s.* per sack. Tobacco Cloth or Paper, 1*s.* per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, &c., &c.

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YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack.
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Best selected Brown Fibrous Peat for **Orchids**	4/6	20/-	14/-
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Superior Peat Mould do. ...	2/6	10/-	—
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The above prices subject to 2/- a yard reduction to purchasers of 4 yards and upwards bringing own carts to wood; a day's notice requested. Special terms quoted for carting within 15 miles of Bexley, according to distance.
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Certain death to Slugs; Fertiliser to Soil; perfectly harmless to plant, vegetable, and animal life. Delicate Seedlings are absolutely secure if sprinkled with Slugicide. Price 1*s.* 6*d.*, post-free.—The SLUGICIDE CO., 6, Mary-le-port St., Bristol, and all Seedsmen.

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SPECIAL for Orchids, Choice Plants, Hard wooded and Fern do., and Rhododendrons. Excellent LEAF-MOULD, SAND, Rich LOAM, PEAT-MOULD, CHARCOAL, COCOA FIBRE, SPHAGNUM, and all GARDEN SUNDRIES. PEAT MOSS LITTER.—**EPPS & CO.,** The Peat Dépôt, Ringwood, Hants.

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As recommended by Miss ORMEROD and Others.

Now is the time to apply our Composition for preventing the wingless female Codlin or Winter Moth from ascending the trunks of Fruit Trees to deposit its eggs.

Price, 36*s.* per cwt.

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used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

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keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.*, from the Trade, Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

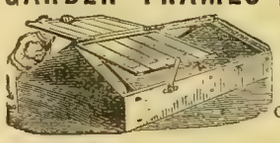
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RUSSIA MATS—New Archangel, 9 ft. 4 ins. by 4 ft. 6 ins. 22*s.* doz.; Heavy Petersburg, 7 ft. by 3 ft. 8 ins., 12*s.* doz. SPECIALITE TOBACCO PAPER, 10*d.* per lb., 28 lb. for 21*s.* TOBACCO CLOTH, 1*s.* per lb., 28 lb. for 26*s.* ORCHID PEAT, 8*s.* per sack. PEAT, LOAM, SAND, MANURES, and SUNDRIES. Price List free.—W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

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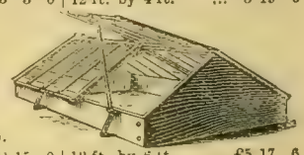
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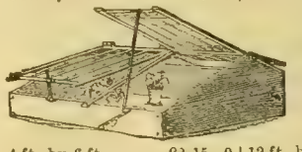
6 ft. by 3 ft.	...	£2	0	0	6 ft. by 4 ft.	...	£2 7 6
12 ft. by 3 ft.	...	3	3	0	12 ft. by 4 ft.	...	3 19 0



No. 73.
NEW SPAN-ROOF GARDEN FRAME.

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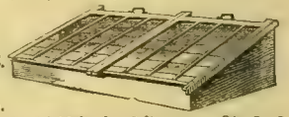
4 ft. by 6 ft.	...	£2	15	0	12 ft. by 6 ft.	...	£5 17 6
8 ft. by 6 ft.	...	4	7	6	16 ft. by 6 ft.	...	7 7 6



No. 74.
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CASH PRICES. CARRIAGE PAID.

4 ft. by 6 ft.	...	£3	15	0	12 ft. by 6 ft.	...	£6 0 0
8 ft. by 6 ft.	...	4	7	6	16 ft. by 6 ft.	...	7 12 0

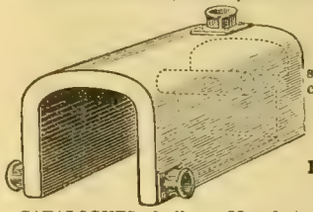


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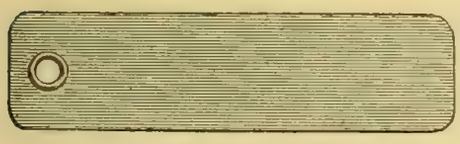
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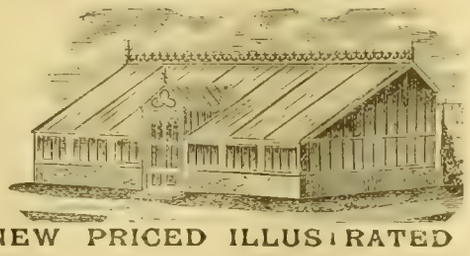
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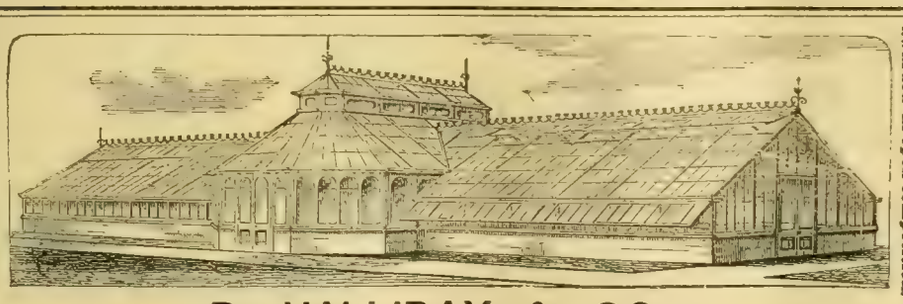
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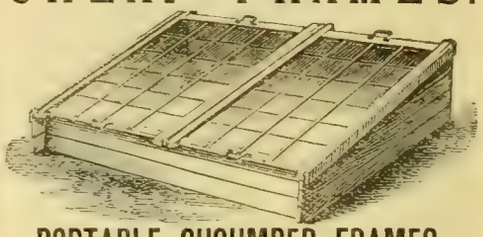
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18×14		22×18
20×14		24×18

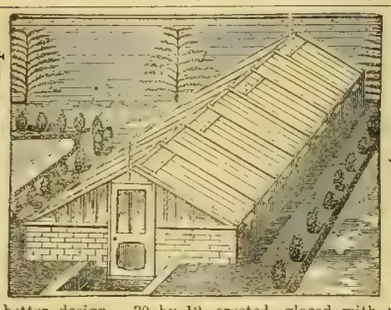
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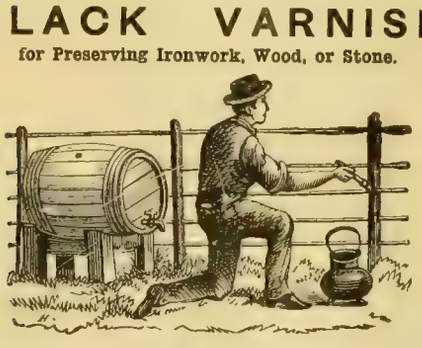


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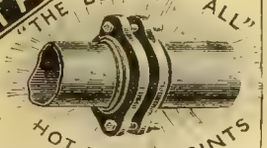
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WANTED, a respectable Man, as CARMAN. Preference given to those who have held a similar situation, and used to Market Work. First-class references indispensable. Wages 25*s.* per week. Permanent employment.—WILLS AND SEGAR, Florists to H.M. the Queen, and H.R.H. the Prince of Wales, Onslow Crescent, South Kensington, S.W.

WANTED, a young LADY, for Florist's, &c.. Business. Good Saleswoman (with some knowledge of Plants preferred), also experienced in Wreaths, Bouquets, &c.—Apply, with particulars, to A. W., 28, Hampton Place, Brighton.

WANTED, a middle-aged LADY BOOK-KEEPER, to fill up her time in the Shop. Some knowledge of the Florist and Seed Trade necessary. She would be treated as one of the family, and not required to do menial work.—JOHN STEVENS, The Nurseries, Coventry.

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Mr. T. H. BRAITHWAITE, late Gardener to Mrs. SHAW, Springwood, Ashton-under-Lyne, as Head Gardener to HENRY JONES, Esq., Oakwood Grange, Rotherham, Yorkshire.

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JAMES CARTER AND CO. have at all times upon their Register reliable and competent MEN, several of whom are personally well known to Messrs. Carter. Enquiries should be made to 237 and 239, High Holborn, W.C.

SCOTCH GARDENERS.—I have at present several very superior MEN on my Register, whose character and ability will bear the strictest investigation.—JOHN DOWNIE, Seedsman, 144, Princes Street, Edinburgh.

THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, Liverpool, are in a position to recommend a first-rate man as HEAD GARDENER, or GARDENER and BAILIFF; also a thoroughly competent man as HEAD GARDENER, who has a good knowledge of Orchids; unexceptional references in each case.

GARDENER (HEAD), to any Lady or Gentleman.—Age 31; thoroughly practical in all branches.—J. WRIGHT, The Gardens, Belmont Rawtenstall, Manchester.

GARDENER (HEAD), where two or more are kept.—Age 32, married; thoroughly experienced in all branches. Good character. — GEO. GOOD, Mare Place, Brenchley, Kent.

GARDENER (HEAD); age 30.—T. WILD, Farnborough Hill, Hants, offers his services as above. Thoroughly experienced in all branches. Can be well recommended by present employer. Had charge of these Gardens for five years.

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GARDENER (HEAD); age 47, married, no family.—J. CARTER, for the last sixteen and a half years Gardener to Lady Chichester, Arlington Court, Barnstaple, is at liberty to treat with any Nobleman or Gentleman requiring a Gardener. Thoroughly experienced in all branches. —Address as above.

GARDENER (HEAD WORKING).—Age 32, married, four children; sixteen years' practical experience in all branches. Good character.—J. A. S., 32, North Road, Hersham, Walton-on-Thames.

GARDENER (HEAD WORKING).—Age 30, married when suited; fifteen years' general experience. Good references, including six years from Nobleman.—R. L., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDENER (HEAD WORKING).—Age 28; five years' good recommendation. Well-up in Vines, Peaches, Stove and Greenhouse, and Outdoor Work.—A. B., Heydon Hall, Norwich.

GARDENER (HEAD WORKING).—Age 40, married; a good Orchid Grower. Has been eighteen years as Head Gardener. Nine years in present situation.—C. Warren, Leigh, Chulmleigh, North Devon.

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GARDENER (HEAD WORKING).—Married, two children, youngest (age 11); thoroughly experienced in Early and Late Forcing, &c. Highest references from present and previous employers.—T. W., 7, Effingham Road, Reigate, Surrey.

GARDENER (HEAD WORKING), where two or three are kept; age 26.—H. MARKHAM, Mereworth Castle, Maidstone, would be pleased to recommend his Foreman, who has been with him six years, to any Lady or Gentleman requiring a good all round man.

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GARDENER (HEAD WORKING). — Understands Growing Pines, Grapes, Peaches, Melons, Cucumbers, Orchids, fine Foliage and all kinds of Flowering Plants, the Kitchen, Fruit, and Flower Gardens, Lawns, &c. J. B., 15, Stanley Terrace, Mill Lane, Brixton Hill, S.W.

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GARDENER (HEAD), or good SINGLE-HANDED.—Age 30, married, one child; thoroughly understands Vines, Melons, Cucumbers, Stove and Greenhouse Plants, Kitchen and Flower Garden. Good character.—GARDENER, 230, Peckham Rye, London, S.E.

GARDENER (HEAD), or good JOURNEYMAN.—Age 28, single at present; thorough experience in all branches. Good character.—W. HEATH, 71, Merton Road, Watford Heath

GARDENER (WORKING), where help is given; age 40, married.—A CLERGYMAN, who is resigning, wishes to recommend his Gardener as above, who has been in his service for five years.—GARDENER, Barley Rectory, Royston, Herts.

GARDENER (SINGLE-HANDED). — Age 38, seven years in last situation.—JAMES STRINGER, Skew Bridge, Shanklin, Isle of Wight.

GARDENER (SINGLE-HANDED). — Smart, Inside and Out, good Fruit Grower.—Age 23, married when suited; good character.—A. Mc., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDENER (SINGLE-HANDED), or where one assists, or as UNDER in good place.—Age 27, single; four years' at the Gardens, Nash Court, Faversham. Four years' previous. Good character.—G. BLAKE, Hutton Park, Brentwood, Essex.

GARDENER (UNDER); age 19.—Mr. LOUTH, Syndale Park Gardens, Faversham, will be pleased to recommend a young Man as above. In and Outside preferred.

STEWARD and GARDENER. — A married Man, of many years experience on the Estate, Farm, and Gardens, seeks a re-engagement. At present on a large estate in Wales. Will leave when suited. Highly recommended as a Landscape Gardener and Arboriculturist. A good Judge of Stock and Manager of Labour.—W. Y., Steel & Jones, Advertising Agents, Spring Gardens, S.W.

FOREMAN, Inside; age 25.—Mrs. MITCHELL, Lessness, Abbey Wood, Kent, would be pleased to recommend G. Sayers as above.

FOREMAN, Fruit, Plant, or General.—Age 26; ten years' experience in the Routine of Gardening. Good character.—P. W. S., The Gardens, Stoke Rochford, Grantham.

FOREMAN, Inside or Out.—Age 24; nine years' practical experience. Abstainer. Good references.—C. JONES, The Grove, Lower Bebington, near Birkenhead, Cheshire.

FOREMAN, Inside, in a good Establishment. —Mr. WEEKS wishes to recommend his present Foreman, Henry Jones, to any Gardener requiring a competent man.—Apply, Cheswardine House, Market Drayton.

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FOREMAN (WORKING).—Age 24; German. Well up in Growing Fruits and Plants of any kind, and good Propagator, seeks re-engagement. Please state wages.—97, Shoe Lane, Fleet Street, E.C.

FOREMAN, or FIRST JOURNEYMAN.—Age 24; ten years' experience Inside. Life abstainer. Distance no object.—H. G., 40, Mt. Ararat Road, Richmond, Surrey.

FOREMAN or JOURNEYMAN.—Six years' experience, two in Nursery. — LOVELL, Stuckeridge, Bampton, Devon.

PROPAGATOR and GROWER, for Market. —Many years' practice in the London Trade. Choice Fruit, Roses, Ferns, Flowering Roots and Bulbs, also Roses under Glass.—PROPAGATOR, Bacton, Stowmarket, Suffolk.

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ROSE GROWER.—E. HILLS seeks a re-engagement in the above capacity, either in the Trade or Private Gardens. Thoroughly experienced in the Propagation and Cultivation of all kinds of Roses under glass or in the open ground. Excellent references from Messrs. J. Veitch & Sons, also Messrs. W. Paul & Sons.—Address, 4, Gap Road, Wimbledon, S.W.

JOURNEYMAN (FIRST), in the Houses, in good establishment.—Age 22; well recommended from late and previous employers.—F. JEGGO, Lilliehurst, Newport, Salop.

JOURNEYMAN, in Good Establishment.—Age 23; eight years' experience. Good references from previous employers.—W. B., Wadenhoe, Oundle, Northamptonshire.

JOURNEYMAN, in the Houses, in good establishment. — Age 22; eight years' experience. Good characters from late and previous employers.—F., Mrs. Miller, St. Margaret's, Ware, Herts.

JOURNEYMAN (UNDER), in Houses preferred, no objection to some Outside Work.—Age 21; seven years' experience Inside and Out.—S. FUNNELL, Little Flenchford Lodge, Reigate, Surrey.

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Seed Trade.

SHOPMAN, or ASSISTANT.—Age 24; eight years' experience in Seeds, Plants, and Bulbs. Accustomed to a pushing Retail Business. Excellent references.—W. JOHNSTONE, Ashludie Gardens, by Dundee.

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TO SALESMEN, &c.—Young Man, Dutch, (Age 22), seeks situation in London Flower or Vegetable Market, or any respectable capacity where he could Improve in the English language.—Apply, stating particulars, to B., 70, Roelofare, Idsveen, Holland.

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The Editor of the *Medical Annual* for 1890 points out that potash is largely used to add to the solubility of many of the Cocoas at present sold, but that, in marked contrast, Messrs. CADBURY supply an absolutely pure Cocoa of the highest quality; and that the name CADBURY on any packet of Cocoa is a guarantee of purity.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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SHEFFIELD, HALLAMSHIRE, and WEST RIDING UNITED CHRYSANTHEMUM SOCIETY.
ANNUAL SHOW, Corn Exchange, Sheffield, NOVEMBER 14 and 15, 1890. TWO HUNDRED POUNDS in PRIZES. £50 in cash for Cut Blooms in the open class. Schedules and Form of Entry, post-free on application to W. HOUSLEY, or { Secs. WM. MARSHALL, }

ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER CHRYSANTHEMUM SHOW in the Town Hall, Manchester, on NOVEMBER 18 and 19. For Schedules, apply to the undersigned.
BRUCE FINDLAY, Old Trafford, Manchester.

LIVERPOOL HORTICULTURAL ASSOCIATION.
The ELEVENTH GRAND CHRYSANTHEMUM and FRUIT SHOW will be held in St. George's Hall, on TUESDAY and WEDNESDAY, November 18 and 19.
The EIGHTH SPRING SHOW of HYACINTHS, TULIPS, &c., is fixed to be held on MARCH 17 and 18, 1891. Schedules on application to EDWARD BRIDGE, Secretary.
Tarbock Road, Huyton, near Liverpool.

YORK CHRYSANTHEMUM SHOW, Fine Art Exhibition Building, NOVEMBER 19, 20, and 21, 1890. 36 cut blooms, 1st prize, £5 cup and £5 cash. 6 bunches of Grapes, 1st prize £5. Proportionately liberal prizes for Cut Blooms, Plants, Fruits and Vegetables. Entries November 12. There will be a stall for the Sale of Flowers, Fruit, &c.; the proceeds to be devoted to the Gardeners' Royal Benevolent Institution. Suitable contributions are solicited, and would be thankfully received by—
J. LAZENBY, Secretary, 13, Feusegate, York.

BECCLES and DISTRICT CHRYSANTHEMUM and FLORICULTURAL SOCIETY.
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Evergreen Hedges.—Evergreen Hedges.
JOHN PERKINS AND SON offer:—
ENGLISH YEWS, 3 to 4 feet, 100s. per 100.
THUJA LOBBII, 3 to 4 feet, 70s. per 100.
Fine bushy stuff, all recently transplanted, good fibrous roots. The Old Established Nursery and Seed Business, 52, Market Square, Northampton.
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WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

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T. JONES, Elvetham Park, Winchfield, Hants.

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WANTED, one to two dozen small Seedling Plants, from 1 to 3 inches high.
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Mr. J. ROBINSON, *Gardener to* Mrs. Hall, *says*:—"Your Narcissi, Hyacinths, and Tulips are most splendid; they take the eye of all comers, and are the best we ever had."
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THUIA LOBBII, 2 to 2½ feet, 40s.; 3 to 4 feet, 70s. per 100.
Grand roots, good colour, and well furnished.
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Telegraphic Address—"QUICK, Northampton."

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QUICK.—Special offer can be given for these, having an overstock. B. SLOCOCK, Slough, Bucks.

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WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Monday Next.—Notice.—Lord Mayor's Show.

MESSRS. PROTHEROE AND MORRIS desire to annouce that, in consequence of Lord Mayor's Show, there will be NO SALE OF BULBS at their Rooms, 67 and 68, Cheapside, E.C., on MONDAY NEXT, November 10, but that it will be held the following day (TUESDAY) instead.

Dutch Bulbs.

GREAT UNRESERVED SALES.
Four times Weekly.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, all received direct for Unreserved Sale, and lotted to suit the Trade and Private Buyers.

N.B. In consequence of Lord Mayor's Show, there will be NO SALE ON MONDAY NEXT, November 10, but will be the following day (Tuesday).

On view morning of Sale, and Catalogues had.

Exeter.

SIX DAYS' UNRESERVED SALE of exceptionally well-grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Exeter Nurseries, Exeter, on MONDAY NEXT, November 10, and five following days, at 12 o'Clock precisely each day, without the slightest reserve, by order of Messrs. Lucombe, Pince & Co., whose lease shortly expires, the particularly well-grown NURSERY STOCK, comprising 20,000 Fruit Trees, 15,000 Standard, Dwarf, and Pot Roses, 50,000 Conifers and Evergreens, 900 Fruiting and Planting Vines, 600 Hybrid Rhododendrons, 1000 Lucombe Oaks in pots, 12,000 Ferns of sorts, 4000 Palms, 6500 Heaths, several thousands of Azaleas, Bouvardias, Camellias, Clematis, Cyclamen, and numerous other stock.

The Stock may be viewed any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Sale of the renowned Collection of Orchids formed by the late E. Harvey, Esq., of Aigburth, near Liverpool.

MESSRS. PROTHEROE AND MORRIS have been favoured with instructions from the Executors of the late E. Harvey, Esq., to SELL by AUCTION, on the Premises, at Aigburth, near Liverpool, on TUESDAY and WEDNESDAY NEXT, November 11 and 12, at 12 o'Clock precisely each day, the whole of the renowned COLLECTION of ESTABLISHED ORCHIDS, amongst which will be found the following fine plants:—

Lælia anceps Dawsonii
" " stella
" " alba
" " Williamsii
" " Amesiana
" " Prothero-ana
" præstans var. nova
" Gouldiana
" elegans Wolstenholmiæ
" " alba
" " Blenheimensis
" Philbrickiana
Lycaste Skinneri alba
Dendrobium Statteriana
" Phalænopsis
" nobile Cooksoni
" " Sanderiana
" " nobilius
" Leechianum
" chrysodiscus
" splendidissimum
" Griffithianum
Cœlogyne cristata alba
" Massangeana
" Dayana
Cypripedium cœnanthum superbum
" Charles Canham
" Sallieri
" vexillarium grandiflorum
" caudatum Wallisii
" Barleti
" Argus Moensi
" venustum
" Harrisianum superbum
" Morganiæ
" " Burfordiense
" Hornianum
" Leeanum superbum
" tessellatum porphyreum
" Mastersianum
" Euryandrum
" orphanum
Cypripedium politum
" superbiens
" tonsum
" Niobe (new)
" superciliare
" Parishi
" Saundersianum (rare)
" Arthurianum
" Horsmanni
" Lemoinierii
" Sedeni candidulum
" Schrœderi
" Ashburtoniæ
" expansum
" Crossianum
Maxillaria Sanderiana
Odontoglossum aspersum
" crispum Maudeanum
" lyroglossum
" Chestertoni
" Andersonianum
" vexillarium superbum
" " Chelsoniense
Miltonia Moreliana
Oncidium macranthum
Cattleya Trianæ Backhouseiana
" " Diadem
" Mendeli varieties
" Wagneri
" Reineckiana
" Exoniensis
" Skinneri alba
" crispa, fine plants
" labiata, autumn flowering
Cymbidium Lowi
" eburneum
" Mastersianum
Vanda cœrulea
" Sanderiana
" Lowi or Renanthera Lowi
Angræcum sesquipedale

Also a quantity of Miscellaneous PLANTS and BULBS.

On view any day prior to the Sale. Catalogues had of the GARDENER, on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Wednesday Next.

SPIRÆA JAPONICA, AZALEAS, CAMELLIAS, BULBS and LILIES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, November 12, at half-past 11 o'Clock to the minute, 150 AZALEA INDICA, 150 A. MOLLIS, 50 CAMELLIAS, PALMS, and other plants from the Continent; SPIRÆA JAPONICA, in splendid condition; STEPHANOTIS FLORIBUNDA, DUTCH BULBS, a fine selection of NARCISSUS from a private grower; HARDY BULBS; 10,000 African TUBEROSES, just received in fine condition; 3000 L. LONGIFLORUM var. FORMOSUM, L. AURATUM, and other LILIES. A quantity of BAMBOO LADDERS.

On view morning of Sale, and Catalogues had.

Friday Next.

IMPORTED and ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, November 14, at half-past 12 o'Clock precisely, by order of Messrs. F. Sander & Co., a very fine assortment of IMPORTED and ESTABLISHED ORCHIDS, including Dendrobium nobile, unflowered; Odontoglossum Sanderianum, in trade lots; Oncidium leucochilum, Cycnoches chlorochilum, Trichopilia crispa marginata, Cattleya Schofieldiana, C. velutina, Oncidium Weltoni, Vanda Sanderiana, Lælia Patinii alba, Cœlogyne Dayana (true), Phaius tuberculosus, new Angræcum, distinct from anything at present represented in collections; Saccolabium cœleste, Cattleya Eldorado virginalis, Angræcum Sanderianum, in flower and bud; some splendid plants of Cypripedium Rothschildianum, Grammatophylum Measuresianum, Masdevallia punctata, M. Laucheana, Lælia anceps Dawsonii, ditto Williamsiana, Dendrobium formosum giganteum, Angræcum astuosum, Oncidium ampliatum majus, Masdevallia Gaskelliana, very rare white and crimson-flowered species; Vanda Niemannii, Anguloa Ruckerii sanguinea, Lælia Lawrenceana, some very choice species of Masdevallias; a very scarce species of Phaius bicolor, just imported, sepals and petals rich reddish-brown, lip rose-yellow and white, and is much fringed at the margin.

A fine lot of GLORIOSA SUPERBA, one of the most showy and useful of stove plants.

On view morning of Sale, and Catalogues had.

Cooksbridge, Sussex.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mrs. F. Wollard to SELL by AUCTION, on the Premises, the Cooksbridge Nursery, two minutes' walk from Cooksbridge Station, and 2½ miles from Lewes, Sussex, on FRIDAY NEXT, November 14, at 11 for 12 o'Clock precisely, a quantity of valuable and well-grown NURSERY STOCK, consisting of thousands of Specimen and Border Shrubs; 10 0 Ornamental Trees; 500 large Aucubas, 3 to 5 feet; 1500 Common and Portugal Laurels, 4 to 7 feet, bushy, and well-prepared for moving; 1500 Standard, Pyramid, and Dwarf-trained Fruit Trees; a quantity of Currants and Gooseberries; 5000 well-grown Standard, Dwarf, and Climbing Roses; 500 large clumps Herbaceous Plants.

May be viewed any day prior to the Sale, Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Stamford Hill.

IMPORTANT SALE of DECORATIVE PLANTS and GENERAL NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Sampson to SELL by AUCTION, on the Premises, the Stamford Hill Nurseries, Amhurst Park, N., adjoining Stamford Hill Station, G.E.Ry., on SATURDAY NEXT, November 15, at 11 o'Clock precisely, 10,000 Hardy DECORATIVE PLANTS, including Palms, Draceenas, Aspidistras, Aralias, Phormiums, Ferns, &c; several unique SPECIMEN PLANTS, 50 large CAMELLIAS, 1000 CHRYSANTHEMUMS in Flower and Bud, 1000 dwarf ROSES, a quantity of Hardy CLIMBERS, 5000 Evergreen and Flowering SHRUBS, and Ornamental TREES; a large quantity of fine MUSCAT GRAPES, ready for gathering; a good Saddle BOILER, heap of Manure, Tiles, &c.

On view any day prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Leytonstone and Wanstead.

ABSOLUTE CLEARANCE SALE.—Land required for Building Purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The American Nurseries, adjoining Leytonstone Station, G. E. Ry., and also at the branch Nursery, Wanstead Flats, on TUESDAY, WEDNESDAY, and THURSDAY, November 18, 19, and 20, at 12 o'Clock precisely each day, the Second Portion of the valuable NURSERY STOCK, comprising 50,000 Evergreens, thousands of choice Coniferæ, 3000 finest Rhododendrons, 4000 Laurels, 2000 Retinospora plumosa aurea, Gold and Silver Hollies, Pines, thousands of Deciduous Shrubs, 8000 Standard and Dwarf Roses, selected Fruit Trees, thousands of Poplars, clean grown Limes, 1000 fine Planes for Street Planting, and numerous other Stock.

May be viewed any day (Sundays excepted) prior to the Sale. Catalogues had at the respective Nurseries, and at 67 and 68, Cheapside, E.C. The Wanstead Nursery is for Disposal. Particulars may be had of the Auctioneers.

Toddington, Winchcombe, Gloucester.

IMPORTANT CLEARANCE SALE OF NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises. The Toddington Orchard Company, Winchcombe, R.S.O., Gloucester, near to the Beckford Station, Great Western Ry., on THURSDAY, November 20, at 12 o'Clock precisely, the valuable thriving NURSERY STOCK, comprising 1000 Mountain Ash, Wellingtonias, and Laurels; 3000 Box, a quantity of Yews, Poplars, Araucarias, and Laurustinus; 20,000 Fruit Trees, including 7000 Standard and Pyramid Apples, comprising 3000 Lord Suffield, a large number of Cox's Orange Pippin and Pomona, Warner's King, and others; 6000 Red Currants, Raby Castle, and various other Stock.

On view any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Leamington.

SALE OF WELL-GROWN NURSERY STOCK.
POSTPONED until NOVEMBER 25, 26.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Leamington Nursery, Leamington, on TUESDAY and WEDNESDAY, November 25 and 26 (instead of November 21, as announced last week), at 12 o'Clock precisely each day, a portion of the beautifully-grown NURSERY STOCK, comprising 2000 Coniferæ and other Shrubs, 2000 Hollies, 2000 Aucubas, 3000 Thuia Lobbi and Golden Yews, 1000 well-grown Cupressus Fraserii, a large quantity of Laurels, Yews, &c., and numerous other Stock.

On view any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Dutch Bulbs.—Dutch Bulbs.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots to suit all buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving weekly from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Wednesday Next.

300 fine plants of AZALEA MOLLIS, well set with buds, received direct from Ghent; Dwarf ROSES, Hardy Ornamental EVERGREENS, SHRUBS, and CONIFERS; BORDER PLANTS, in variety; SPIRÆA JAPONICA, LILY of the VALLEY Crowns and Clumps; choice collection of NARCISSUS, Roman HYACINTHS, for forcing, and many other Bulbs and Roots.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 12.

On view morning of Sale, and Catalogues had.

Thursday Next.

VALUABLE ESTABLISHED and IMPORTED ORCHIDS.

MR. J. C. STEVENS has received instructions from Messrs. F. Sander & Co., of St. Albans, to SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, November 13, at half-past 12 o'Clock precisely, a very varied and healthy collection of Established Plants, also a few Imported Plants, comprising:
EPIDENDRUM ROSEUM and ALBUM, splendid masses
CYPRIPEDIUM IO GRANDIS. [imported.
" HORNIANUM.
" RETICULATUM, very rare.
" CROSSIANUM PSITTACINUM.
BATEMANNIA BURTII, rare and beautiful.
SOBRALIA MACRANTHA.
" XANTHOLEUCA, the golden-flowered form.
CŒLOGYNE CRISTATA ALBA, pure white-flowering variety.
PLEUROTHALLIS ODORATISSIMUS.
CŒLOGYNE THUNIANA.
EPIDENDRUM ACIPHYLLA.
LÆLIA PURPURATA, established.
PLEUROTHALLIS CARINATUS, rare plant.
CATTLEYA MAXIMA PERUVIANA, fine specimen plants, some in flower.
DENDROBIUMS CRASSINODE, BIGIBBUM, WARDIANUM, FALCONERII, &c.
ODONTOGLOSSUM CITROSMUM, fine pushing plants in [baskets.
UTRICULARIA MONTANA.
WARSCEWICZELLA VIOLACEA.
RESTREPIA ELEGANS, very handsome.
CATTLEYA MENDELII, fine healthy established plants.
AERIDES SANDERIANA.
CYPRIPEDIUM HAYNALDIANUM, imported plants in fine order.
" CAUDATUM RUBESCENS, established and healthy.
BULBOPHYLLUM SPECIES, very distinct.
LYCASTE SKINNERII ALBA.
CYPRIPEDIUM INSIGNE, some fine plants and varieties in flower.
PHAIUS HUMBLOTII, some extra healthy plants, now making growths.
BURLINGTONIA FRAGRANS, sweet-smelling and decorative.
ONCIDIUM SPLENDIDUM, several fine healthy specimens in
MASDEVALLIA MYRIOSTIGMA. [flower.
" SWERTIÆFOLIA.
" WAGNERIANA.
ONCIDIUM SARCODES, pretty clusters of flowers.
ODONTOGLOSSUM MIRANDUM.
" NÆVIUM MAJUS, one of the most beautiful.
DENDROBIUM LEECHIANUM, some fine large plants.
" DEAREI, very fine plants.
CATTLEYA ERNESTII, very rare and beautiful variety.
" WARNERII, fine dark-flowering form.
" SPECIES, including TRIANÆ, in good condition.
" HARDYANA, 4 plants out of 12 have proved true.
MASDEVALLIA MEASURESIANA, very rare and fine.
" GARGANTUA, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.

Immense Importations from Japan.
10,000 extra fine Bulbs of LILIUM AURATUM.
5,000 L. LONGIFLORUM EXIMEUM.
2,000 L. SPECIOSUM ALBUM and RUBRUM, just received from Japan in extra fine condition.
5,000 S. African TUBEROSES and AMARYLLIS.
20,000 White Roman HYACINTHS, for forcing.
And a choice variety of Terrestrial ORCHIDS, &c., &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 13.

On view morning of Sale, and Catalogues had.

Rodmersham, near Sittingbourne.

SALE of 8400 Standard FRUIT TREES, 5300 Pyramid ditto, and 5500 FOREST PLANTS.

MESSRS. JACKSON AND SONS are instructed by Mr. A. J. Thomas to SELL by AUCTION, on TUESDAY, November 11, 1890, at half-past 12 o'Clock precisely, at Rodmersham Green Nursery, the above-named Valuable Stock of FRUIT TREES, in convenient lots, comprising:—

1500 CHERRY: Bigarreau, Napoleon ditto, Waterloo, Elton, Governor Wood, Black Eagle, &c.
1300 APPLE: Wellington, Worcester Pearmain, Lord Suffield, Keswick, Glory of England, Smart's Prince Arthur, &c.
1600 PEAR: Williams, Beurré Bosc, Beurré Capiaumont, Pitmaston, &c.
2000 PLUM: Victoria, River's Early, Prince of Wales, Sultan, Czar, Early Orleans, &c.
1000 BUSH PLUM, 1000 CLUSTER DAMSON.

The Pyramid Trees include 1300 Apple, 500 Pear, and 3500 Plum of the above-mentioned varieties.

Also 9000 American BLACKBERRY (Wilson, Jun.), and 50,000 STRAWBERRY (Sir Joseph Paxton).

The FOREST PLANTS comprise 4000 Ash (7 to 8 feet), and 1500 Chestnut (6 to 7 feet).

Catalogues may be obtained of Messrs. JACKSON AND SONS, Valuers, &c., Sittingbourne.

Every Thursday.—Dutch Bulbs.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY NEXT, and every THURSDAY throughout the season, at half-past 11 o'Clock A.M., large consignments of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland; also Roman HYACINTHS and Paper White NARCISSUS. Lotted to suit all buyers.

On view morning of Sale, and Catalogues had.

On WEDNESDAY and FRIDAY EVENINGS, at half-past 5 o'Clock, SALES of Choice CUT FLOWERS. Entries invited.

Nursery Stock Sales conducted and Valuations made.

Auction Rooms and Offices, 6, Phillips Street, Birmingham.

Nursery Stock Sales.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on TUESDAY NEXT, November 11, at 12 o'Clock, a choice Collection of well-grown and healthy NURSERY STOCK, consisting of Cupressus, of sorts; Retinosporas, Hollies, Magnolias, Laurels, Ivies, Box, Weigelas; also a Consignment of Azalea Mollis, Rhododendrons, Latania borbonica (fine plants), and numerous other things; all lots absolutely without reserve.

Sales of this class are held every Tuesday.

On view morning of Sale, and Catalogues had.

Wednesday Next.

ESTABLISHED and IMPORTED ORCHIDS,

MESSRS. POPE AND SONS are instructed by Messrs. Seeger & Tropp, of East Dulwich, to SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on WEDNESDAY NEXT, November 12, at 2 P.M., a choice COLLECTION of ESTABLISHED and IMPORTED ORCHIDS, consisting of Odontoglossums, Oncidiums, Cattleyas, Cypripediums, Dendrobiums, Cœlogynes, Calanthes, Cymbidiums, Disas, Masdevallias, Lælias, Vandas, and many other fine things, the whole to be sold absolutely without reserve. Commissions carefully executed.

On view morning of Sale, and Catalogues had.

West Drayton, Middlesex.

Important Sale of fine healthy NURSERY STOCK.

MR. E. P. NEWMAN has been instructed by Messrs. J. Smith & Sons to SELL by AUCTION, in the Drayton Fields, on TUESDAY, November 18, at 10 for 11 o'Clock, about—

20,000 of 2, 3, and 4-year old Standard and Half-standard APPLE, PEAR, PLUM, DAMSON, and CHERRY TREES; and about—

110,000 Red and Black CURRANT and GOOSEBERRY TREES, all of the very best kinds, and lotted to suit all buyers.

Catalogues of the Auctioneer, Uxbridge, Middlesex.

WANTED, several ACRES of LAND, suitable for Nursery and Seed Growing purposes. Must be within 40 miles of London.

Address, at once, with full particulars, to R. F., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, TO RENT, a FRUIT and FLOWER FARM, with quantity of Glass, near a Railway Station, and near London or Provincial Town.

Full particulars, rent, &c., to be sent to Mr. JOSEPH WESTWOOD, Napier Yard, Millwall, London, E.

WANTED, TO RENT, Small NURSERY, in thriving Provincial Town. Good Local Trade.

Particulars to J., Mr. James, 3, Beacontree Terrace, Mornington Road, Leytonstone.

Essex.

FOR DISPOSAL, a Capital LEASEHOLD MARKET NURSERY, with 6 Glass Houses, Pits, and Dwelling Houses. Rent, £85. Price £800.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

NURSERY FOR SALE, with Immediate Occupation. £150 for four Greenhouses, 180 feet run, Stock, four-roomed Cottage, with Washhouse. Trade work principally. Ten years' lease unexpired. Rent £15 per annum. Half an acre of Land.

E. CORDING, Effra Nursery, near Gipsy Road, West Norwood, S.E.

FOR DISPOSAL, a JOBBING and FLORIST BUSINESS. One Greenhouse stocked with Plants. Room for the erection of more Glass. Situate in Main Road. Two contract, three daily places. Tools complete.

Apply, H. B., Morland Cottage, Shooter's Hill, Blackheath.

FOR IMMEDIATE DISPOSAL, at a great sacrifice, a FLORIST and SEED BUSINESS. Sole reason is ill health. Six-roomed House, six Greenhouses, in capital condition; Pits and Frames, Stock and all fixtures. Lease sixteen years. Shop well fitted. Good Cut Flower Trade, and an opening for a Fruit Business. Price £100, or valuation.

Apply, R. HOLLOWAY, 87, Dulwich Road, Herne Hill, S.E.

LAND for HORTICULTURISTS.

TO BE LET, on specially favourable long leases.

TO BE SOLD, on liberal system of deferred payments.

TO BE SOLD forthwith, 3-4ths price remaining at 4 per cent.

Excellent for soil, water, and railway.

Apply to Mr. F. J. CULLIS, F.G.S., Marling Park Estate, Hampton-on-Thames.

Seed, Implement, and Manure Trade.

VERY IMPORTANT.

FOR SALE, in Provincial Town, in West of Ireland, a Going Concern in above Trade. Small but complete Stock. Very Select Garden Seed Trade, and fine Turnover in Farm Seeds and Artificial Manures. Good premises, situate in principal street, with twenty-one years' Lease. Will transfer Stock at 20 per Cent. under cost. Fine opening for young man with small capital. Immediate possession. Want of capital only reason for disposing.

For further particulars apply to AURATUM, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, a SEEDSMAN'S and CORN-DEALER'S SUNDRIES BUSINESS. Twenty miles from London. Splendid Surrey town—100,000 population. Handsome Shop, comfortable home; good Trade, and rapidly increasing. Price only £250 for Lease, Goodwill and Plant. Stock at valuation. Satisfactory reasons for leaving. Safe, comfortable living. Splendid opportunity for young beginner. FLORA, Box 203, Willing's Advertising Offices, 125, Strand, W.C.

TO LET, 35 acres of FRUIT LAND in full bearing order. Good House and Buildings. Twelve miles from London.—J. MEYERS, Brentford.

NURSERY and RESIDENCE (six rooms), TO LET, in High Street, Peckham, six span roofs, 40 feet long, all suitable piping, and most conveniently situated for London Markets. Rent £55 all enclosed.

Apply to SLATER, 66, Clayton Road, Peckham; or owner, Dashwood, South Penge Park. A bargain.

Landscape Gardening.

MR. ARTHUR M. KETTLEWELL, LANDSCAPE GARDENER, having great experience in all matters pertaining to the artistic arrangement or re-arrangement of Grounds, IS READY TO UNDERTAKE the Designing and Laying-out of Private or Public Gardens, Parks, Cemeteries, &c. Send for his Manual on the "Art of Landscape Gardening," excellently reviewed by nearly all the leading Gardening Papers, post-free, 7*d*.

Address, Titley House, Titley (R.S.O.), Herefordshire.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

NEW DESCRIPTIVE PRICED CATALOGUE

Post-free on application to

THE VINEYARD AND NURSERIES,

GARSTON, near LIVERPOOL.

ORCHIDS.

BRAZILIAN ORCHIDS supplied to the Trade in large or small quantities.

CATALOGUES and particulars on application.

A. H. GRIMSDITCH (Importer), 5, Clayton Square, Liverpool.

Sole Agent for CARLOS TRAVASSOS, Rio de Janeiro.

For Sale.—Palms!—Palms!

WICETON has still a most extensive stock of all the leading varieties suitable for Winter Gardens, House Decorations, &c., and many thousands fit for Table Work. Prices on application.

Putney Park Lane, S.W.; and Stands 129 and 130, Covent Garden, W.C.

FOREST TREES, and COVERT PLANTS.

BEECH, extra strong, transplanted, 3 to 4 feet, and 4 to 5 feet.
HORNBEAN, strong for hedges, 3 to 4 feet, and 4 to 6 feet.
LAUREL, common bushy, 1½ to 2 feet, 2 to 3 feet, and 3 to 5 feet.
OAK, English, extra strong, 3 to 4 feet, and 4 to 5 feet.
PINE, Austrian, specimens, 3 to 4 feet, and 4 to 5 feet.
PRIVET, evergreen, bushy, 2 to 3 feet, 3 to 4 feet and 4 to 5 feet,
THORN, Quick, extra strong, transplanted, 1½ to 2 feet, and 2 to 3 feet.
CHESTNUT, Horse, fine specimen Avenue trees, 10 to 16 feet.

Large quantities of the above, and other Nursery Stock, well-rooted and cheap, of which a priced CATALOGUE may be had, post free.

R. TUCKER, The Nurseries, Faringdon, Berks.

FOR SALE, the following young FRUIT TREES, all in excellent condition for transplanting, and the choicest kinds:—50 Cordon Apples, 3 Bush ditto, 9 Horizontal ditto; 85 Cordon Pears, 3 Bush ditto; 2 Trained Plums, 7 Trained Cherries.

Apply to J. HARRISON CARTER, The Cottage, Bexley.

CARNATION (true pink Malmaison).—The Subscriber has a few hundreds to spare, at £1 per 100.

Apply, BROTHERSTON, Prestonkirk.

CHRYSANTHEMUMS. — Strong Cuttings, best old sorts, buyer's selection, 1*s*. 6*d*. per dozen, 10*s*. per 100. For price of new sorts, see CATALOGUE. Many of the best prizes in the country are taken by my customers. — WM. ETHERINGTON, Chrysanthemum Grower, Swancombe, Kent.

BULBS.—Bargains.—Yellow Crocuses, large, 6*s*. 6*d*. 1000; Pheasant-eye Narcissus, 6*s*. 1000; Double Yellow Daffodils, 20*s*. 1000; Brenchleyensis Gladiolus, 27*s*. 6*d*. 1000; Campernelle Jonquils, large, 32*s*. 1000; finest Single mixed Anemones, 2*s*. 6*d*. 100; Lilium umbellatum, very large, 5*s*. doz.; large, 4*s*. 20*s*. orders carriage free.

D'ALCORN AND CO., Spalding, Lincolnshire.

Plums and Damsons.

MESSRS. FLETCHER BROS. have a large quantity of the above, Standards and Half-standards.

Ottershaw Nursery, Chertsey, Surrey.

KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY. President, G. C. SHERRARD, Esq., J.P.

The FOURTEENTH GRAND SHOW of CHRYSANTHEMUMS, FRUIT, &c., will be held in the Drill Hall, Kingston-on-Thames, on TUESDAY and WEDNESDAY, November 11 and 12, 1890, when, in addition to Valuable Money Prizes, the Sixth Champion Challenge Vase, value 25 guineas, will be offered. Entries close November 6. Schedules, and other information, may be obtained from

Mr. GEO. WOODGATE, Hon. Sec.

Warren House Gardens, Kingston Hill, Surrey.

NATIONAL CHRYSANTHEMUM SOCIETY.

GREAT CENTENARY CHRYSANTHEMUM FÊTE and DISPLAY, at the Royal Aquarium, Westminster, TUESDAY, WEDNESDAY, THURSDAY and FRIDAY, November 11, 12, 13, and 14, 1890. FIVE HUNDRED POUNDS offered in MONEY PRIZES, Plate, and Medals, including the—

Centenary class for 48 blooms of Chrysanthemums, 24 Incurved and 24 Japanese, distinct, 1st prize, £25; 2nd, £20; 3rd, £15; 4th, £10; 5th, £5. Classes for all types of Chrysanthemums, Table Decorations, Fruit and Vegetables.

A Bronze Centenary Medal will be awarded to every competitor in certain leading classes.

Entries must be received not later than the morning of Saturday, November 8. Schedules of prizes and all information can be obtained of

RICHARD DEAN, Hon. Sec. and Superintendent.

Frampton Park Nurseries, Hackney, London, N.E.

SCOTTISH HORTICULTURAL ASSOCIATION.

CHRYSANTHEMUM EXHIBITION and WINTER FRUIT and FLOWER SHOW, Waverley Market, Edinburgh, NOVEMBER 20, 21, and 22, 1890. Prizes to nearly FOUR HUNDRED POUNDS in Money and Plate, including City of Edinburgh Prizes for best 48 Chrysanthemum blooms, £20, £10, £5, £3, £2; for best 8 bunches of Grapes, £10, £5, £3, £2; for best Collection of Vegetables, £5, £3, £2. Schedules, and all particulars, on application to

R. B. FERGUSON, Secretary.

6, South St. Andrew Street, Edinburgh.

Chrysanthemum Show.

OUR ANNUAL EXHIBITION, now acknowledged to be the finest Trade Show in the country, will open on MONDAY, November 3. Admission until 1 P.M. free; 1 to dusk, 6*d*. each. Railway Station—Beeston, Midland Ry.

J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

To Gentlemen Planting.

SPECIAL OFFER of TREES for Immediate Effect. All prepared for removal. Each plant a Specimen. Root matted, and put free on rail for Cash:—

ARIES DOUGLASSI, 10 to 12 feet, 7*s*. 6*d*. each.
CRYPTOMERIA ELEGANS, 5 to 6 feet, 2*s*. 6*d*. each.
CUPRESSUS LAWSONIANA, 8 to 10 ft., 5*s*; 10 to 12 ft, 7*s*. 6*d*.
PICEA LASIOCARPA, 5 to 6 feet, 7*s*. 6*d*. each.
,, NORDMANNIANA, 6 to 8 ft., 5*s*; 8 to 12 ft., 7*s*. 6*d*. each.
THUIA LOBBI, 8 to 10 feet, 3*s*. 6*d*; 10 to 14 feet, 7*s*. 6*d*. each.
,, VERVAEANA, 5 to 6 feet, 5*s*. each.
,, ELLWANGERIANA, 4 to 6 feet, 3*s*. 6*d*. each.
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THE
Gardeners' Chronicle.
SATURDAY, NOVEMBER 8, 1890.

MR. EWBANK'S GARDEN AT RYDE.

THE Reverend Henry Ewbank belongs to that section of amateur horticulturists who find most delight in struggling with difficult or heart-breaking plants, which less patient, less enthusiastic cultivators discard as hopeless. Whilst the majority of gardens contain only plants which contribute to general effect, anything that fails to do this being discarded, there are a few in which the plants are the first, almost the only consideration, general effect being a matter of little importance. In the progress of horticulture these few gardens probably play a much more important part than all the rest put together. It would be easy to name some of the most noteworthy, but we are now only concerned with one of them, namely, that of Mr. Ewbank.

There are very few amongst those who take an interest in herbaceous and alpine plants and bulbs, who have not been indebted to Mr. Ewbank for valuable information with regard to the cultural requirements of rarities. Often, on writing him to ask how a lost favourite can be replaced, Mr. Ewbank's reply is to send the plant itself, with suggestions, which, if acted upon, will probably ensure its future good behaviour; for the Vicar of St. John's is one of those good-natured gardeners, who take a pleasure in sharing their favourites with others who show a genuine interest in them. For over twenty years the collection at St. John's, now almost as famous as that at Baden-Baden has been forming. Experimental gardening has been Mr. Ewbank's hobby from the start, consequently he possesses an enormous amount of information about hardy plants of every kind. How he sets about the cultivation of his plants he has told us himself in the following pithy words: "Incessant watchfull ness, very careful comparison, and a sort of mental tabulation of different rates of progress must be conducive to—or rather indispensable for—any cultivator's success. We must interrogate our

favourites by day and by night, month after month, and year after year; it is a matter of sympathy and devotion to their wants more than anything else, and if they do vouchsafe to tell us a little about their desires by a sickly appearance or sudden death, which sends us into mourning at once, or by their radiant smiles which serve only to captivate and delight, we must alter our methods accordingly, trying this, and then trying that. We must be ready to change, modify, and improve, we must be bound to no *a priori* conclusions whatever."

"Well, you will not find a pretty garden; on the contrary, something like a yard, with big beds everywhere, stuck all over with labels, and bits of plants behind them, most of them not worth growing." This was the remark made to me by a gardener of the purely ornamental school, when he learnt of my intended visit; but I had heard this kind of thing said before of gardens such as I expected to find at St. John's.

About a mile from Ryde pier, up on the hill, with a thick belt of trees on the north side, the church to the right, and full exposure to the south and west, and we are in Mr. Ewbank's garden. It is less than half an acre in extent, and is bounded by the house and walls on the north, east, and south, and by a border of trees and shrubs on the west side; a lawn in the middle, with large beds flanking it, and broad beds under the house and the walls. To the right of a group of fruit trees is the rock garden, of which more presently.

On entering the garden, the feast began with a glorious mass of the rich purple flowers of Ipomœa purga, and by the side of it many spikes of the Schizostylis, a weed here, as are many Cape bulbous plants in Mr. Ewbank's garden. The labels which my gardening friend had told me of were there, but the plants were there too—Bessera elegans, with scapes 2 feet high, and flowers twice as large as, and darker in colour than, any I had seen before; Pancratium maritimum, the true plant, whose big trumpet-shaped flowers are developed every year. Dean Herbert could only flower it by bringing it into the stove in the latter part of the summer; Mr. Ewbank has planted it in the border against his drawing-room window, where it flowers freely along with its cousin, viz., P. illyricum. Here, too, are such Cape bulbs as Cyrtanthus sanguineus, happy as a Daffodil; Ixias, Sparaxis, Oxalis Bowei, forming a thick carpet of glossy green leaves and large rosy-red flowers; Hedychium coronarium, as healthy as the better-known H. Gardnerianum; Poinciana Gilliesii, a stout bush, 12 feet high, in the robustest health, with numerous seed-pods hanging where the flowers had been. Mr. Ewbank is justly proud of this plant, which he had raised from a twopenny packet of seeds some twelve years ago, and has grown out-of-doors ever since. Probably this is the first instance of the flowering of this South American Leguminous plant out-of-doors in England. Mandevilla suaveolens, as vigorous as Ivy, clothed the front of the house; Lagerstrœmia indica grows, but does not flower there; Tropæolum speciosum was as strong, and had been as full of flower as ever I have seen it in Yorkshire.

Enough has already been said to show that the conditions in Mr. Ewbank's garden are favourable to the cultivation of many tender plants. A dozen or more degrees of frost is not an uncommon occurrence at St. John's, but the growth of the plants under the influence of a fierce summer sun, and good light even in winter, with the general absence of humidity from the atmosphere, enables them to endure even a fairly severe frost with impunity. Such plants as Littonia modesta, Iris Robinsoniana, Bomareas, Lachenalias, Freesias, the Caper-plant, Anemone Fanninii, Acacia dealbata (15 feet high against the church) thrive here perfectly, whilst in the neighbourhood of London we can only grow them in a greenhouse. The Padua Rue (Ruta patavina) is a weed in this garden, but a delightful one, forming bright yellow patches all over the beds. Watsonia humilis is as vigorous, and runs to seed as readily as its relative, Gladiolus purpureo-auratus, which is almost as troublesome to Mr. Ewbank as the Dandelion. Sternbergias were bright patches of yellow flowers, and occurred all over the garden.

The end of October is not the best time to see a garden crammed with bulbs which flower in early summer and go to sleep in the autumn. But I saw the labels at any rate, and scapes laden with seed-pods were strong evidence of the health of what was underground. Beds under the Apple trees, such beds as we usually see Onions or Lettuce in, are here devoted to collections of Watsonias, Gladioli, Irises, Snowdrops (Octobrensis in flower), Colchicums, Crocuses, Pæonies, Sparaxis, and Daffodils. Collections of these too, not an odd one or two of each. *Multum in parvo* is written on every square yard of this garden.

The rockery is Mr. Ewbank's own invention, and is the outcome of twenty years struggling with plants which are not easily accommodated in an ordinary garden. Necessity compelled him to build a rockery (I believe I ought to call it a flag-ery), such as would afford shade and shelter to many plants without occupying much space. It is about 60 feet long by 12 feet wide, and I can compare it to nothing better than a huge slipper. From the ground to a height of 3 feet, a wall of pigeon-holes is made with bricks, then from this wall towards the middle, the ground slopes upwards for a yard and then downwards into the middle through which the path runs. At the "toe" end of the slipper the slope is gradual. Except where a group of Cacti and Agaves are planted, the whole of the top and slopes are covered with square pockets formed by flags erected on their edges or ends, and standing well up above the soil. Shelter and shade are thus secured, with a variety of positions suitable to a very mixed collection of alpine and choice herbaceous plants. It is astonishing how many plants can be accommodated on this rockery, and equally astonishing how many find what they want there. Alpine Primulas are as happy as any one need wish to see them; the new Gerbera Jamesoni looks like proving hardy; Celmisia spectabilis, the rare Lithospermum Gastoni, Calceolaria Kellyana, Morisia hypogœa, Phyteumas, Pulmonarias, Gentians, Ramondias, Androsaces, Jankæa, the latest of Max Leichtlin's discoveries, and hosts of other rare plants, most of which are the test of good careful cultivation, were looking perfectly happy. On the slope, facing south, were Opuntias, Echinopsis, Agave Deserti, A. Scolymus, and several other species; Yucca angustifolia is represented by a handsome example. Overhanging the rockery is a plant, 10 feet high, with six stems of Cordyline australis in flower; and not far off is a clump of the variegated form of Phormium tenax in full flower.

Mr. Ewbank has a weakness for Irises. All the choicest of Professor Foster's, of Max Leichtlin's, and of all other fanciers of these plants, are here. The latest wonders, viz., Gatesii, Susiani, paradoxa, are here represented by promising pieces. They are grown in Mr. Ewbank's own way, and at present they look as if they meant to succeed. Probably we shall hear of them again next summer.

On the walls and in the shrubbery I noted the following, viz.: Pterostyrax hispidum, 10 feet high; Abelia floribunda, a beautiful bush, which in summer is clothed with its large, bright red tubular flowers; Xanthoceras sorbifolia, Escallonia montevidensis, Magnolia Hallii, Pittosporums, Fremontia californica, Desfontainea, &c. Himalayan Rhododendrons are not quite as happy as they are where more shade is available, and the curious Rosa berberidifolia and Mutisia decurrens have to be reckoned among the things that have been. *Visitor.*

POTATOS. — Some recent comparative experiments by M. PAGNOUL, have shown that removal of the leaves diminished the weight of the tubers by one-half, although the number was not decreased. Cultivation under glass, either black, violet, or colourless, showed a diminution, not only in weight, but in number also.

NEW OR NOTEWORTHY PLANTS.

GLADIOLUS KIRKII, *Baker, n. sp.**

THIS new Gladiolus has been sent to Kew in a living state by Sir John Kirk, who received it from King William's Town in South Africa. Its flowers are small as compared with the robustness of its growth, with segments about an inch long, of a pure pale pink. It is allied to G. Eckloni, crassifolius, and ochroleucus.

MASDEVALLIA O'BRIENIANA, *Rolfe, n. sp.*†

This is a tiny little species, about 2 or 3 inches high, which has appeared in the collection of R. I. Measures, Esq., of Cambridge Lodge, Flodden Road, Camberwell. It is closely allied to M. simula, Rchb. f., but has much larger flowers, as they measure quite half an inch in length. Although so small, their colour is exceedingly pretty. The lateral sepals are bright yellow spotted with maroon, the dorsal one being paler, more transparent, and with brighter spots; the tips of the tails are yellow. As in M. simula, the flowers are imbedded among the leaves, while the remarkable lip, and the acute transverse ridge at the apex of the perianth-tube underneath, bear a close resemblance to what we see in the same species. The shape of the petals (described below) is also very remarkable. I know nothing further of its origin. It is dedicated to Mr. James O'Brien, of Harrow-on-the-Hill, Middlesex. *R. A. Rolfe.*

EARLY-FLOWERING CHRYSANTHEMUMS.

IT would seem that we shall soon have Chrysanthemums all the year round, but the summer-flowering kinds will, I think, hardly become popular, as they seem to be regarded by others, as they are by myself, as usurpers, and out of season, autumn and the Chrysanthemums being so intimately associated that one feels they cannot disconnect the two when the flowers come under notice. Not only is this so, but summer-blooming Chrysanthemums are not wanted, for besides clashing, there are plenty of other things then; but what is needed, and would be a great boon to most of us, are kinds that will come in with and immediately after Madame Desgranges, and its yellow sport, George Wermig, and

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* *Gladiolus Kirkii*, Baker, *n. sp.*— Cormo magno depresso-globoso fibris coronato; foliis productis 5—6 lineari-ensiformibus leviter glaucescentibus pedalibus vel sesquipedalibus; caule tereti bipedali; floribus in spicam laxam secundam dispositis, spathæ valvis lanceolatis; perianthii pallide rubri tubo brevi infundibulari, segmentis obovatis obtusis immaculatis minute, cuspidatis; staminibus limbo distincte brevioribus.

Corm depresso-globose, above an inch in diameter, crowned with a ring of fine fibres. Produced leaves 5 to 6, linear-ensiform, firm, rather glaucous, strongly ribbed, 1 to 1½ foot long, ½ to ¾ inch broad. Stem terete, 3 feet long, inflorescence included. Flowers many, forming a long secund spike ½ to 1 foot long; spathe-valves lanceolate, green, 1 to 1½ inch long Perianth pale pink, unspotted; tube broadly funnel-shaped, ½ inch long; segments 1 inch long, obovate, obtuse with a minute cusp, the two upper outer ½ inch broad, the two lower narrower. Stamens distinctly shorter than the segments. *J. G. Baker, Herbarium, Kew.*

† *Masdevallia O'Brieniana*, n. sp. — Densely cæspitose. Leaves lanceolate-linear, fleshy, 1½ to 2 inches long, 2 to 2½ lines broad. Scapes shorter than the leaves, one-flowered; flowers ½ inch long. Perianth-tube very short, with a sharp transverse ridge underneath at its junction with the free parts of the lateral sepals. Sepals a little keeled, three-nerved, ovate, acuminate into the slender tails, which are about equal to the rest of the sepal in length; the lateral ones bright-yellow, spotted with maroon, the dorsal one paler, more transparent, and with brighter spots; tip of tails yellow. Petals with very broad base, attached to the foot of the column almost to the insertion of the tip, then suddenly constricted on the under-side, and again expanded into a large, projecting tooth, with a much smaller angle on the opposite or upper side; apex broad and obtuse, very dark, blackish-purple near the base, variegated with two or three shades of orange-red above, and with two or three blackish-purple spots. Lip strongly unguiculate, and with nearly square, or really five-angled limb, strongly sagittate at base, obtusely three-lobed above, with a small rounded cushion near apex and a pair of acute keels near the base; variegated with yellow and orange-red, and with two or three blackish-purple and orange spots. Column slender, with broad wings, terminating abruptly about the middle; yellow, with some bright, maroon-purple markings; anther-case yellow.

give a supply of good blooms till November, after which date we are now getting embarrassed with riches. Already some progress has been made in the direction referred to, as we have several fine kinds, now out and in cultivation, and no doubt as so much attention is being given to the Chrysanthemum, and raisers of new sorts are so busily at work, we shall soon have more, and then there will be no lack of flowers outdoors in the autumn.

To plant late kinds in some districts is useless, as they rarely expand properly or escape frosts; but for those that come in during October there is a fair chance, and the thing is to have plenty of these. The best places for planting are up against low sunny walls or fences, or, failing situations of that kind available for the purpose, then open spaces among shrubs, or similarly sheltered positions, should be chosen; but wherever the plants are grown, it must be away from tree-roots, which soon rob and impoverish them to such an extent as to starve and make the blooms poor and small. To have them fine, the right thing is to prepare the ground by trenching it, or digging out good-sized deep holes, and working therein a heavy dressing of rotten manure, keeping the same well down for the encouragement of the roots and the plants to feed on when dry or hot weather sets in. Pot plants that have done flowering indoors are very good to plant out, as they are well established; but in spring the shoots should be thinned and limited to four or five, and it is better to divide and replant yearly any that are standing, making choice of the outside growths, and giving fresh places, or breaking up and re-enriching the soil, as Chrysanthemums are gross feeders, and like a good root run.

One of the best of the October-blooming kinds, if not the very best, is M. William Holmes, which will long help to perpetuate the name of that good, departed man, as the flowers are very fine and the colour extremely rich, and it will be a standard kind for some time to come. Lady Selborne is a most valuable sort, and very pure in its whiteness, and so also is Mdlle Lacroix, both Japanese, and well known to many. A pink sport from the latter has made its appearance, and that will be valuable in affording variety and distinctness of colour. Other very useful kinds for early work are La Vierge, Alexandre Dufour, Mrs. Cullingford, Précocité, Madame de Cariel, and to come in immediately after them, Elaine, Margot, Lord Beaconsfield, Avalanche, and Madame Pigny. These latter, against the shelter of a sunny wall, or fence, or warm border, come very fine if they have their buds thinned, and the season is at all favourable, but generally such large varieties as those last named are quite big enough for cutting for decorative purposes till late sorts come on under glass. *J. Sheppard.*

ERIOGONEÆ.

In a former number of the *Gardeners' Chronicle*, March 1, 1890, p. 260, I gave some remarks on those little species of Eriogonum, whose inflorescences are more or less capitate. An inspection of the accompanying figures shows that the habit of other



Fig. 103.—Eriogonum corymbosum.

Eriogonum species differs widely from those previously mentioned. There is for the first, Eriogonum Thomasii, Torr., fig. 105, from Southern California to South-west Colorado, a low, very slender glabrous plant, with rounded and ovate leaves, yellowish, often reddish flowers in large inflorescences, similar to those of a Gypsophila. Indeed, it may be used, especially the reddish form, like that. Eriogonum trichopodum, Torr., E. inflatum, Torr., E. tenellum, Torr., and especially the lovely E. atrorubens, Engelm., from Chihuahua, with narrowly lanceolate, 4 inches long leaves, and deep red flowers, are of a similar habit.

Of quite another habit is the virgatum group, of which E. racemosum, Nutt., from Utah to New Mexico, is a representative (see fig. 104). E. virgatum, Benth., E. vimineum, Dougl., E. polycladon, Benth., are near allies. The peduncles are white, tomentose, which makes all these species of 1 to 3 feet high, very remarkable plants.

A fourth section includes E. corymbosum, Benth. (fig. 103), of Oregon and the eastern base of Sierra Nevada to Nebraska and New Mexico, perhaps the species which, with E. tomentosum, would find the most admirers. It is a very fine plant indeed, as also its ally, E. microtherum, Nutt. The finest species of all, with relative large, rose-coloured flowers, and rufous-tomentose leaves, is E. tomentosum, Michx., from South Carolina to Florida. It is a tall herbaceous plant, with the radical leaves elongated oblanceolate-spathulate. Here also may be mentioned the tall E. alatum, Torr., from Nebraska to West Texas and Arizona, which is loosely silky-villous throughout. The flowers are yellow, three lines long. Another somewhat similar species is E. hieracifolium, Benth., the inflorescences of which are large and umbellate.

The number of all species of Eriogonum is more than a hundred. Though there are a great many of them well worthy to be cultivated, it is very seldom that they are to be seen in the gardens. The little forms are most effective in rockeries, whilst the larger ones may be cultivated with success in the hardy perennial garden. *Udo Dammer, Berlin.*

ROSES.

ROSE CUTTINGS.

Now is a good time to make Rose-slips—that is, cuttings with a heel. I used to strike all mine in a cold frame; but those that I put out in the open border gave equal, if not better, results. One or two things to be guarded against, and which generally lead to the failures of many, is never to allow the slips to get dry before putting them into the soil. If a large number is to be made, the butt-ends should be placed in water, or the shoots moistened and covered with a woollen cloth, and well watered as soon as planted. The slips should not be less than 9 inches long. In the open, frost is apt to loosen them in the soil, and it becomes necessary to tread the soil between the rows as soon after a frost as the soil loses its stickiness, and give the bed a gentle watering, to wash the soil tightly about them; or, better still, is to surface the beds with sand, when this will wash in, and assist in keeping the slip fast, and the soil air-tight. *H. Markham.*

FLOWERS AND THE PERFUME INDUSTRY.

M. Thomas Grimm describes, in the *Petit Journal*, the method by which, in the districts of Cannes and Grasse, enormous quantities of perfumes are annually made from the flowers grown in those neighbourhoods. He estimates that something like 62,000 acres are given up to the growth of flowers between the right bank of the Var and the chain of the Estérel. At one of the largest perfume factories of Grasse, M. Grimm found that the three principal operations in the making of perfumes were the preservation of the odour of the flowers by distillation, by *enfleurage*, and by exhaustion. The last-named process, which is applied chiefly to Roses, is perhaps the most important. It consists of submitting the petals of the flowers to the action of heat in broad deep pans heated by steam, and filled with a mixture of lard and beef fat. When the Rose has yielded up the whole of its essence, the contents of the vessel are placed in horse-hair sieves, and the kind of pomade which runs out under pressure is again placed in the receptacle with fresh Rose petals. This operation is three or four times repeated, in order that the fat may be thoroughly saturated with perfume. The resultant is not sold in this condition as perfume, since it is far too strong-smelling. It is treated as a kind of "stock," from which most of the perfume is afterwards extracted by means of alcohol, and the residual is used as a basis for pomade or for toilet soaps, according to the degree of aroma that may remain.

The distillation of flowers is still conducted by aid of the time-honoured machine called the "Florentine Receptacle." This apparatus collects not only the water distilled from the flowers, double, triple, or quadruple, according to the number of distillations, but also the essential oil, which is the very quintessence of the perfume. Ten thousand kilogrammes of fresh Rose leaves will provide only one kilogramme [2 lb.] of this essence; but only half that quantity of Orange-flower leaves is required to make a kilogramme of essence. There are some flowers which will not yield up their essence to what is called the hot method of manipulation. Among them are the Violet, Mignonette, Jessamine, and Heliotrope,

which have to be treated by a very delicate process; the petals are brought into contract with wool saturated with Olive oil, and then the perfumed oil is very carefully expressed. Nearly every operation connected with the making of perfumes requires to be performed very rapidly, since the value of the product depends in great measure upon the perfect freshness of the materials. The flowers are plucked by women shortly before dawn, are immediately cleansed, and piled up in great heaps in the workrooms, which themselves need to be very carefully chosen, since they must be spacious, well aired, and shielded from direct sunlight. That which M. Grimm visited satisfied these conditions admirably, being the crypt of an ancient Capuchin monastery.

Such is the rapidity with which the work has to be done, that if all the flowers used in the making of perfumes came to perfection at the same time, it would be impossible to accomplish it. Happily, that is not the case. The season begins with the Violets, on January 15, and they are gathered until April 15, In the Commune of Grasse alone, from 145,000 to 150,000 kilogrammes of Violets are manipulated during these two months. The Jonquils flower in February and March, and furnish 15,000 kilos. to the perfume factories of Grasse. The crops of Orange flowers and Roses are the most important of all; this harvest begins on April 20, and ends on May 31. The neighbourhood of Grasse produces annually 1,860,000 kilos. of Orange flowers, and 930,000 kilos. of Roses. Mignonette, which is gathered from May 15 to the end of June, yields a crop of 25,000 kilos. The Jasmine, which yields 147,000 kilos., and the Tuberose, which gives 74,000 kilos., are gathered from July 20 to October 10. Then comes the Cassia, with its concentrated, penetrating, and almost violent perfume, which begins to flower in October, and finishes at the moment when the Roses begin. No mention has been made of Lavender and Rosemary, because, although they are cultivated to perhaps a greater extent than any other flowers, they are chiefly treated throughout the South of France by nomadic distilleries, which move about from canton to canton. *J. P. B.*

THE BANYAN TREE OF THE STAATEN RIVER.

The Carpentaria settlements have recently become extended to the Staaten River, one of the first discovered in Australia by the Dutch. Here there has been found a Fig tree of vast dimensions by the occupant of the pastoral area, Mr. Joseph O'Reilly, and which I have, in consequence, named Ficus O'Reillyana. The lowest branches of the individual tree, of which a sketch is enclosed, start at about 5 feet from the ground, and extend on all sides to about 45 feet, the total height of the tree being 65 feet. The leaves and fruits (receptacles) are much smaller than those of Ficus Bengalensis, F. colossea, and F. Mysorensis; the intertwined air-roots join the main stem, as in the last-mentioned species. The aboriginal name of this Ficus is Yonnigaro! *Ferd. v. Mueller, Melbourne.*

THE WHEAT CROP OF 1890.

Before going into detail in regard to the Wheat crop of 1890, it will be well to refer to the estimates, and to the results of the harvest of 1889. In estimating the produce of the home-crop about this time last year, it was stated that the average indicated by the yield of the selected plots in the Rothamsted experimental Wheat field, probably understated the yield of the United Kingdom, but that the data at command did not justify any direct numerical correction. We now have, however, the record of the imports and exports, showing, therefore, the net imports during the harvest year from September 1, 1889 to August 31, 1890, which amount to 18,162,300 quarters; and adopting our ordinary estimate of consumption per head of the population at 5·65 bushels, there would remain nearly 8¾ million quarters required to have been provided by the home-crop and by stocks. It has been observed that, owing to the mildness of the winter 1889—90, and the cheapness of Potatos, the consumption of bread was less than usual; but assuming it to have been at the ordinary rate, and that there was no material difference in the stocks at the beginning and the end of the period, our estimate of the home yield would be proved to be too low, probably to the extent of about 2 bushels per acre, corresponding to total amount of about 635,000 quarters. As compared with the estimate of 8¾ million quarters available for consumption from the home-crop of 1889, in accordance with the above supposition, it may be stated that, in an article in the *Times* of September 6, Mr. Kains-Jackson pointed out that, according to the usual mode of calculation from the sales in the English markets, the amount available for consumption in the United Kingdom would be 9,464,000 quarters, an estimate which he believes to be entirely unreliable; whilst, founded on the same data, the estimate of the *Economist* of the sales of home-grown Wheat each week amounts for the total cereal year 1889-90 to 46,254,000 cwt., which is equal to nearly 10⅝ million quarters, at 61 lb. per bushel; and with 2 bushels per acre added for seed, would correspond to a produce of about 35½ bushels per acre, which is quite an impossible quantity.

It may be added that, as a matter of fact, the estimates of the yield of the United Kingdom as a whole, founded each year on the average yield of the so selected plots in the experimental Wheat field at Rothamsted have, for a period of more than 30 years, been very closely borne out by the subsequent knowledge of the crops, and by a consideration of the requirements for consumption, the actual imports, and the estimated stocks of home and foreign Wheat. The question arises, therefore, how is it that last year the produce of the selected plots gave an average which subsequent knowledge shows was probably too low? The fact is that, notwithstanding very much more labour is annually expended on hand-hoeing than would be necessary with the crop grown only occasionally in rotation, some weeds, among which Alopecurus agrestis (Slender Foxtail) is the most prominent, have in recent years, aided by the character of the seasons, become very troublesome, and difficult to get rid of. For the crop of 1889, therefore, down one-half the length of the plots (the top), only alternate rows of Wheat were sown, in order the better to facilitate the eradication of this and some other plants, thus leaving only the lower half of the plots to be sown in the usual way; and it was upon the yield of these lower halves only, which are certainly subject to more loss by drainage, and are believed generally to yield less than the upper halves, that the estimate of the crop of 1889 was necessarily founded. Indeed, the necessity of taking the produce not only on one-half, but on, it is supposed, the worst half, of each of the plots, is believed to afford sufficient explanation of the abnormally low average yield indicated by the results. It may be stated, however, that the half plots still collectively make up more than 5 acres, whilst the half of the smaller of them amounts to rather more than one-seventh of an acre, and that of most of them to double that area.

Turning now to the crop of 1890, for it the full number of rows was sown on the other or top half of the plots, and only half the number on the bottom portion, with a view to the more complete cleaning of that part of the land. There is, therefore, again irregularity in the treatment of the plots upon which our estimates are generally founded. This time, however, it was the supposed better half of the plots that was full sown. Further, that portion of the land was, the year before, not only thin sown, yielding, therefore, smaller crops, but it was, moreover, hoed almost up to the harvest. Hence it would be supposed that the yield would this year be abnormally high, and not suitable to be taken without modification as the basis of an estimate of the yield of the country at large. Still it will be of interest, as affording evidence of the character of the season, to give the produce on the fully-sown portions of the plots in the usual way.

Accordingly, the following table shows the produce of Wheat in 1890 on the upper portion of the selected plots of the experimental Wheat field, which has now grown the crop for forty-seven years in succession. It also gives, as usual, for comparison, the average produce over the immediately preceding ten years, over the previous twenty-eight years, and over thirty-eight years, 1852-89 inclusive:—

Harvest.	Unmanured. Plot 3.	Farmyard Manure. Plot 2.	Artificial Manures. Plot 7.	Plot 8.	Plot 9 (or 16).	Mean.	Mean of Plots 3, 2, and 7, 8, 9 (or 16).
Bushels of Dressed Grain per Acre.							
1890	19⅛	50	41¼	45⅝	42½	44	37¾*
Averages:—							
Ten years, 1880-89...	12½	35⅝	33½	37¼	37	36	28⅛†
Twenty-eight years, 1852-79	13⅛	33½	32⅝	36⅛	36½	35	27¼‡
Thirty-eight years, 1852-89	13	34	32⅝	36½	36½	35¼	27⅛§
Weight per Bushel of Dressed Grain in Pounds.							
1890	59¼	61½	64¼	60½	59⅞	60¼	60¼
Averages:—							
Ten years, 1880-89 ..	59⅝	61	60⅞	60⅝	60½	60⅝	60⅜
Twenty-eight years, 1852-79	57¼	60	59⅛	59⅜	58⅝	59	58⅝
Thirty-eight years, 1852-89	58⅛	60½	59½	59½	59	59⅜	59½
Total Straw, Chaff, &c., per Acre, Cwt.							
1890...	12⅛	48⅝	42⅞	45⅝	45⅜	44⅝	35¼
Averages:—							
Ten years, 1880-89...	8⅛	31⅛	31¼	39⅝	40½	37⅜	25½
Twenty-eight years, 1852-79	11⅛	32¼	33½	40¼	41⅛	38½	27½
Thirty-eight years, 1852-89	10⅞	33	33	40½	41⅜	38⅛	27

Here, then, the yield, calculated in the usual way, but on the produce of one-half only of the plots, as above described, indicates an average of 37¾ bushels per acre at 60¼ lb. per bushel, corresponding to 37¼ bushels at 61 lb. per bushel. To go a little more into detail: The unmanured plot, which gave an average of only 13 bushels over the preceding thirty-eight years, now gives 19⅜ bushels at 59¼ lb. per bushel, a quantity which has only been exceeded five times in the forty-seven years, namely, in 1845, 1849, 1846, 1854, and 1857. The farmyard manure plot, with an average of 34 bushels over thirty-eight years, this year yields 50 bushels, which has never before been reached; the highest amount having been 44 bushels in 1863, a year of extraordinary productiveness. Plot 7, with an average over thirty-eight years of 32⅝ bushels, now gives 41¼ bushels, which has only been exceeded four times, in 1854, 1857, 1863, and 1864. Plot 8, with an average of 36½ bushels, in 1890 gives 45⅝ bushels; it has, however, yielded more seven times, in 1863, 1864, 1854, 1857, 1870, 1868, and 1865; its highest yield having been 55⅝ bushels in 1863. Lastly, the mineral and nitrate plot (9 or 16), against an average of 36½ bushels, this year gives 42¼ bushels, which has been exceeded eight times, in 1857, 1862, 1863, 1864, 1865, 1868, 1870, and 1883. It should be added that plot 8, and the nitrate plots, which this year do not come up so nearly to their maximum yield as some of the other plots, were laid perfectly flat by the heavy rains of July; whilst plot 7, though considerably laid, was so in a less degree.

It must be obvious that, even admitting that the above amounts were obtained on the better half of the respective plots, and after what may be considered as a partial fallow the year before, such uniformly high results, under such very widely varying conditions as to manuring, and with such widely different actual amounts of produce accordingly, could not have been obtained unless the season had been in some respects unusually favourable for the crop. Not only at Rothamsted, but in the Wheat-

* Equal to 37½ bushels, at 61 lb. per bushel.
† Equal to 27⅝ bushels, at 61 lb. per bushel.
‡ Equal to 26⅞ bushels, at 61 lb. per bushel.
§ Equal to 26⅝ bushels, at 61 lb. per bushel.

growing districts generally, there were lower than average temperatures, with an excess of rain in October, and the seed-time was, upon the whole, not very favourable. There then followed a deficiency of rain almost throughout the season to the end of June; and although December was very severe, there were higher than average temperatures in November, January, the beginning of February, and in March; after which the temperature was, with the exception of the end of May, pretty generally lower than the average, up to harvest. The conditions of the winter and early spring were thus, upon the whole, favourable for making root where there was a good plant; though there were many complaints that it was thin, partly from the unfavourable seed-time, and partly from destruction by slugs or other insect injury. The spring and early summer were also favourable for continued vegetation and bulk. It was under these conditions that up to nearly the middle of July the plots in the experimental field at Rothamsted promised to yield very much heavier crops than usual. Indeed, it was considered that if they were not laid, and the weather were favourable for ripening and harvest, some of them might produce as much as in 1863, the year of highest produce throughout the whole period of experiments. But, unfortunately the heavy rains of July laid the crops of best promise flat, and, as is well known, many of the Wheat crops of the country at large suffered in the same way; whilst frequent rain and continued low temperatures retarded maturation and harvest operations, especially in the earlier districts and in Scotland.

It was after the heavy rains and low temperature of July, and the laying of many of the crops, that most of the forecasts of the harvest were published, and they generally assumed only about, and sometimes under, average yields. However, Mr. George T. Turner, who every week gives a "Review of the British Grain Trade" in the *Agricultural Gazette*, in his article of September 8, after referring to the generally fine and hot weather of the preceding week, and to the progress of the harvest, says:—"The crops, as a general rule, have looked very bulky in stook, and many of the laid Wheats have turned out much better than was expected; had there been better August weather, it is the opinion of many, and shared by the writer, that the harvest of 1890 would have been one of the biggest and one of the best since that of 1868." Here, then, the opinion formed of the Wheat crops of the country, which the writer says he shares with many, is in accordance with the high promise, and with the general character of the results of the Rothamsted experimental plots. Now the estimated yield of the crop of the country at large in 1863, with which, up to the beginning of July, the promise of the present year was compared, was 38¾ bushels; whilst that of 1868, with which Mr. Turner compares the early promise, was 34 bushels. Although, however, 1868 gave a high yield of corn, the season being characterised by unusual heat and drought, the produce of straw was comparatively small. The characters of the season of 1854 were, in fact, in some important respects, more nearly allied to those of the season just past until the time of the damaging rains of July. Thus, both seasons were characterised by, upon the whole, though with temporary exceptions, higher than average temperatures during the winter and early spring; but lower than average during the actively growing and even ripening periods. In 1853-4, after an excess of rain in October, there was less than the average in every month up to harvest, with the exception of May, when there was a considerable excess, and August, when there was about average. In 1889-90, there was also, after October, less than the average amount of rain in every month up to the end of June, excepting in January and in March; but in July there was a great excess, and average or full amounts in August. But notwithstanding the prevailing low temperatures during the actively growing and ripening periods, not only was the produce of straw very high in 1854, but the average yield of grain stands third among the whole series of years from 1844 up to the present time; and under, in many respects, very similar conditions up to July, the promise of the crop of 1890 was very high, though it was in many cases much damaged afterwards. The maturing and harvest weather were, in fact, much more favourable for the crop of 1854 than for that of 1890, and with this the yield of grain was the higher in 1854. But the produce of both seasons clearly illustrates the fact, that prevailing high temperatures during the period of active growth, and even of ripening, are not essential for the production of large crops of Wheat.

It is generally admitted, however, not only that the best crops of 1890 suffered much after the time of high promise, but that the crop is exceedingly variable in one and the same locality; in some cases yielding very high, and in others deficient crops, owing to deficiency of plant, or to injury during the ripening and harvest periods. Indeed, among the non-experimental fields at Rothamsted there are both high and low yields, the latter chiefly due to loss of plant in the winter. Under these circumstances, there is this year, as there was in the two preceding years, unusual difficulty in estimating the crop of the country at large. It has been explained why the produce of the selected plots in the experimental field at Rothamsted is abnormally high this year, and cannot, therefore, be taken as a basis for estimating the produce of the United Kingdom in the usual way. Nor would it be admissible to bring in the produce of the lower half of the plots, carrying only half the usual number of rows, and take the average of the two portions. It can hardy be doubted, that, although the season has produced many poor crops, it has also produced many heavy ones, and that the yield per acre of the country at large will turn out to be over an average. Owing, however, to deficient plant in some cases, or to subsequent damage, it obviously cannot be taken as nearly equal to that either of 1863, which, as has been said, was 38¾ bushels; of 1868, which was 34 bushels; or of 1854, which was 34¾ bushels. On the other hand, there can be little doubt that the crop of this year is better than that of last, which experience seems to show was about 29½ bushels, at 61 lb. per bushel. According to the *Agricultural Produce Statistics*, it was 29·89 bushels. Upon the whole, the evidence seems to point to a yield of the crop of 1890 of not less than 31, and of not more than 32 bushels, at 61 lb. per bushel.

The population for the current harvest year is estimated at rather over 38½ millions (38,523,538); and, taking the consumption at 5·65 bushels per head, the amount required will be nearly 27¼ million quarters (27,207,249). The area under the crop in the United Kingdom has been rather under 2½ million acres (2,479,544), or 61,176 acres less than in 1889. If the home-crop of 1890 be estimated to yield 31 bushels per acre at 61 lb. per bushel, the gross produce would be rather more than 9½ million quarters (9,608,233), which, deducting 2 bushels per acre for seed, would leave rather under 9 million quarters available for consumption (8,988,347); or, if the crop were to yield 32 bushels, the total produce would be rather under 10 million quarters (9,918,176), and deducting 2 bushels per acre for seed, there would remain rather over 9¼ million quarters (9,298,290) for consumption. On either supposition, notwithstanding the reduced area under the crop, there would, with a higher yield per acre this year than last, be a larger amount available for consumption from the home-crop. On the assumption of a yield of 31 bushels per acre, there would require to be provided for consumption from imports and stocks nearly 18¼ million quarters (18,218,902); or, on the assumption of 32 bushels per acre, the amount required to be provided from other sources would be rather under 18 million quarters (17,908,959). It would appear probable, therefore, that the quantity required to be imported for consumption within the current harvest year will be about 18 million quarters, rather more or rather less, according to the turn out of the home-crop. In either case, the amount of the required imports would be very nearly the same as during the last two harvest years. *J. B. Lawes, Rothamsted, October* 22, 1890.

CHRYSANTHEMUM GLEANINGS.

The Temple Gardens.

The show at this place is less bright than formerly, and the blooms have suffered much from damp, owing to the proximity of the river with its fogs, and the inefficient sort of house which Mr. Newton is compelled to make use of. We cannot help thinking that such a ramshackle shed is a disfigurement to the otherwise well-kept gardens of the Inner Temple. The plants are lean, and the flowers will not compare in size and freshness with those Mr. Newton has delighted the town with in former years. Perhaps London weather has not been too propitious, or our atmosphere is altering for the worse, or money is scarce. And Londoners are getting tired of seeing and being asked to admire tall naked-stemmed plants drawn four or six deep in straight lines—all on one side of a glasshouse—and a 3 feet gangway in the front of the battalion for the accommodation of the sightseers. But we hear there are hopes of there being omething better another year.

Battersea Park.

Here the Chrysanthemums are grown in a span-roofed house in the reserve garden near the Albert Bridge. The display is a good one, consisting as it does, of 1500 plants of varying height, and the best modern and old varieties. They are placed in a dense, wide, sloping bank on one side of the path, and are mixed up as regards varieties and colours, in the usual indiscriminate tasteless way now fashionable. Some nice blooms were seen of the following:—M. Wieck fils, a flat petalled red chesnut Japanese, with yellow tips to the florets, it is novel in colour, and worth growing; the older Gloriosum, a golden thready Japanese; M. Chrétien, rosy-purple, with the back of the floret whitish, is a good flower, as is Souvenir d'Elise Dordan, which resembles in size and form the small quilled Asters; it has flesh-pink florets, and in the centre it is white. Brize du Matin, pale lilac, has a taking colour, and is a nice-looking flower for Japanese. Of nearly the same colour, but an incurved Japanese, is Mons. J. Freeman; it is like Madame Clémence Audiguier, but not so good in form. Charles Gibson, a coppery incurved Japanese variety, is desirable; as should be Petro Dioz, a handsome chestnut Japanese; the red chestnut-coloured M. W. Holmes, the back of whose florets is orange, is found in one or two examples; St. Leonard, rosy-purple, reflexed Japanese, very symmetrically formed, and florets flat; M. Castel is a thread-petalled Japanese—a rich brown flower. This is the second year that Chrysanthemums have formed a special object for sight-seers in Battersea Park.

Victoria Park.

In the Cambridge Heath end of the park, the substantially-built house, 100 feet by 25 feet, is filled with a collection of some 2500 plants, which have done well under the care of Mr. Large this year, and good-sized blooms are a general rule. The Japanese varieties are very numerous, while the incurved section is not so largely represented; neither are they so good in quality. The bright-flowered Sunflower was very noticeable, while J. Salter, Lady Selborne, M. W. Holmes, J. Laing, Avalanche, E. Molyneux, The Cossack, Mons. Tarin, and Madame de Sévin, are equally attractive and numerous. La Triomphante deserves mention for its large size. Mrs. Alpheus Hardy is here represented by one of the best blooms of this variety which we have yet seen, the flower measuring 10 inches through, but it is not a satisfactory variety. The golden-yellow, flushed with crimson-red, of William Clark, makes that flower distinct and desirable; while Lady T. Lawrence, a fine white, Madame la Marquise de Mun, fine rosy-purple, Northern Light, yellowish-red with crimson reflex, are good; and J. Mahood is represented by remarkably good coloured blooms. Stanstead Surprise has done well, and will become a favourite variety; and the pink sport from Mdlle. Lacroix is also an attractive novelty. Many of the older established varieties are showing meritorious

flowers; and, considering the quantity of smoke in the air of the neighbourhood, the display is highly creditable.

Southwark Park

Is situate between Rotherhithe and Bermondsey, amid surroundings not conducive to the best health of plants, as is clearly evidenced by the trees and shrubs in the grounds. The difficulties of Chrysanthemum growing must also be great, and Mr. Bush may be congratulated on the fact that Mr. J. Fransham has been able to make a display of some meritorious examples. One is struck with the effective arrangement of the plants in a house measuring 58 feet by 25 feet, where a central group of plants, instead of presenting one regular slope, as is usually seen, is arranged, as it were, in three masses, and each with its own high centre, a greater expanse of bloom being seen at one time by this method, a mass of yellow composed of Gorgeous, Mr. Bunn, and Gloriosum first catches the eye on entering. All round Florence Percy is met with in quantity, but one of the most distinct in colour is William Clark. Mrs. Alpheus Hardy is included, but does not give satisfaction. M. Ch. Leboscqz, large-flowered Anemone, looks to be a promising variety. La Fraicheur, a pink Japanese, is used freely for the first line, as it is of good dwarf habit. Among the other varieties are Charlotte de Montcabrier, Criterion, Ed. Audiguier, Madame de Sévin, Condor, Mons. Tarin, Chang, E. Molyneux, Beverleys, Pink Venus, J. R. Pearson, M. W. Holmes, and several Pompons.

Finsbury Park.

The collection here still maintains its reputation for fine quality and bright colours: the incurved varieties, G. Glenny, Mrs. Rundle, Refulgens, A. Salter, and the Queen are specially fine. Among the Japanese the clear colour and fine development of the blooms is very noticeable—undoubtedly the clear atmosphere in that region has much to do with the clean appearance. There are not so many novelties here this season, but that is, perhaps, no loss. We saw John Doughty and Mr. Robert Moody together here, but they are practically the same. Stanstead Surprise was represented by very large heads, and the rich carmine-purple St. Leonard is a handsome, reflexed flower. James Salter was showing great variation in form; Alice Bird is a fine, deep orange, but not large, which is a pity; Pourequet is a rich purple-plum, with feathered rays, a fine coloured flower. Among other notable samples were Esperance, Fimbriatum, Lady Selborne, Alfred Chantier, Bouquet Fait, Etoile de Lyon, Puritan, Stanstead White, Avalanche, very fine; M. W. Holmes, Comte de Germiny, Nil Desperandum, and Dr. Sharp. The exhibition is still held in the old house, and Mr. Maudlin, who grew about 1,700 plants, has this year arranged them in a central group, visitors passing up and down the sides of the house.

Woodhatch, Reigate.

In the gardens of T. B. Haywood, Esq., the Chrysanthemum has done remarkably well, and two houses are full of plants, showing superb flowers of wonderful size and colour. The Queens, and the Empresses, Miss M. A. Haggas, Prince of Wales, Violet Tomlin, and Jeanne d'Arc, must be specially recorded for fine form, large size, and substance; and a very fine flower of Refulgens calls for notice, as much for its high quality as for the "hairy" development, which is the feature of Mrs. Alpheus Hardy, a variety which has been a failure here as elsewhere, on account of its weak constitution; this bloom of Refulgens shows the characteristic hairy reverses in a very marked degree, and other flowers opening on the same plant are also hairy. The varieties Sunflower and Mrs. F. Jamieson are remarkably fine representatives in the Japanese section, others being Madame de Sévin, Ed. Molyneux, Avalanche, Sarah Owen, Yellow Dragon—very rich; Stanstead Surprise, large and perfect balls; and Carew Underwood, beautifully coloured.

One of the features of this collection is the grand lot of Anemone-flowered varieties, which are carrying blooms of very high quality, foremost among them Leboscqz must be placed; it forms a large even head of yellow, shaded red-brown, rays paler; the centre florets are large, of good length, and not too tightly packed; it is certainly a welcome addition to the section. Miss Annie Lowe showed up well as a bright yellow, having the disc lighter than the rays, while Thorpe Junior and Sabine are also good. Nelson shows large purple-crimson flowers, and is one of the best; a fine white is Lady Margaret, and Mrs. Judge Benedict, yellow, with pinkish rays, is a large flower, of much merit; while La Marguerite commands attention by its deep colour.

Among other novelties, was John Doughty, the bronze-pink sport from Queen of England, and a very handsome flower it is; also Memoir, a sport from Mrs. H. Wellam, pale yellow, with slight purplish stripe—a variety which originated in these



Fig. 104.—Eriogonum racemosum. (see p. 525).

gardens under Mr. Salter, who has reason to be proud of his display this year; Madame de Cariel is a fine round-formed reflexed Japanese, of a pink-crimson colour. In Gladys Spaulding is an Anemone flower of bright yellow, but it is not very handsome, the guards are small, and the disc very dense and high—too high for the size of the flower.

Very fine for their richness of colour are Mons. Bernard and John Thorpe, both Japanese, the latter being a beautiful port colour. William Early is a fine reflexed Japanese, of circular form, and rich lake-crimson colour; and mention should be made of a plant of White Venus, bearing four flowers, three of which are of exceptional quality. There are grand representative blooms of the leading varieties, to which, however, we cannot devote space, but a word should be said with regard to the Pompones, which are really grand; Prince of Orange, Black Douglas, and Model of Perfection, among others, showing very large blooms in profusion.

A look through the Orchid-houses showed a very clean lot of healthy plants, many laden with buds, while Pleione lagenaria, Dendrobium bigibbum, and Cymbidium giganteum were in flower, as also were a few Masdevallias, but chiefly the white Tovarensis. In another house Zonal Pelargoniums made a bright show; and in yet another, Allamanda Hendersoni, with Stephanotis, Gloriosa superba, and Dipladenia boliviensis were very full of flower, the last-named also carrying some fruits.

Mr. W. Wells, Earlswood.

Just outside the railway station of the London Brighton and South Coast Railway are Mr. Wells' nurseries, where he has some 2500 Chrysanthemum plants on view; the popular varieties are embraced, and a few of the novelties, and all are grown more as decorative than as specimen plants. A charge is made for admission, and a share of the money is to be devoted to a charitable object, according to the votes of the visitors; the Gardeners' Royal Benevolent Institution and the Gardeners' Orphan Fund are both on the list.

Mr. G. Stevens' Nursery, Putney.

There is a fine display of bloom here—the collection consists of some 6000 plants, all in admirable condition. Amongst some of the most noticeable varieties were the new John Doughty, rosy-fawn; sport from Queen of England, Gorgeous (Japanese). M. A. de Lean is one of the best Japanese; Sunflower showed a rich golden-yellow, with long florets. Violet Tomlin, purple-violet sport from Princess of Wales; Mons. Bernard, Miss M. A. Haggas. A new Pompon—Lucy Stevens—is a good yellow. Madame Baco and Edwin Molyneux, John Lambert, sport from Lord Alcester, Marsa, Maiden's Blush, Mrs. W. Shipman also showed well. Stanstead White, Avalanche, and Elaine were the whites, and the latter is preferred for market. M. Charles Leboscqz is a welcome addition to the l. f. Anemone, yellow, shaded orange. In reflexed, George Stevens is a beautiful carmine-chocolate, novel and good. One of the best in the decorative section is Mrs. George Stevens, old gold—a really fine variety.

Dover House, Roehampton.

Here about 1500 plants are grown by Mr. McLeod the most of them in single stems for large blooms. They form a magnificent bank. The incurved blooms are particularly good. Amongst some of the best may be mentioned the Empress, Lord Alcester, Lord Wolseley, Prince Alfred, The Queen, Barbara, Mr. Bunn, and Jeanne d'Arc; of the Japanese, which are more largely grown, Madame C. Audiguier, Avalanche, Baronne de Prailly, Sunflower, J. Laing, M. W. Holmes, Criterion, Elaine, Monsieur Freeman, Mdlle. Lacroix, Comte de Germiny, Ralph Brocklebank, Fair Maid of Guernsey, and other favourites.

Chiswick.

There is a good collection in the Royal Horticultural Society's Gardens, the spacious house which up to now contained the collection of Figs, is now gay with a number of plants. Noteworthy are Etoile de Lyon, good; M. Astorg, Fair Maid of Guernsey, Edwin Molyneux, fine; Jardin des Plantes, Stanstead Surprise, Elaine, and Avalanche.

Mr. May, gr. to the Marquis of Bute, Chiswick House, has a bright array of flowers in the Camellia-house; 100 yards in length. All the old and good sorts (and some of the newer ones), in the various classes are represented.

Chrysanthemum Grouping.

These plants, as seen in nurseries, private gardens, most public parks—Southwark is a notable exception—and wheresoever else they may be found growing in pots in any great number, are put together in a stereotyped, higgledy-piggledy fashion. Now, this sort of thing shows us that the men who

grow the plants to the greatest perfection, are just about as competent to arrange them artistically, as a woodman is to make a piece of inlaid furniture. For this purpose we want the man who can furnish tasteful combinations of form and colour. The sinners in arrangement are to be found in every part of the country, so that none has earned the premier position in the matter, but they may all be docketed together. As at the Aquarium, so at the Crystal Palace, at Chiswick, Kingston, and elsewhere, the most marked feature is the want of taste. The result is quite kaleidoscopic, but scarcely satisfying. Of course, one speaks of the groups, not of show-stands of cut blooms, which are formal enough. An improvement in the groups might be made by grouping the colours in harmonies or contrasts of colours.

Why should there not be a group of all the exhibitor has got of, say, Cullingfordii, Flamboyante, Garibaldi, or others of that shade of chestnut or mahogany colour? In the neighbourhood of this patch of colour might be placed another—a yellow one—composed of Gloriosum, Gertrude Claridge, Golconda, or some other yellows, and so on. The



Fig. 105.—Eriogonum thomasii. (see p. 525)

above are Japanese, but the incurved are available for the same kind of treatment, or, being smaller in their flowers, they might be used to fill in the spaces, if circular patches of Japanese are employed. If framers of schedules did not make objections, we think that some kind of greenery, occupying, of course, a secondary place in the group, might be used with advantage as foils to the vivid-coloured blooms. *Kika in England.*

Orchid Notes and Gleanings.

LÆLIO-CATTLEYA × CASSANDRA, *Rolfe.*

This charming hybrid was described by me about two years ago (*Gardeners' Chronicle*, November 24, 1888, p. 596), on the occasion of its flowering for the first time. The plant was then eleven years old. Another flower has just been received from Messrs. James Veitch & Sons, the raisers, which shows a surprising improvement, both in size and colour. It measures 5¼ inches from tip to tip of the petals, while these organs measure 1½ inches across at their broadest part. Both sepals and petals are of a clear bright rose, with a few darker spots, especially on the dorsal sepal. The front lobe of the lip is rich crimson-purple, and very undulate, the throat pale yellow in front, ivory-white behind, the disc marked with light reddish-purple, and the ample side-lobes pale delicate pink, except the reflexed tips, which are deep rose in colour. The first flowers were much smaller, as well as paler in colour. They now measure 3⅝ inches from tip to tip of the petals, but, of course, a little allowance must be made for shrinkage in drying. The improvement is certainly greater than could have been expected. It was obtained by crossing Cattleya Schilleriana with the pollen of Lælio-Cattleya × elegans, and bears much resemblance to the mother-plant in floral details. *R. A. Rolfe.*

Orchids at Messrs. Hugh Low & Co.'s.

With two large houses full of strong, vigorous plants of Phalænopsis furnished with a great number of flower-spikes in all stages of development, with upwards of 500 plants of Angræcum sesquipedale sending up from one to three flower-spikes each, and with a houseful of the elegant Angræcum citratum, A. Ellisii, and others also in spike, to say nothing of the large quantities of Cattleya Trianæ about to produce flowers, the Messrs. Low & Co.'s nurseries at Clapton, need not fear a dearth of showy Orchid blooms throughout the whole of the winter. Of species and varieties of Phalænopsis now in bloom there are the pretty P. denticulata, some P. rosea, and P. amabilis, and a form of P. violacea, with ivory-white flowers bearing no trace of the rosy-purple of the type. This is an extraordinary and very beautiful variety, which we have not before met with.

In the block of six, long, span-roofed houses devoted to Cypripediums, a few good species are in bloom, and several hybrids, the most beautiful of which is a new one raised at Clapton between C. Spicerianum and C. Lawrenceanum; its massive, well-formed pouch is prettily marbled with purple and green, and its dorsal sepal, which resembles that of C. Spicerianum, but is larger and broader, is white, flaked with rose at the sides, and having a band of purple running up the centre; also coming into bloom is a quantity of plants of C. insigne imported from a new locality, the beauty of whose flowers, that were produced last year, was at the time noted by us. This year some more showy novelties are expected to appear among them. Among the immense stock, the fine condition of which is remarkable, a number of the fine white Dendrobium formosum giganteum, the last of a great show of it, was observed; a lot of Oncidium varicosum, in good condition; also Pilumna nobilis, and Oncidium tigrinum; and, in smaller quantities, were various Masdevallias, Odontoglossums, and other flowers of the season.

Dendrobium formosum.

This magnificent white-flowered Dendrobe is, says Mr. Sander in the last number of the *Reichenbachia*, best cultivated in a basket in a temperature of about 80° at night; by sunheat the temperature may rise to 110°. Abundance of water and humidity, and very little shade should be given. When the growths are finished, water must be gradually withheld, so that the plant may be rested. This plant must, however, not be removed to a cool-house, or it will die, for in what is called the cool time in its native country, the temperature is very high compared to that of many other Indian Dendrobe stations. Brown fibrous peat and sphagnum are the best materials whereon to grow the plant. *Reichenbachia.*

Cypripedium Morganiæ × var. Burfordensis.

C. Morganiæ × is certainly one of the very finest of all Orchids, if not the finest. Opinions will differ as to relative merit, but none will deny the grandeur of the hybrid raised between C. superbiens fertilised by the pollen of C. Stonei. In the present number of the *Reichenbachia*, a variety is figured which has essentially the same origin, and which was raised by the late Mr. Spyers between a broad bright, long-petalled form of Stonei with the noted Demidoff variety of C. superbiens. It has larger and more richly-coloured flowers, with somewhat shorter, broader, and more heavily-spotted petals than the typical C. Morganiæ ×. It requires a stove temperature, and should be shaded. They do best, according to Mr. Sander, in small pots or deep pans, in fibrous yellow loam, to the extent of a third of the potting material. The figure published by Mr. Sander is finely executed.

Cattleya Bowringiana.

An autumn-flowering species, native of British Honduras. In growth it is distinct from all other Cattleyas, in having a peculiar globe-shaped base to its pseudobulbs. The flowers range from rosy-pink to deep purple and crimson, the lower half of the lip being of a deep maroon-crimson, the inner half white or rosy, and often veined light purple. It was introduced by Messrs. Veitch. It is well figured in the last number of the *Reichenbachia.*

Vanda teres var. candida,

resembles the typical plant in its habit of growth and general appearance, but has more slender stems, and paler and more acute leaves. The flower is pure white, with the exception of a rosy-flush on the lip. This plant requires to be grown close to the glass in the warmest position, and to be subjected to abundance of moisture during the growing season. After growth, the supply of moisture should be decreased, and the plant placed in a cooler house. The plant figured in the *Orchid Album*, t. 409, is from the collection of the Duke of Marlborough.

Cœlogyne peltastes, *Rchb. f.*

This distinct and pretty Cœlogyne was introduced by Messrs. James Veitch & Sons, from Borneo, and described in these columns in 1880 (n.s., vol. xiv., p. 295). Whether the plant soon afterwards passed out of cultivation, I cannot say, but no mention is made of it in the sixth part of Veitch's *Manual of Orchidaceous Plants.* It has now been re-introduced by Messrs. Linden, of Brussels, in whose establishment it flowered during last July. It is allied to C. pandurata, Lindl., and C. Mayeriana, Rchb. f., being about equal to the latter in size, and having emerald-green sepals and petals, and the lip variegated with creamy-white and brown. Its great peculiarity is, that the large but very thin pseudobulb forms a kind of convex shield over the scandent

stem, to which the specific name (shield-bearing) applies. The two edges are appressed to the supporting trunk, thus forming a kind of pocket or pouch, whose function evidently is to retain the water running down the trunk during the copious rains of that region, as is clear from the position of the roots. It is certainly a remarkable adaptation A figure will appear in an early issue of *Lindenia*. *R. A. Rolfe.*

VANDAS.

Those who are familiar with the fine specimens of these plants in the Holloway Nurseries, will read with much interest in the current number of the *Orchid Album*, the details of management which contribute so much to the success of Messrs. Williams' treatment. The Vandas are grown in well-drained pots, the compost used being simply a mixture of sphagnum moss with various sized nodules of charcoal. The plants, when potted, are plunged in a layer of sphagnum moss, and placed close up to the glass, being freely watered with the syringe. Messrs. Williams have plants varying from 1 foot to 18 inches and 2 feet in height grown in this manner, and they flower most profusely every season. When these plants become too tall for the position in which they stand, they are cut down, and the tops are potted in a similar mixture to that recommended above for the old plants. At first these tops receive a somewhat shaded treatment, until they make fresh roots, and become established, and afterwards they are placed in the full sun along with the older plants.

DENDROBIUM SCHNEIDERIANUM×.

A hybrid raised in the garden of Oscar Schneider, Esq., of Fallowfield, near Manchester, between D. Findlayanum and D. aureum. In habit it resembles Findlayanum. The flowers are large, sepals and petals creamy-white tipped with rosy purple; the lip is rounded at the base, where it is blotched with yellow, and streaked with some large darker lines and other smaller purple ones. The front of the lip is acute, white tipped with purple. *Orchid Album*, t. 411.

MILTONIA BLEUANA SPLENDENS.

A cross between M. vexillaria and M. Roezlii, raised by M. Bleu. The flowers partake of the characters of both species. The sepals and petals are broader than those of M. vexillaria, and the petals at the base are stained with violet or violet-rose, and the markings below the disc are a beautiful soft brown. It is well figured in the *Orchid Album*, t. 412.

ORCHIDS AT CHATSWORTH.

The Vandas at Chatsworth have all along been distinguished plants, splendidly grown, of large specimen size, and most of them having leaves down to the covering surface of the material in which their roots, or such of them as go into the material, are embedded. The Vanda suavis of Veitch and other firms are particularly marked, having growths quite 5 feet high, and the alternating leaves as green as emerald. During the season the flower-spikes must have been numerous, and the flowers of A 1 quality. In the large span-roofed house in which these plants are growing there is abundant head-room, and they are of sufficient length and breadth as to keep down any tendency to what ladies call a "stuffy" atmosphere. In this climate the Vandas delight to grow, and it is quite a treat looking at them now, after seeing them for the last twenty years or more—most of them in the best of health. This surely must be called capable culture, because the old "lions" that one has been accustomed to seeing are fast disappearing.

Vanda tricolor, particularly the one called the Dalkeith variety, is most valuable in respect of its freeness of flowering. Like hybrid perpetual Roses, this Vanda flowers twice a year at least. The flowers are very large, the segments broad in proportion, the blotching very prominent and distinct, and the labellum particularly rich in that Indian-red suffusion that goes so well with the particular shade of cream that characterise most of the sweet-scented Vandas. It was beautifully in flower when we visited Chatsworth a few weeks ago. To those acquainted with the Vanda tricolor section, this particular form stands out quite characteristically for itself, and no gardener who has an eye for these things can ever forget it even among a tribe where there is wonderful similarity about the different individual forms.

Renanthera coccinea has been remarkably successfully cultivated at Chatsworth. It is one of those clambering Orchids that cannot bear being twisted about a trellis and treated like the ordinary run of such climbing Epidendrums as rhizophorum and such like. Give it a raft of wood to cling to, and it will go up straight as a gun-barrel, throwing its roots alternately from the main stems like its distichous leaves. In such a house as the great winter garden at Chatsworth—the first gigantic attempt at glass palaces, in honour, we understand, of Czar Alexander of Russia, built by the Duke of Devonshire, and designed by the then Mr. Paxton, who afterwards had the honour of taking premier position for his design of the first Great International Exhibition of 1851, and for which he received the dignity of knighthood—this Renanthera has found a suitable artificial home. At the time of our visit it was grandly in flower, and the plant, which was a single one when we knew it, and a very small bit under the late Mr. Speed's care, has grown continuously; but now there are several plants of it, and the two of the biggest of them were in flower. One requires to look up to see the floral panicles, showing that those low stuffy houses are not suited to the wants of this showy member of the Renanthera family. On the one panicle there were over seventy flowers, and on the other considerably over sixty in several branches. This is cultivation—and cultivation, too, showing how grand an Orchid this is. Its vermilion-coloured flowers are very striking, and altogether it was an object that every orchidist delights to see. Coming, as this species does, from Cochin-China, the temperature of this great house is not over-heated in winter, and airy and pleasing even in the hottest summers, from the amount of square feet of space that the glass roof covers. This is evidently suited to the wants of this Orchid. It differs in this respect from Renanthera matutina, which comes from Java, and which is much easier flowered in the common stove houses of the country, owing to the great heat that the plant is subjected to in a course of Nature. There is none of the race, however, easily flowered; even that dimorphous Renanthera (sometimes called Vanda Lowii, requires special treatment. This species that we now describe never misses a season at Chatsworth after it has grown to what might be called adult size. We have had no opportunity of seeing those difficult-to-flower species in a state of Nature. Doubtless there will be something as to climate and other matters that, if we knew, might lead to success if it were in some measure imitated in our glasshouses here. When one sees such uniform success with a species that any one can grow, but few can flower at all, to say nothing of annual flowering, it is due to such gardeners as Mr. Owen Thomas to place such instances on record to be a guiding light to any who may be desirous of taking a "wrinkle." *James Anderson.*

PLANT PORTRAITS.

ALOCASIA BACHII×, Hort.—Leaves cordate, ovate-acute, deep green above, with lighter veins, dull purple beneath. *Illustration Horticole*, t. 109.

AZALEA INDICA, PERLE DE GENDBRUGGE.—Double white, well-formed flower. *Illustration Horticole*, t. 111.

BORONIA HETEROPHYLLA, *Revue de l'Horticulture Belge*, October 1.

CALANTHE VERATRIFOLIA, *Lindenia*, t. 252.

CYPRIPEDIUM FRASERI×, *Lindenia*, t. 253.

CYPRIPEDIUM PRÆSTANS VAR. KIMBALLIANA.—A splendid form, having the lip of C. Stonei, petals and upper sepal long, twisted, marked with brownish lines on a yellow ground, the petals with marginal tufts of blackish hairs. *Lindenia* t 249

CYPRIPEDIUM SELLIGERUM MAJUS, *Orchidophile*, September.

DENDROBIUM DALHOUSIANUM, *Lindenia*, t. 251.

ECHINOCEREUS PECTINATUS VAR. ROBUSTUS, *Gartenflora*, t. 1331. A Mexican species, with cylindrical-fluted stems, tufts of radiating short-pointed spines, and rose-coloured flowers about 2 inches in diameter.

GARDENIA STANLEYANA, *Garden*, October 4.

GEUM MINIATUM, *Garden*, September 27.

HÆMANTHUS MULTIFLORUS, Westnik, St. Petersburgh, October.

LILIUM BOLANDERI, L. MARITIMUM, and L. PARDALINUM LUTEUM, *Garden*, October 25.

MASDEVALLIA REICHENBACHIANA.—Flowers rosy-pink, with a white throat. *Lindenia*, t. 250.

PHAIUS HUMBLOTI, *Lindenia*, t. 254.

PRUNUS JAPONICA SPHÆRICA, *Revue Horticole*, October 16. A flowering shrub allied to Amygdalus nana of gardens.

SPINOVITIS DAVIDIANA, *Revue Horticole*, October 16.

STANHOPEA OCULATA, *Lindenia*, t. 256.

VANDA CŒRULEA, *Garten Flora*, t. 1332.

PLANTS AND THEIR CULTURE.

THE STOVE.—Much of the work here will be of a routine character, including the cleaning and sponging of the leaves of plants at rest. A slightly lower temperature should now be maintained by day and night, the former ranging from 65° to 70° on sunless days and 75° with sun-heat, and 60° to 65° during the night. Ventilate early, and close early also, and keep the glass outside and inside clean; when possible, air should be admitted daily for a short time. Many of the inmates at this date, when at rest, will be benefited by even lower temperatures than those given above, and these should be removed to the coolest part of the structure. Amongst plants of this kind are Clerodendrons and Bougainvilleas, but it is not safe to keep the first-named plant in a lower temperature when at rest than 55°, and the growth should not shrivel for want of moisture at the root. Allamandas and Bougainvilleas must now be kept dry, or a season's bloom will be sacrificed. Ixoras should be kept drier at the root, and if the shoots are not shortened back, it should be done without delay; also Dipladenias; but plants of the latter species, pruned back some time since, will have made new shoots, and should be repotted for early blooming.

Small plants of Ixoras may be shifted, and kept close for a time. In potting Dipladenias, a large proportion of the old soil should be removed, and the plants placed in clean pots of the same size as those they came out of. I also advise plunging these early-blooming plants in a bottom-heat of 80°. Those who have not got a warm pit or other suitable house would do better to rest the plants till January. For cleaning these and other plants liable to be infested with mealy-bug, there is nothing better than Bentley's soluble paraffin emulsion. Any plant at rest may occupy places at the back of the house, the front stages being made bright with the early flowering plants. Cactus Epiphyllum, which are obtainable in great variety, are invaluable at the cooler end of the stove, taking care to keep the blooms from being wetted. C. E. Gärtneri is a fine addition to this class of plant, and Amasonia punicea is another charming decorative plant, lasting many weeks in bloom in the winter. A few plants of the useful Thyrsacanthus rutilans are most effective at this season. There will be no lack of suitable subjects if a few of each of the easily-grown winter-blooming plants were propagated last spring, but as many of these can be grown in pits or other structures with an intermediate-house temperature, it is best to keep the stove for those plants which are actually in bloom and require a higher temperature than those. A few Poinsettias should be kept in a temperature of 55° to 60°, to form a succession to the early ones. A portion of the stock of Eucharis, if now kept a little cooler and dryer, will be encouraged to give a lot of spikes at the end of the year. *G. Wythes, Syon House, Brentford, W.*

THE ORCHID HOUSES.

THE CATTLEYA-HOUSE.—The greater number of species of Cattleya will have finished growth, and should be resting, with a lower degree of warmth, and the air of the houses should be kept drier, otherwise growths not thoroughly ripened will be apt to lose the skin which encircles them, and which, when not saved

in time, leads to the rotting of the growths, and in some cases the loss of the plant. Lælias of the autumnalis section, which includes Gouldiana and albida, must not be allowed to suffer from want of water. A long season of rest after flowering, indeed until the young fresh roots are seen to be pushing out in a cluster from the base of the last made pseudobulb, seems to suit these plants; water even then should be sparingly afforded them until it is seen that the fresh roots have taken firmly to some hard substance. I do not advise the covering of the roots with peat or sphagnum moss, but prefer to have the plants on rafts, standing in pots, and packing a few inches of fresh sphagnum moss, and a little silver sand added, under the plant. In this porous and firm compost the plants grow freely.

Where a large number of Cattleya Percivaliana and C. Trianæ are grown, I would advise the putting of a few plants into a warmer house, that is, if they were early in making up their last pseudobulbs, not otherwise. If this is done now, it will ensure a few early flowers so welcome at Christmas.

The Intermediate-house.—Pleione lagenaria has now nearly finished flowering, and no time should be lost in getting the plants repotted, care being taken in removing the old corms. If previous instructions have been followed, a great number of healthy roots will be found, which should also be carefully preserved, as, by these means, the plants will quickly establish themselves in the new materials. Keep the corms in a firm condition during the resting period. I have tried several different composts for these plants; but I now use one consisting of two-thirds peat to one-third of chopped sphagnum moss with sufficient coarse silver-sand to keep it porous. After repotting, no better place can be found for them than the warmest corner of the Odontoglossum or Masdevallia-house, where very little water will be required by them before the beginning of March. Dendrobium heterocarpum, and the earliest-flowering plants of D. nobile, should now be brought here from the resting-house, where they may be retarded, or put into another where there is a little more warmth. If the plants are brought direct from the resting-house into strong heat, many of the flower-buds, which may be showing, will be sure to go blind.

Comparettia macroplectron, a plant that does very well in this house, is now passing out of flower. I find the plant grows very well in shallow Teak baskets, with a little peat and sphagnum moss around the roots—just sufficient to make the plant firm. They require to be kept moist the whole year round, for if they are allowed to get in a dry state, the leaves quickly shrivel.

Cymbidium Lowianum, now throwing up its flower-spikes, if not in good condition at the root, should be turned out of the pot and examined, this in no way interfering with the blooming of the plant, unless the spikes should get injured. Should the plant be a large one, the pot should be broken, and the breaking of many roots thus be prevented. The compost which suits the plant is one that consists of two parts good turf, the fine soil well shaken out, and one part peat, chopped sphagnum moss, and coarse silver-sand. The plants should be potted firmly, and no water given for some days afterwards, if the soil used was in a moist state. Temperatures may still remain as they were. *A. G. Catt, Parkfield, Worcester.*

Fruits Under Glass.

Figs.—Where the April crop is gathered from the trees in pots, it is now time to bring in some of the best early bushes. It is presumed that all top-dressing, repotting, pruning, and cleansing have been done. One of the great advantages of Fig culture in pots, is that the root restriction brings about great fruitfulness; and a great number of varieties may be grown in a house of moderate size. Brown Turkey is one of the best known of Figs, and the best white Fig is White Marseilles; whilst other good sorts for forcing are Negro Largo, Osborne's Prolific, Early Violet, Black and White Ischia. Early Figs are not difficult to obtain, with proper care and a well-ventilated house or pit, that is well-heated. The pots should be placed on inverted pots or piles of dry brick, and filled up round about with fermenting materials from which the rankest fumes have been expelled. Fire-heat will be almost unnecessary for the first few weeks, after putting the bushes in the house, excepting that a small amount may be allowed on damp days, to dry up humidity. Early-forced trees planted out should be loosened from the trellis, and what little pruning is wanted done, and in doing so bearing in mind the dislike of the Fig to the knife, and particularly when dormant. The good cultivator only allows such shoots to get over the green state as his experience teaches him to be necessary for securing a crop or extending the tree. Wherever Fig trees make gross shoots, the roots are in need of being lifted and relayed nearer the surface, with possibly a restriction of rooting-space, and rendering solid the soil of the border. Short-jointed shoots 1 foot long, evenly distributed over the trellis, always produce good crops of Figs, while opposite results follow crowding the shoots. The shoots and branches will require washing over twice with strong soapy water, and if white scale be present, the wood should be scrubbed, except the shoots where the young fruits are located, around the bases of which very frequently the scale will be found tightly adhering to the bark. In this case it must be removed with the point of a knife, afterwards using the soap wash to destroy the eggs. Avoid all stronger insecticides. At the same time wash the wood work, glass, and walls, the latter being lime washed, a quantity of sulphur being used in the wash.

Strawberries in pots.—Very early plants with forward crowns should be allowed to feel frost of 3 to 5 degrees, but when it is colder than this they should have protection. Any plants put in to force during this month, may be expected to ripen their fruits in February; but December 1 is full early. Plants start well if placed close to the glass in a bed of tree leaves having a warmth of 65°, and the top heat does not exceed 50°. Here they may be kept till the flower trusses push clear of the crowns, when they may be removed to shelves in a vinery or Strawberry-fruiting house. Great care is needed to avoid any check in removal to the shelves, and the pots should be lifted partly out of the leaves a day or two before removing them entirely. To winter the stock of Strawberry plants, plunge the pots below the rim in a bed of coal ashes, taking special care that no plant is in a dry state, or has bad drainage. The protection of cold frames, with their fluctuating and sometimes drying air, is not so good as plunging the plants in the coal-ash bed. We rely upon La Grosse Sucrée and President for fruit from the end of February until June.

Successional Peach-houses.—No time should be lost in filling up vacant places with fresh trees of approved kinds from the open walls. These trees should have been grown with a view to their removal, having been lifted and replanted from time to time as was needed. When freshly planted, wait for the soil to settle before making them fast to the trellis, a few loose ties sufficing for the present. But little pruning will be necessary now. A depth of 2 feet of soil is sufficient for Peaches, and this may consist of heavy loam, mortar rubble, and crushed bones. The mass of soil should rest upon a layer of drainage materials 6 inches deep.

Late-houses.—If the young wood is ripe, open the ventilators day and night; meanwhile complete the renewal of borders and planting of trees, and finish what little pruning may yet remain to be done, afterwards dressing, washing of trees, and the whole structure. Trees that have been moved will start the best if left unpruned till the buds begin to swell, and if aided by one or two good waterings, fresh roots will seize on the soil. Late Peaches of good quality are more in favour every year, and such varieties as Sea Eagle, Walburton, Admirable, and Barrington should be bought in; whilst late Nectarines, as Humboldt, Dryden, Spencer, Albert Victor, and Victoria are excellent. *Wm. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

Plums and Cherries.—All wall-trained trees may now be pruned, and if at all infested with scale, a wash of strong soap-water, or a solution of Gishurst, at the rate of 8 oz. to the gallon of water, are good winter dressings. Where the fruit-spurs are long, cut them in severely, not for the sake of appearance, but to let in sunlight to the fruits. Neglected trees may not always be restored in appearance and fruitfulness in one season, and the cutting-back needs not to be done all at once, but piecemeal. As most old spurs have a bud near their base, and to this bud the old spurs should be cut back. The crop of fruit will be light the first season, but the quality will be improved, as well as the appearance of the trees. When the Plum is planted in a rich soil, growth is vigorous when it gets established.

When the Plum makes weak shoots, it is best to remove them, and select only those for laying-in which are strong, as only such make the best main branches. The shoots of the Plum do not require to be shortened at the winter pruning if they are well ripened throughout, except where new branches are required to cover vacant space. With Cherries the pruning is different, and the Morello and the sweet dessert Cherries require different modes of pruning. In the former the shoots are slender, and fruit is borne on the shoots of the previous summer; often all the buds along the shoots are blossom-buds, the terminal bud only being a wood-bud—therefore at the winter pruning, such shoots should not be shortened, but laid in at length, having regard to overcrowding it—the Morello should be treated similar to the Peach, that is leaving a quantity of old wood to furnish young shoots, and laying in young shoots in the summer whilst cutting out that which has fruited. Dessert Cherries are best when trained on high walls in fan form, but on low walls the horizontal form is better. If the summer pruning was well attended to, very little will now be required. The stubs left in shortening back the summer laterals should be cut back to within 2 or 3 inches of their base, and clusters of fruit buds will usually form at this point.

Walls.—In gardens where the walls are well-built, a good washing of soapsuds, Quassia-wash, or strong brine, should be applied; but where the walls are very old, and the bricks of perhaps different colours, a wash should be made of the following materials:—Quicklime, linseed-oil, and Venetian-red, mixed with boiling water. One quart of oil and a pound of Venetian-red to every gallon of wash will produce a warm old brick-red colour when dry, and to avoid having two shades of colour, a sufficient quantity for the whole length of wall should be mixed up at one time. The wash should be worked into nail-holes and crannies, where insects of all kinds usually abound. *A. Evans, Lythe Hill, Haslemere.*

The Kitchen Garden.

Broccoli.—In case any variety is growing too strongly, the plants should be half lifted with a spade, and pressed over towards the north. This method of protecting Broccoli is much to be recommended in cold parts of the country, and where the plants almost every year are liable to injury by frost. But should the plants have become sturdy, with short stems, the only protection likely to be needed can be afforded by lightly strewing over the heads some dry Bracken or dry litter during severe weather. If the ground on which the Broccolis stand is likely to be wanted for another crop or crops before the Broccoli season is ended, the plants may, with passable results, be lifted at this season with good balls of earth, and transferred to another part of the garden, planting them somewhat deeply in rows with the heads towards the north, and supplying the roots with a thorough soaking of water if the soil be dry. The heads of these lifted plants are never so large as those not lifted and removed.

Globe Artichokes.—Cut off all the stems and lower leaves if decayed, and coat the ground with plenty of manure, which may be dug in or left on the surface till the spring. The Artichoke, being a rather tender plant, it should be well protected before winter by packing each plant in stable litter sufficiently thick to keep out frost.

The Forcing Ground.—As the season is approaching for the forcing of all kinds, no time should be lost in procuring tree leaves and stable manure. These two, if well mixed in various proportions to suit the different plants to be forced, will, when made up into compact firm masses, keep up a lasting warmth during the winter, the declining warmth of which may be kept up with fresh linings of the same, or stable dung alone, if pigeonholed pits or wooden frames be made use of. Frames planted with Lettuces and Cauliflowers should receive ample ventilation. See to the cleaning of the ice-house; and put all tools used in the work of filling it, such as wooden mallets, rammers, picks, hooks, &c., in good working order, so that no time may be lost when hard frosts set in. *H. Markham, Mereworth Castle, Maidstone.*

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

MONDAY,	Nov. 10—	St. Neot's.
TUESDAY,	Nov. 11	National Chrysanthemum Festival (four days). Leeds Paxton (two days). Kingston-on-Thames (two days). Eastbourne (two days). Brighton (two days). Truro (two days). Lewes (two days). South of London (two days). Watford (two days). Exmouth. Weston-super-Mare.
WEDNESDAY,	Nov. 12	Royal of Jersey (two days). Croydon (two days). Birmingham (two days). Isle of Thanet (two days). Bournemouth (two days). Tunbridge Wells (two days). Catford (two days). Bath (two days). Cornwall Polytechnic at Falmouth (three days). Chelmsford (two days). Sevenoaks. Dartford (two days). Faversham (two days). Guildford (two days). Hampstead (two days). Great Yarmouth (two days). Canterbury (two days). Northampton (two days).
THURSDAY,	Nov. 13	Royal of Ireland, at Dublin. Reading. Birkenhead. Crediton. Taunton. Barnsley (two days). Cranbrook (two days). Southend (two days). Southgate (two days). Wimbledon (two days). Winchester (two days). Teddington (two days). Bristol (two days).
FRIDAY,	Nov. 14	Bolton (two days). Leicester (two days). Sheffield (two days). Reigate. Cheshunt (two days). Derby (two days). Eccles (two days). Hitchin (two days). Kettering (two days). Street (two days).
SATURDAY,	Nov. 15	Wellington. Ramsbottom.

MEETING.

TUESDAY,	Nov. 11	Royal Horticultural Society: Committees, and Lecture by Mr. Sutton.

SALES.

MONDAY,	Nov. 10	Dutch Bulbs, at Stevens' Rooms. Nursery Stock, at the Exeter Nurseries, Exeter, by Protheroe & Morris (six days).
TUESDAY,	Nov. 11.	Dutch Bulbs, at Protheroe & Morris' Rooms. Collection of Orchids formed by the late E. Harvey, Esq., at Aigburth, Liverpool, by Protheroe & Morris (two days).
WEDNESDAY,	Nov. 12	Dutch Bulbs, at Stevens' Rooms. Plants, Lilies, and other Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	Nov. 13	Imported and Established Orchids, from Mr. F. Sander, Lilies from Japan, &c., at Stevens' Rooms. Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Nov. 14	Orchids, at Protheroe & Morris' Rooms. Nursery Stock, at the Cooksbridge Nurseries, Sussex, by Protheroe & Morris.
SATURDAY,	Nov. 15	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Nursery Stock and Decorative Plants, at the Stamford Hill Nurseries, Amhurst Park, N., by Protheroe & Morris.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—42°.8.

The Chrysanthemum.

FOR the next few weeks the Chrysanthemum will reign supreme in gardening circles. So important is it, and so widely spread the interest, that a second Centenary Celebration is to be held next week at the Royal Aquarium, and some of our contemporaries, like the *Journal of Horticulture* and the *Gardeners' Magazine*, have blossomed forth into special numbers, devoted almost exclusively to the discussion of the culture of the Chrysanthemum, and to the depicting of the more prominent priests of the shrine. The *Magazine* contains some interesting details concerning a Chrysanthemum show in Japan, and gives two illustrations—one of some fine plants in large tubs, and nearly as formally trained as they may be seen here; the other illustration shows a Japanese variety with extra-long quills and a relatively small disc. To this the name of the great "Spiderkry" is given, but to us it has more the appearance of a huge sea Anemone, with its tentacles expanded. The annual Chrysanthemum show in Japan was one of the two occasions in which the Empress appeared in public. We cite from our contemporary some remarks from an account of one of these shows:—

"Under these Imperial awnings and tents there are collections of Chrysanthemums quite natural, but which do not look as if they were—wonderful Chrysanthemums, in the honour of which their Majesties have invited us—marvellous Chrysanthemums, of which our autumn borders can give us not the faintest idea. With geometrical regularity they are planted in quincunx form on sloping ground covered with moss; each plant has but one stem, and each stem but one flower. But what a flower! Larger than our biggest Sunflower, and always of such a beautiful tint, and of so rare a form. One has broad, fleshy florets arranged with such regularity as to resemble a huge pink Artichoke; another imitates a curly-leaved Cabbage of bronzy-buff; while yet another of the most dazzling yellow has thousands of fine, little florets, which spread out and droop like a sheaf of golden-wire. Some there are of an ivory-like white, others of pale mauve or else of the most splendid amaranth. There are striped ones and shaded ones. And some idea of the work that it takes to produce these enormous flowers can be gained by looking closely at the supports which are scarcely visible alongside the stems holding up those which are too heavy, or else pinching and arresting the sap of those which would open too quickly.

"Along the sides of the beds, and always under the same long violet silk awnings decorated with the heraldic Kiku crest, are more flower shows; we might say more fantastic Chrysanthemums, executed in the most extraordinary manner. Here are some enormous bouquets as big as trees, and instead of having only one stem, they have a hundred, arranged with perfect symmetry around a central trunk, and at the end of each branch a bloom, quite open, never past its best, never a bud, but always at the same degree of perfection the same day. Still, all that which has cost so much trouble must fade and pass away. Each one of these Chrysanthemums bears upon its slip of paper its name, written in those curious learned characters, enabling it to be read in two different languages—in Chinese as well as Japanese."

There is also an interesting account of one of these shows by a Japanese writer, originally published in *Garden and Forest*, but for it we refer our readers to our issue of November 9 last year, p. 526.

In our next number we hope to be able to figure a specimen of the wild Chrysanthemum, as furnished to us by Dr. HENRY, who has done so much to make known the treasures of the mountains of Central China. FORTUNE and other collectors of necessity chiefly confined their attention to the cultivated specimens they found in the shops and gardens of the great towns they were allowed to visit; but Dr. HENRY, as we have already mentioned, has discovered the original of many of these plants in the mountains of Central China previously unvisited by any botanical traveller. Here he found the single Banksia Rose, the original Chinese Primrose, the very remarkable Abies—or as it should be called (Keteleeria) Fortunei, the Pseudo-larix Kæmpferi, and a large number of other plants of the greatest interest, concerning some of which we hope to be in a position to publish Dr. HENRY's notes.

With regard to the history of the Chrysanthemum, we have little to add to the exhaustive account published in our columns last year, 1889, November 9, *et seq.*, by Mr. HEMSLEY, and for illustrations showing the evolution of the flower, we refer to our volumes for 1880, and again in 1889, when the matter was so thoroughly gone into that we do not propose to repeat the illustrations and descriptive matters, but shall confine ourselves to the task of reporting the progress as evidenced by the shows in this present year.

The prospects of good show flowers are very favourable in the majority of cases, but we also hear of much damping-off, especially during the last week or so. As regards the novelties of last year, attention must be given to that American introduction, Mrs. Alpheus Hardy, which created such a *furore* on its arrival, and it has been generally relegated to a very low place in the list of favourites, chiefly on account of its very weak constitution, and, at the best, its flowers are far behind some others in beauty; indeed, its hairy petals alone render it acceptable, and then more as a curiosity. This hairiness is seen in slight degrees in several flowers, and in the collection of Mr. T. B. HAYWOOD, at Reigate, is a plant of the old favourite refulgens, which exhibits this feature in as pronounced a manner as does the American variety. We have also seen other flowers of the incurved section displaying a strong tendency to go off in that direction, and so we may get a race or a section of "hairy" flowers, but we, for our own part, would rather be without them.

GARDENERS' ORPHAN FUND.—The monthly meeting of the Committee took place at the Hotel Windsor, Victoria Street, on the 31st ult., the Chairman, WILLIAM MARSHALL, Esq., presiding. The Hon. Secretary reported that the balance at the bank amounted to £217 12*s.* 3*d.* A report in reference to the DEAL Memorial Fund was made, and it was resolved that the Fund should definitely close on November 22. It is earnestly requested that all promised subscriptions be paid by that date. The committee trust enough money will be obtained to enable them, with the promised generous aid of Messrs. SHERWOOD and VEITCH, to place upon the Fund at Christmas the whole of the seven candidates who failed in their election in July last. The sub-committee appointed some time since to consider and report on a suggestion to change the time for terminating the financial year, reported to the effect that it is desirable the financial year should close on December 31 instead of June 30 as heretofore; and that the annual meeting should take place in February instead of July. The sub-committee also reported that certain alterations in the rules would be necessary if the recommendation of the Committee were adopted. It was unanimously resolved that the report of the Committee be adopted, and a special general meet-



Fig. 106.—Howeia [Kentia] forsteriana, Sydney Botanic Garden. (see p. 536.)

ing of subscribers to the fund will take place at the Cannon Street Hotel, on December 9, to sanction the necessary alterations in the rules. The sub-Committee also handed in a revised list of local secretaries, which was adopted. Some other matters of detail were considered, and the usual vote of thanks was passed to the Chairman.

—— A stall will be provided for the sale of cut flowers, fruit, &c., at the Croydon Chrysanthemum show on Wednesday and Thursday next. The money derived from the sale will be devoted to the Gardeners' Orphan Fund. Suitable contributions of flowers, fruit, &c., are solicited, and would be gratefully accepted, by Mr. G. W. Cummins, The Grange, Wallington, the local Secretary.

National Chrysanthemum Society.—The Great Chrysanthemum Centenary Festival, including a competitive display, is to take place at the Aquarium, Westminster, on Tuesday, November 11,

and three following days. The opening ceremonial will take place on the central stage at 1 o'clock, the President, Lord BROOKE, M.P., and Lady BROOKE being met at the entrance by the Reception Committee and the invited guests, and conducted round the exhibition. An address will be presented to Lady BROOKE, and the exhibition formally declared open to the public. The Conference meeting will be held in the Iron Room at 6 P.M., under the Presidency of Sir EDWIN SAUNDERS, F.R.C.S., Vice-President; and papers will be read by Mr. SHIRLEY HIBBERD, F.R.H.S., "On the Origin of the Florist's Chrysanthemum;" Mrs. MARIAN THROWER, representative of Northern Tasmanian Horticultural Society, "On Chrysanthemums in Tasmania;" Mr. G. T. HAITE, F.L.S., "On the Chrysanthemum in Art." Wednesday will be devoted to an inspection of the show, verifying awards, &c. On Thursday, a Conference will be held in the Iron Room, at 2 30 P.M., Sir GUYER HUNTER, M.P., Vice-President, in the chair, when papers will be read by Mr. BRISCOE-IRONSIDE, "On Experiments in Chrysanthemum Culture;" and by Mr. C. GIBSON, "On Chrysanthemums for Exhibition." At 6 P M. prompt, a grand banquet will take place in St. Stephen's Hall, Lord BROOKE, M.P., President, occupying the chair, and supported by representatives from foreign and colonial affiliated Societies and others. On this occasion ladies will be present, and Lady BROOKE is expected to accompany the President. Admission to the banquet hall will be by the private entrance from the Broad Sanctuary. On Friday, the last day of the show, St. Stephen's Hall will be arranged as a lounge, so as to afford an opportunity for conversation and social intercourse. In the afternoon, at 4 o'clock, an informal meeting will be held, with the object of affording opportunity for suggestions as to the future operations of the Society. The price of dinner-tickets has been fixed at 5*s*. each.

JOHN NOBLE.—Mr. JOHN NOBLE, of Park Place, Henley-on-Thames, whose death occurred recently, was (writes a correspondent), the head of the well-known firm of NOBLE & HOARE, the varnish manufacturers. From his beautiful seat at Park Place—a property, by the way, the purchase of which was contemplated at one time by a member of the royal family—a perfect view of the numerous pleasure boats passing up and down the Thames could be obtained, and at least 90 per cent. of these boats were coated with varnish manufactured by Mr. NOBLE'S own firm. Mr. NOBLE was a great believer in and supporter of thrift among his *employés* at Park Place, and he acted, through his steward, as the banker of their savings, allowing them a most liberal interest thereon. Park Place had been in Mr. NOBLE'S possession since, we believe, 1869, and during the time that the late Mr. ROGERS, the Superintendent of Battersea Park, was his gardener, and Mr. STANTON'S occupation of the post, the gardens have been in great part renovated and much improved. In carrying out these works, the main features of the park—its fine trees, in groups and single specimens, were carefully preserved, and the beauty of the banks of the Thames, at Henley, almost rival those of Cliveden.

THE BOTANICAL EXCHANGE CLUB.—The report for 1889 is before us, showing incidentally the existence of considerable activity in collecting wild plants, and in discriminating between nearly-allied forms. Several pages are occupied with details concerning Brambles, and it is interesting and also consolatory to see that considerable differences of opinion exist between the specialists. The characteristics of these forms seem to be well worked out; what is wanted are more investigations as to the significance and "reason why" of these myriad forms. Under the head of Athyrium filix-fœmina, a well-known botanist it appears sent to the referee "under sundry inconsequent names, a number of cultivated monstrosities." The referee writes concerning them: "I utterly fail to understand how any one can derive pleasure or profit from contemplating the exquisite proportions of the Lady Fern tortured into hideous deformities such as some of these. In accordance with the provisions of rules 2 and 3, the specimens should have been consigned to the fire, but I have distributed them in case any members may think them of interest." What will our Ferny friends say to that? They will probably say that they have a right to fancy what they please; while, from a naturalist's point of view, the evidence to be obtained from these despised forms is sure to be of importance.

INDIAN AND CHINESE CHRYSANTHEMUMS.—The following account of these is given in the *Journal de la Société Nationale d'Horticulture de France*," August, 1890. It appears that in Japan there are two methods of cultivating the Chrysanthemum. Subjected to the treatment known as Ogiku, the largest blooms are obtained from plants with but few stems, each of which bear but one blossom. The whole plant is kept dwarf (about 39 inches), so that the top-most flower may be seen. To obtain this result, the centre stem is, when quite young, cut down to the required height; this causes many side-shoots to be sent out. Of these branches those only are retained which appear to be the strongest, as, when flower-buds show, all the branches except the most robust are taken off, and on each of the remainder but one bloom is allowed to open; this, on account of its weight, is supported by a bamboo prop. The diameter attained is about 6 inches. It will be seen that this method is similar to the plan now generally adopted in such cases. As to the "Chugiku" method, that aims at obtaining on each plant as many flowers as possible. Manure is frequently and abundantly supplied, so that each specimen may have a strong stem. In this method also the plants are cut down to a certain height, that they may branch out well; only, all the side shoots are encouraged, and only those are suppressed which bear no buds. The chief aim is to make the plants as strong as possible, as otherwise the flowers would not be abundant. The Japanese know how to obtain such good results, that often each plant of Chrysanthemum in their garden bears a hundred blooms. A specimen has even been seen in the imperial garden which bore 300 flowers. Among the forms which the Japanese produce in their Chrysanthemums, the two principal are those which they call "Hokizukuri," which is a gigantic brush, and "Ogizukuri," which means a fan. To produce the first form, all the shoots on each plant are allowed to go straight up; to train them into the second shape, the lower branches are trailed along the ground and kept down by little pegs, their tips being allowed to grow and shoot straight up. As to the central branches, these also are allowed to grow upwards. Thus a fan-shaped plant is obtained.

CHRYSANTHEMUM SHOW AT MOOR PARK, HERTFORDSHIRE.—Mr. MUNDEL, the gardener to Lord EBURY at the above-named place, informs us that the Chrysanthemums in the houses at the gardens number nearly 150 varieties. These are now in full bloom, and may be seen by permission of his lordship. The entrance to the gardens is through the park, or Batchworth Heath Road. Mr. MUNDEL hopes that the two collecting boxes of the Gardeners' Orphan Fund which he has placed in the garden will show, on being opened, a satisfactory amount for that fund.

NATIONAL ROSE SOCIETY.—A meeting of the General Committee will be held, by kind permission of the Horticultural Club, at their Rooms, Hotel Windsor, Victoria Street, Westminster, on Tuesday, the 11th inst., at 3 o'clock, to make arrangements for the general meeting of the Society, and other business.

AKEBIA QUINATA.—Prof. MARIENS, of Louvain, kindly informs us that fruits of this plant have recently ripened in the nursery of M. Ch. van GEERT, at Calmpthout, near Antwerp. Notwithstanding the inclement weather of the summer, the seeds were matured about the beginning of October on a plant growing in the open air. The follicles of the fruit were, when open, of a beautiful blue colour outside, and contained many well-developed brown seeds imbedded in a fleshy, green, cylindrical mass, which extended along the dorsal suture of the carpel, and bore a slight resemblance to a large caterpillar. The fruits were altogether very curious and interesting, but soon became rotten.

"REICHENBACHIA."—The first part of the second series of this sumptuous publication opens with a biographical notice and portrait of the late Professor REICHENBACH. The new series will be conducted on the same lines as its predecessor, Mr. SANDER having secured the services of the leading botanists and orchidists.

PEAR BLOSSOM.—From Mr. SQUIBBS, of Gresford, Denbighshire, we have received trusses of a Pear in full bloom. The tree is reported to be one mass of bloom. It is on a wall in a south-east aspect, and in rather a bleak position. The flowers are borne on spurs, so that this is a case of precocious development of buds that should have been dormant till next spring. The flowers we usually see in autumn are borne on the midsummer shoots, not on spurs, and are the result of over-growth.

CUSCUTA REFLEXA.—Mr. BURBIDGE sends us flowering specimens of this curious parasite growing out-of-doors on Jasminum revolutum. The dense clusters of white, funnel-shaped, fragrant flowers are very attractive.

CRANBERRY CULTURE.—Mr. L. H. BAILEY contributes to our contemporary, the *American Garden*, an interesting article on Cranberry growing, which is now an established American industry. The plants grow best on boggy land, or rather on bogs from which the water has been drained off into reservoirs, whence it is turned on over the land once, and sometimes twice a year. Before all this is done, all vegetation must be ruthlessly extirpated from the swamp, which, when clear of roots or suckers, is covered with sand to a depth of about 4 inches. This sand serves several purposes—it keeps down weeds, and prevents extremes of dampness or drought from injuring the plants. Cuttings of these are put in and bear fruit three or four years later; transplanting old roots of Cranberries was found to result in the introduction of many weakly specimens or weeds. The roots of the plants rarely penetrate below the sand, a fresh layer of which is laid on every few years as it becomes worn off. In the dry season the whole bog is "flooded" from the reservoirs with just so much water as will quite submerge each plant. Other minor operations are entailed by Cranberry culture. Flooding is only partially efficacious in preventing insect-pests, large quantities of tobacco-water have now and then to be used. Other difficulties which beset the grower are the spring and autumn frosts, hail, and certain fungous diseases. The crops are so plentiful as soon to repay the original outlay, and the cost of keeping up the bog is but small; one not yet exhausted tract of land is known to have been under cultivation for thirty years. The yield of fruit per acre is often 50 barrels (100 quarts to each barrel), or as many as 200 barrels have occasionally been known. Each barrel is worth from 20*s*. to 40*s*. There are numerous places in Scotland and Wales where Cranberry culture could profitably be undertaken.

PLANT COLLECTING.—Few, if any, professions are so fatal as plant collecting in unhealthy districts. In the present number of *Reichenbachia* it is told that "three collectors visited Madagascar in search of a scarlet Cymbidium. Two died, and the third has been terribly ill since his return to Europe, but he won the treasure, which we shall behold in good time. Those parts of Madagascar which especially attract botanists must be death-traps indeed. M. LEON HUMBLOT tells how he dined at Tamatave with six compatriots, exploring the country

with various scientific aims. Within four years the six died (one of whom was his own brother), and he is the only survivor. Another of these unfortunates, travelling on behalf of Mr. Cutter, to find butterflies and birds, shot at a native idol. The priests soaked him with paraffin and burnt him, tied on a table, perhaps their altar. M. Leon Humblot himself has had dreadful experiences; seven years ago he found Phaius Humbloti and P. tuberculosus in the deadliest swamps of the interior; a few of the bulbs gathered lived through the passage home, and caused much excitement when offered for sale at Stevens' auction rooms. M. Humblot risked his life again two years ago, and secured a quantity, but at a dreadful cost. He spent twelve months in the hospital at Mayotte, and on arrival at Marseilles with his plants, the doctor gave him no hope of recovery."

The Effect on Plant-Life of Growth at High Elevations.—From a communication on this subject by M. Gaston Bonnier, detailed in the *Comptes Rendus* for September, we extract the following results of comparative researches in experimental physiology made by that gentleman. Experiments made on two exactly similar plants, subjected to the same external conditions, showed that the functions in a specimen cultivated in an alpine climate are so modified that the amount of feeding-power as represented by assimilation and chlorophyllic transpiration is increased; while in a plant grown in darkness, respiration and transpiration seemed slightly modified or even diminished. Therefore, we may conclude, that during the short season at high altitudes, plants elaborate more freely the nutritive principles which are necessary to them than do corresponding plants of the same species at lower elevations. These experiments serve to explain the presence of the larger relative quantity of sugar, starches, essential oils, colouring matter, alkaloids, &c., which are found in plants native to a low elevation, when these are grown in an alpine climate, as all these products are directly dependent upon chlorophyllic assimilation, that is to say, on the greater vigour and sound health and nutritive power shown by the plants when at a high elevation.

Magnolia Grafted on Michelia.—Mr. C. Nickels, of Jaunpore, has succeeded in grafting M. grandiflora on Michelia Champaca, in spite of the different character of the wood of the two species.

The Market Gardeners', Nurserymen's, and Farmers' Association.—This is a Society, formed in 1828, for the purpose of protecting the interests of the trade generally, and deserves a large share of support. It has recently been incorporated under the Companies' Acts, and by the Articles of Association, power is given to assist hospitals, or to build almshouses, or to do a certain amount of charitable work in other directions. The annual dinner was held at the "Holborn" on Tuesday last, when Mr. W. Poupart, the President, was in the Chair; he was largely supported by market growers, &c., and in speaking of the recently-acquired powers, made the suggestion that the Association should establish two annuities for the relief of destitute market growers, the proposal meeting with much approval from those present. Mr. Lobjoit, the Treasurer, spoke as to the position of the trade with regard to local rates, and reminded his hearers of the work open to the Association in that direction. The Secretary is Mr. Herbert B. Bell, of Clement's Inn, W.C., who succeeds Mr. R. Steele.

Eel Worms in Chrysanthemums.—These pests seem to be turning up in all directions. We do not suppose that they are relatively more numerous than previously, but increased attention is being devoted to plants and their maladies than before, and so the doings of these nematode worms come under observation more frequently than before. In the cases we have seen, the leaves shrivel and fall off, leaving the lower part of the stem bare, even when the plants have been in the hands of good cultivators. The explanation is, that the leaves are swarming with these minute pests. Cremation is the only remedy.

"The British Moss Flora."—The thirteenth part of Dr. Braithwaite's carefully-executed and beautifully-illustrated work has just been published (303, Clapham Road). The work is too well known to students of mosses to need encomium.

Amsterdam.—A great exhibition of Japanese and other Chrysanthemums will be held in Amsterdam, from November 13 to 17 (both days included). The prizes offered are liberal, and the competition is expected to be very keen.

"The Orchid Album."—Mr. William Hugh Gower is now one of the editors of this publication, and his knowledge of Orchids and their cultivation, will render his collaboration the more valuable.

Vine Manure.—The following fertiliser is recommended for the Vine by M. Georges Ville:—

	Per cent.	Per Hectare.
Superphosphate of lime	40	400 kilos.
Nitrate of potash	30	300 ,,
Sulphate of lime	30	300 ,,
	100	1000 kilos.

A kilogramme, it will be remembered, is rather over 2 lb., and a hectare nearly 2½ acres.

The New Aquatic House at the Royal Botanic Society.—This new structure bids fair to be a great success. Ever since its completion, the plants placed in it have rapidly increased in vigour, and have produced an unusual quantity of flowers. In the heated tank, which measures 23 by 40 feet, a large batch of the free-flowering form of Pontederia crassipes have had at times as many as eighty spikes of bloom all up at once. P. azurea still is in great beauty, and Sagittaria montevidensis, Nymphæa gigantea, N. stellata, N. dentata, N. devoniana, and others are in bloom. Standing over the water at the back large specimens of Coix lachryma (Job's Tears) have assumed unusual proportions—some 10 feet in height and 8 feet across. The Rice-plant, too (Oryza sativa), is nearly as tall, and forms an elegant object. The structure was plainly and substantially built on a plan laid down by Mr. Sowerby and Mr. Coomber, and it is not only well suited for the purpose for which it was intended, but will stand well against the most trying of all things to a house—the culture of hothouse, aquatic, and marsh plants.

Chrysanthemums at Regent's Park.—The conservatory at the Royal Botanic Gardens is very gay with well-grown specimens of the best Chrysanthemums. The plants are grown into bushes, and bear each twelve to fifteen fine flowers, which is far preferable for general purposes to having two or three abnormally large blooms. The method pursued is to strike three cuttings in a pot and grow them on together. Also in the conservatory here a tall plant of Eucalyptus citriodora exhibits the change of character noted in this plant. When small the plant has rough and scented leaves, but on becoming large the leaves are perfectly smooth, of a different shape, and scentless.

Banksia Rose.—A correspondent sends us the hip of a Banksia Rose which had been set with the pollen of another Rose not specified. The peculiarity is, that the hip is not perfectly formed, and the carpels in consequence are exposed. The chief interest lies in the circumstance that such a malformation shows clearly the relationship that exists between Roses, and Potentillas and Geums, where the carpels are similarly exposed and dry. In Brambles and Raspberries the same thing occurs, but the carpels in these instances are succulent. In the Strawberry also, a near neighbour, the hip is replaced by a fleshy, conical, or cockscomb-shaped receptacle, which is fleshy, and bears the carpels or "pips," which are almost exactly like those in the Rose before us. At the Rose Conference at Chiswick a year or two ago, one of the most instructive ever held by the Society, a similar Rose, in this case a Scotch Rose, was shown by a gentleman from Liverpool.

The Aquaria Flower-pot.—This is the name given by the maker, Mr. E. T. Boston, Weston-super-Mare, to a new kind of flower-pot, intended to do away with much of the labour attendant on watering plants grown in the common pot. It may be described as an ordinary pot, with a bottom aperture placed inside a pot sufficiently large to have a space of from half an inch to 2 inches between the two, but without any outlet at the bottom. This space is to be kept wholly or partly filled with water, which will penetrate the inner pot's side, and so keep the soil in a moist state. The water cannot escape by way of the outside of the outer pot because it is glazed. Without having tried it, we should suppose that it would answer in the summer time for plants with large roots and much soft foliage, and for raising Ferns from spores, seeds of Tuberous Begonias, Lisianthus Russellianus, Lobelia, and other fine seeds that need to be kept in a moist soil, but which are easily injured if they once become dry, and also by over-head watering. For the propagation of certain species of plants, it will be an admirable invention but for permanent use we should not commend it for obvious reasons.

"Verein Erfurter Handelsgaertner."—The Association of Commercial Florists and Nurserymen of the celebrated Prussian town, intend to issue from time to time a small publication containing short notices concerning garden seed crops and novelties which may be of interest to its readers. The notices will be of general interest, and written in popular form, and with remarks by practical men. In every case there will be no self-advertisement permitted, and no particular firm mentioned from which goods may be obtained. But the main object of the project is the affording of information concerning German horticulture. We find the names of some of the best houses in Erfurt are appended to the circular.

The Nomenclature Question solved by Electricity.—While some people are grumbling about what they call the pedantry and inconvenience of botanical nomenclature, and others are complaining about the length, the vulgarity, and inappropriateness of much of the so-called popular nomenclature, the Americans, according to a Belgian contemporary, have devised a telegraphic code. This, being understood by sender and receiver alike, obviates unnecessary expenditure, and conduces to commendable brevity. A customer, for instance, requiring some Connover's Colossal Asparagus, simply telegraphs to his seedsman the word "Addison." If he desire Ferry's Premium Drumhead or Ox-heart Cabbage, he "wires" "Carver," and the thing is done. Some curious complications which would form suitable plots for comic operas might, it is conceivable, arise; but no system is perfect.

Spanish Plants.—Professor Willkomm, of Prague, has lately issued the thirteenth part of his useful *Illustrationes Floræ Hispaniæ Insularumque Balearium*. The plants figured are mainly of botanic interest, but the acuteness of the author, and his fidelity in describing and figuring the plants, render his work very serviceable. The text is in Spanish and French, the descriptions in Latin.

A Little Knowledge.—Eugène Sue, we learn from the *Revue d'Horticulture Belge*, descanted upon a Cactus which flowered in the open air in winter; Georges Sand, on a blue Chrysanthemum. Jules Janin discovered a blue Pink, Victor Hugo a Bengal Rose without spines or perfume; Paul

Feval an evergreen Larch [the Cedar might be so called justly], Balzac a climbing Azalea, Alexander Dumas a black Tulip. This very week, on our side of the Channel, we are told of a Chrysanthemum which apes the Rose, in consequence of growing side by side with it; and a writer in *Notes and Queries* not only treats as identical the Victoria Regia and the common white Water Lily, further considers it to be the Lotus of ancient literature and symbolism.

Chrysanthemums.—These plants do wonderful things nowadays, but we were not aware till lately that they imitated the plants—Roses, for instance—next to which they happen to be growing; but we are assured by a lady's paper that this is the case.

Mr. Cutler's Jubilee.—That one man should hold office continuously for fifty years is, to say the least, unusual; that he should have held it with such conspicuous success as the secretary of the Gardeners' Royal Benevolent Institution has done, is more unusual still. Under his hands, and very largely indeed owing to his skill and zeal, the Institution has risen from zero to its present flourishing state. On the 15th January next, Mr. Cutler is to be proposed for election as secretary for the fiftieth time, and the occasion is so unique that it is felt—but every one knows what every one else's feelings must be. They had better confide their sentiment to Mr. Harry Veitch, 544, King's-road, Chelsea. One thing we may add, the expression of a hope that among the pensioners and their friends something may be done to mark their sense of what has been accomplished for them by Mr. Cutler.

Biographical Index of British and Irish Botanists. — This index, compiled by James Britten, F.L.S., and G. S. Boulger, F.L.S., which has been published in the numbers of the *Journal of Botany* for the last three years, and from which we have made numerous extracts relating to horticulturists. It originated in the supposition that the want of such a reference-list to byegone workers in botany might be shared by others than the editors' and the very numerous expressions of interest and approval they have received, have shown that they were fully justified in their belief. During its progress through the pages of the *Journal*, numerous additions to the information have been made, and some corrections. The list of names has also been considerably extended, and will be brought down to the end of 1890. A reprint of the list, embodying these additions and corrections, is, therefore, proposed The volume will be bound in cloth, and will be issued at 4*s.* (postage paid) per copy, to subscribers whose names are received before publication, the published price being 6*s.* 6*d.* The printing will be begun early in 1891, and the book will be issued in the course of that year. As only 500 copies will be printed, intending subscribers should send their names, with the amount of subscription, to Messrs. West, Newman & Co., 54, Hatton Garden, London, E.C.

Presentation.—It may interest some of our readers to hear that on the 24th ult., Mr. Harry Kitley was presented with a gold watch by a few friends, on the occasion of his leaving New York, U.S.A., for England. He was employed by Peter Henderson & Co., for a few years, and has been forced to return home on account of his health.

HOWEIA [= KENTIA] FORSTERIANA.

In a recent issue (July 19, 1890, p. 74), we gave an illustration from a photograph kindly sent us by Mr. Charles Moore, of Sydney, of two species of Howeia (better known under the name of Kentia), and showing the differences in mode of growth of the two species. We now supplement the account then given by a figure (fig. 106), showing H. Forsteriana growing in the open ground in the Sydney Botanic Garden. The spreading character of the leaves is well shown, those of the nearly-allied H. Belmoreana being ascending. The fruiting spikes hang down like ropes of beads in clusters from the axils of fallen leaves, the persistent base of which forms a kind of socket. The spikes vary from three to eight in a cluster, and each is about 3 feet long.

We are indebted to Mr. Charles Moore for this illustration also. The two species of Kentia—for in garden language this term will doubtless survive—are the most popular Palms of the day for decorative purposes, probably because they are better able to withstand deleterious surroundings than most other Palms. For the supply of the trade they are grown in prodigious quantities by some of the Ghent nurserymen, and not a few may be found among the market growers around London. The following extract from the *Revue de l'Horticulture Belge* will, therefore, be read with interest:—

M. Grandeau, of the Agricultural School of Nancy, analysed some of the peat which was about to be used for potting a Kentia. Two years subsequently, when the plant was repotted, he analysed the soil in which the plant had been growing, and to which, in the interval, no manure had been added, but only water.

The comparative analysis of the two samples of the same soil gave the following results:—

	Exhausted soil.	Fresh soil.
Water	5·20	5·40
Organic matter	23·90	16·20
Nitrogen	0·69	0·41
Lime	0·625	1·920
Phosphoric acid	0·080	0·544
Potash	0·077	0·121
Sand, &c.	70·028	75·405
	100·000	100·000

Each litre weighed about 800 grammes; the 12 litres contained in the pot weighed 9·600 kilos, and contained respectively the following quantities of nutritive matter:—

	Exhausted soil.	Fresh soil.
Lime	70·0	184·3
Phosphoric acid	7·7	52·2
Potash	7·49	11·6
Nitrogen	8·64	33·4

Thus, the mineral matters absorbed by the Kentia during growth in a period of two years had considerably exhausted the soil, and rendered repotting necessary for the purpose of supplying additional food, as well as for aërating the roots. M. Grandeau, pursuing his experiments, added to the exhausted soil a nutritive solution, consisting of nitrate of lime and nitrate of potash, phosphoric acid, and sulphate of magnesia, and repotted the plant in the old soil thus artificially enriched. In this manner he ascertained that the old soil might be used again without loss to the plant.

FREE-FLOWERING CHRYSANTHEMUMS.

Varieties of Chrysanthemums which are remarkable for freedom of flowering out-of-doors, are by some lovers of this plant preferred to those varieties which are regarded by most of us as the best in existence. The present being the time when notes should be taken of such as meet this requirement, I have jotted down a few names which may serve as a kind of guide for those who have not the opportunity themselves of learning which are the more suitable for their purpose. The growing of Chrysanthemums out-of-doors is particularly suitable for those who have little or no accommodation under glass, and who might begrudge the space devoted to plants which take up much space, and give but few blooms. When the plants are grown out-of-doors, with a view to producing effect by numbers rather than by the quality of the blooms themselves, the cultivator is better recompensed for his labours, and especially if he has the right varieties, that is, those that do not make fine large flowers in the ordinary way in pots. To make myself clear on this point, I mean those which are not remarkable for the size of their blooms, but rather for the number which they produce under fairly good treatment.

The treatment of the plants, to obtain satisfactory results, is but of an ordinary kind; there is none of the extreme caution needed in selecting the buds, which is so necessary under what is known as the "big bloom" plan. The points to bear in mind is a selection of suitable varieties, not to propagate them too early, and not thin their buds, but to allow all, or nearly all, to develop, and to assist the plants with proper kinds of manures when the blooms are developing, and the petals commence to unfold. Plants of 4 feet high, including the pot, and furnished with six or eight main branches, will develop bloom-spikes of 2 feet in length, thickly clothed with blooms, and all fully expanded at one time, are good subjects for cutting from. It is in this way that single varieties give such a charming effect either as plants or in a cut state; and nothing, in my opinion, can excel this section—so little cared for by many persons—for providing a display of cut bloom, which will harmonise well with other flowers and greenery; in fact, very much better than the double varieties for lightness and elegance.

Of white varieties in the Japanese section, Lady Selborne leads the way undoubtedly for the profuse manner of its flowering and purity of colour. Mdlle. Lacroix, Elaine, Mdlle. Louise Leroy, Avalanche, and Mrs. J. Wright, are equally good. It is not wise to burden yourself with a lot of varieties, but to grow only well-proved ones.

Yellow may be represented by Peter the Great, Phœbus, Buttercup, Gorgeous, Frédéric Marrouch, and Sunflower, which are really good selections from the yellow-flowered section of the Japanese. In bright colours, W. Holmes, Cullingfordi, Etoile du Midi, Flambeau, L'Ile des Plaisirs, Madame de Sevin, Mons. N. Davis, H. Jacotot, L'Africaine, and Red Gauntlet. Pink and lilac supply many varieties: some of the best are Margot, Miss Gorton, Dr. Macary, Annie Clibran, Hiver Fleurie, Madame G. Audiguier, Bouquet Fait, Madame Laing, and Fernand Féral. Bronze colours are not so much sought after in a general way as others. Some of the best sorts of that colour are W. Robinson, Val d'Andorre, L'Adorable, and Madame Bertier Rendatler.

The incurved sections do not supply nearly so many suitable kinds as the preceding. Mrs. G. Rundle is the best white; George Glenny, Mrs. Dixon, Aureum multiflor, and Jardinum des Plantes are the best yellows. Mrs. Bunn and Golden Beverley are capital in colour, but the foot-stalks are so weak that the blooms have far too much of a drooping tendency to admit of their flowers being properly seen; Mrs. Norman Davis is somewhat after this style, yet desirable on account of its colour.

Reflexed Chrysanthemums are not so suitable for this form for the same reason, with but few exceptions. Mrs. Horril, a primrose sport from the incurved of that colour; George Glenny is one of the best, having the characteristic of freedom produced largely, lovely sprays does this sort give when freely grown. Dr. Sharp and Progne are magentas, and both valuable on account of their rich colour and Violet perfume; Chevalier Domage is especially bright in colour, orange yellow; Emperor of China, silvery white; and Phidias, rosy blush, very free; not forgetting Elsie, a mixture of canary and yellow, about exhaust the list of this section.

In the Anemone-flowered section, Sabine, Sœur, Dorothée Souillé, Fleur de Marie, Souvenir de Madame Blandinières, and Duchess of Edinburgh, are all good. The best of the single-flowered kinds are Jane (syn. Snowflake), Patience, Pure Gold, White Perfection, Madame A. le Moult, Souvenir de Londres, Crushed

Strawberry, and Lady Brooke, a charming small-flowered yellow sort with Buttercup-like flowers.

All varieties of Pompons may be depended upon to give good results. Black Douglas, Mdlle. Elise Dordan, Snowdrop, Primrose League, Nelly Rainford, Sœur Melanie, Rosinante, Golden, and Madame Marthe. Another section of Chrysanthemums to which but little attention has been paid, is the frimbriated sorts, which are especially applicable to the form of treatment recommended here, the serrated edges of their florets give them a character uncommon amongst others. Chardoneret, bright purple; Marabout, white; Belle Navarraise, blush; and Crœsus, bright orange shaded with crimson. By cultivating all sections in the manner here described, a greater length of flowering season is obtained than by growing plants of one or two sections only. Continuity of flowers and variety of form are desirable points to study. *E. Molyneux.*

Nursery Notes.

MESSRS. J. VEITCH & SONS.

Amongst the few winter-flowering Carnations showing blooms at this nursery, note should be made of Winter Cheer, a variety with a compact, dwarfish habit, and numerous growths, and as a consequence an abundant bloomer. The colour of the neat double flowers is bright crimson. Carnation Marie Louise, white, flaked and edged with purple, is another desirable variety; as is also Mrs. Moore (Ware), an opaque white, full of substance in the petals, free to bloom, and abundant producer of flowering growths.

In the Orchid-houses, many small plants of various species and varieties of Cypripediums were found to be in bloom, of which may be enumerated œnanthum superbum, vexillarium, Niobe, Harrisonæ superbum, marmorophyllum, Leeanum, concolor, Mrs. Canham, Thetis, and Sedeni. A few Calanthe vestita were in bloom along with the above. A bloom or two was observed of the lovely hybrid Orchid raised by Messrs. Veitch from Cattleya Loddigesii and Sophronitis grandiflora; the flowers are nearly 3 inches in diameter, the petals and sepals rosy-purple; the two-lobed lip is tipped with the same, and the interior of the throat is of an orange colour. The Rock Orchid-house was gay with Cœlogyne barbata, the brown hairy lip contrasting strangely with the pure white of the rest of the flower; several Lælias, including anceps, and Perrini, the rich brown Cymbidium giganteum, an Oncidium or two, and Dendrobium superbiens.

The Cattleya-house had not much more to show than healthy, sturdy plants, giving excellent promise for the future in their many flower-sheaths. In bloom were Lælia grandis, in brown and purple; Cattleya exoniensis ×, C. Dowiana, and C. Harrisii.

Nepenthes.—These plants are at the present time wonderfully rich in pitchers, making it difficult to select any one for especial admiration. To our fancy, Nepenthes Burkei excellens, N. Curtisi superba (the latter with deep rich brown pitchers), N. Mastersi (very free and handsome), and N. Dicksoniana (fine for the season), were amongst the more notable species.

The Chrysanthemums here are grown dwarfer than hitherto was the case—good saleable plants, with from nine to fifteen flowers, and well furnished with foliage. Novelties are not many, but all of the best varieties in the different sections are represented. To secure dwarfness, the plants were cut down to within 9 inches of the soil in June.

India.

ROYAL BOTANIC GARDEN, CALCUTTA.

Dr. King's report gives an interesting account of the work done during the past year. The gardens have been maintained in a high state of efficiency, the display of Orchids being by far the finest yet seen; the herbarium, in particular, has been especially attended to, and organised exploration in Burma and Assam has added to it some valuable collections. Under the recent order of the Government of India this exploration will be extended. The control of Indian botanical operations has been centralised in the Calcutta Gardens, and the superintendent has been appointed Director of the Botanical Survey of India. The grants promised by the administrations of Burma and Assam will enable collections to be made on a larger scale, and more continuously. As this work will constitute a separate department, it has been ordered that in future years a separate report should be submitted on the subject.

During the year, Dr. King issued a monograph on Jack-fruits, Oaks, and Chestnuts, of the Indo-Malayan region. This forms the second volume of the garden annals. The third, and concluding part, of his monograph on the genus Ficus, with an appendix by Dr. Cunningham on the mode of fertilisation of one of the species, to which we have already called attention, has lately been issued. Dr. Prain has also published several important papers, which are described in the superintendent's report.

Cinchona in Bengal.

According to the annual report of the Government Cinchona Plantation and Cinchona Factory in Bengal for the year 1889—90, at the close of the year the plantation consisted of 4,682,401 trees of various ages, and of a nursery stock containing 264,000 seedlings. The crop collected amounted to 304,705 lb. against 373,100 lb. in 1888—89. It was composed of 140,310 lb. of red or Succirubra bark, 131,055 of Ledger's Calisaya, 5,310 of Calisaya verde and Morada, and 28,030 of hybrid bark.

The out-turn of the factory, which is regulated by the demand, was 1,833 lb. of sulphate of quinine, and 6,578 lb. of febrifuge. The entire quantity of the quinine, and a greater portion of the febrifuge, were manufactured by the new fusel oil process, which has now entirely taken the place of the old acid and alkali method of manufacture. The quinine is of excellent appearance, and in purity compares favourably with most of the brands of European manufacture. The issues from the factory rose from 7,489 lb. in 1888—89, to 7,680 lb. in 1889—90.

The nett profit on the working of the Cinchona estate amounted to 18,967-9-10 Rs. in 1889—90, against 27 844 Rs. in 1888—89, and is not unsatisfactory, when the depressed condition of the Cinchona industry is taken into consideration. It is understood that the exportation from Ceylon has at last begun to fall off, and in this case quinine will probably soon rise in price, and the demand for Cinchona febrifuge will also increase.

Botanic Gardens, Saharunpur.

These gardens were originally intended for research and scientific observation. They are now under the management of Mr. Gollan, and have become plant and seed nurseries on a large scale, and the plants grown are mostly fruit trees and edible plants. The annual report contains much information respecting the introduction of Peach trees, and other fruits from Florida.



Fig. 107.—Method of using the tobacco sheet in houses.

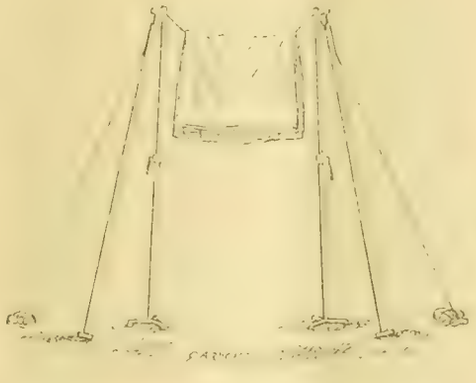


Fig. 108.—Movable screen for fumigating purposes.



Fig. 109.—Screen in use on a fruit tree.

Useful Invention.

SELF-ACTING TOBACCO SHEETS.

Messrs. McDougall have brought under our notice a new form of tobacco-sheet, which they claim (and, we believe, justly) to be more scientifically prepared than the ordinary tobacco-paper. By acting chemically on woody fibre, the mineral and resinous matters are removed, and a more or less pure form of cellulose results. The combustion of the resinous matter in ordinary tobacco-paper is well-known to be injurious. This cellulose, in the form of sheets, is saturated with tobacco-juice containing nicotine of determined strength and proportion, so that something like certainty of composition and consequent regularity in the result is ensured. The sheets are hung up, or supported, and lit at one corner, a dense smoke, without flame, being given off. Also, the injury to foliage, resulting from the use of hot coals or coke, is entirely dispensed with. The sheets can be used for single plants in the open, either on a small scale, or on the largest scale in or out of doors.

The illustrations we give, show various methods of employing the tobacco-sheets, from which it will be seen that, with appropriate appliances, the method is as well adapted for use out-of-doors, and for trees of moderate height, as for greenhouses or frames. Its applicability to fruit trees on a large scale in place of spraying with Paris Green or London Purple, which are dangerous to handle, or with kerosene emulsion, is a matter that resolves itself into one of cost. We have no doubt of the value of the new introduction for greenhouses and gardens, and think it would be very serviceable in orchards if the price will permit of its use. It may be had of McDougall Brothers, 10, Mark Lane, E.C.

Home Correspondence.

TREE AND SHRUB PLANTING IN TOWNS.—With reference to the remarks by Dr. Masters on this subject at the Royal Horticultural Society's meeting, I did not quite accept his estimate of the Lime. It is true there are Limes and Limes: the common one is objectionable enough in many ways, as it becomes infested with insects, and red-spider causes it to drop its leaves very early in hot seasons. I have seen whole streets planted with common Lime where scarcely a tree had any foliage left on, and that before the end of August. The small-leaved Lime (T. cordata), under the same conditions, in the same town (viz., Metz), had green leaves in abundance, and was evidently better suited for town conditions than the common Limes—T. platyphylla and T. vulgaris. The Silver Lime (T. argentea) makes an excellent street tree, and retains its leaves long after those of the last-mentioned two species have fallen. The remarks on T. argentea equally apply to T. petiolaris (figured in a recent volume of the *Botanical Magazine*), perhaps much better known under the name of T. americana pendula. The two white-leaved species of Lime, and the common ones I have seen growing under the same conditions at Limoges and elsewhere, and have recorded the value of them in the *Gardeners' Chronicle*. T. euchlora—with its smooth glossy leaves, of a bright dark green—also makes an excellent street tree. *G. Nicholson, Kew.*

—— Having lived some years in Manchester, I had the means of studying which trees and shrubs did best, and, as is well known, the fogs in Manchester are most destructive to plant life, and the fumes from the many chemical and other works are, I think, more injurious than London fogs. Rhododendrons, which Dr. Masters does not advise to be planted, are the best plants in that district, they making a good growth yearly. The ground in many cases is a disused brick field, and they like the clayey damp soil to a certain extent. Before being planted, much of the ground had some of the clay burnt and remixed with the soil, and the ground drained. It must also be remembered in planting trees in towns that no kinds with a soft or woolly foliage can resist or throw off accumulations of soot and dirt in the same way as the smoother-leaved kinds, and many of the trees recommended by Dr. Masters have smooth thick leaves. Many failures take place through neglect at planting time, such as placing the roots in badly prepared soil, want of attention after planting, absence of moisture during dry weather, &c. *G. Wythes, Syon House Gardens, Brentford.*

—— I would particularly emphasise the advice given by Dr. Masters not to plant the Lime as an avenue tree; and also to avoid that frequent and foolish mistake of overcrowding the trees and shrubs where grouped together. Poor soil should be renovated with fresh loam and manure, labour spent in the rough preparation amply repaying itself. Trees and shrubs for towns should, in my opinion, be selected from well-exposed nursery grounds of high altitudes in preference to those from sheltered and low-lying districts, in order to secure plants of hardy constitutions. In suburban gardens the builders, in the first place, commit a serious error in selling off the land the turf and best of the soil, thus not giving the future garden a fair chance. In addition to Pinus excelsa, mentioned by Dr. Masters, I have proved that both Pinus austriaca and P. cembra, with its dwarf form, are quite reliable, so also, except in the worst of positions, is the Deodar; but the Cedar of Lebanon does not thrive so well. Rhododendrons, I find, do not thrive well, the best being R. ponticum and R. Everestianum. Of the former, I would prefer seedlings to any others, so as to gain extra vigour. Hedera dentata is worthy of more notice. Rhododendrons should always be carefully planted in and about towns in such a way that they can be well supplied with water. When on mounds, this cannot be done, *J. Hudson, Gunnersbury Park, Acton.*

FUMIGATING INSECTICIDES. — A new introduction, intended to supply the place of tobacco-paper, has recently been under my notice. Those who have had to employ tobacco-paper know something of the inconvenience of having to pull the moist paper to pieces, staining the fingers, as well as being unpleasant to the smell and the sight. It is something in favour of the newer introduction that it dispenses with the process of pulling the fumigating material to pieces, as in the case of the tobacco-paper. It is called Nicotiana Paste, a black, light, dry substance, in the shape of square cakes, and something like six of these go to form a pound-packet. An ordinary flower-pot makes a good fumigator, and all that one has to do, is to put a few red-hot cinders in the bottom of it, and then break the paste into pieces about the size of a Walnut, place them on the red-hot coals, where they speedily ignite without bursting into a flame; a dense volume of smoke is given forth, which soon fills the house. I experimented with it on a house of Auriculas, badly infested with greenfly, through some neglect caused by absence from home; the house, 24 feet by 8 feet, a lean-to, but rather low-pitched, the bulk of the plants being on a back stage, somewhat near the glass. I employed four cakes, but used two flower-pots, so as to fill the house with smoke as soon as possible; fumigation was done at dusk. The house was kept close all night, and on examining the plants in the morning, Nicotiana had done its work, though the plants being in full growth and robust health, the thick, leathery leaves overlapped each other, and rendered it somewhat difficult for the smoke to get among them. When I try the paste again, if the plants are much infested, I shall make use of an entire packet. The process is so cleanly, that a lady might break up the squares of paste and lay them on the red-hot cinders without soiling her fingers, and there is no disagreeable aroma arising from it. I think the paste as effectual as the best tobacco-paper I have tried; but I am not sure that it is as economical in point of cost. *R. D.*

CHRYSANTHEMUMS FOR HOME DECORATION. —At Messrs. Veitch & Sons' Royal Exotic Nursery, Chelsea, are now to be seen some admirable examples of Chrysanthemums. When I saw them recently they were commencing to open their flowers, giving promise of a nice display. The most striking feature was the compact, dwarf style of growth that had been encouraged. There was not the slightest semblance to the tall gaunt-like growths of the plants from which most of the exhibition blooms are obtained. These plants were models of what Chrysanthemums should be for home decoration, without any unusual time being spent upon their training. In height, they varied from about 5 feet, or a little more, downwards to dwarf bushy plants, of not much more, if any, than 2 feet. These latter were the best examples of an all-round good collection, in which good cultivation and superior style of growth were abundantly maintained throughout, the individual plants being well clothed with healthy foliage almost to the pot itself. *J. H. G.*

THE WEATHER DURING OCTOBER AT RIPLEY CASTLE, YORKSHIRE.—The weather during October was very fine and mild up to the 28th, when we had the first severe frost of the autumn, putting an end to outdoor supply of flowers, with the exception of those on a border on the west side of the castle. This border is very much exposed, and is in close proximity to a large lake, yet the Pelargoniums, &c., on this border came through the frost unscathed, while all those in other parts of the grounds were cut to the soil. I should have supposed the occupants of this border to be the first to suffer, especially as the frost was accompanied by a breeze from the north-west. Rain fell on fifteen days, the total for the month being 0·55 inches; highest shade temperature 68° on the 12th; lowest, 23° on the 28th; mean maximum, 56°·8; minimum, 40°·7; temperature of month, 48·7; height of barometer, 30·14. *J. Tunnington.*

THE FROST ON OCTOBER 28.—In your last issue, under the heading "Frost in the Midlands," frost is spoken of 17° intensity. Now, we are 5 miles west of Birmingham, and about 400 or 500 feet above the sea level, and we had three thermometers tested Kew, at about 3 feet from the ground. Two standing tested ones of recent date. Our lowest register in the most exposed place was 27° Fahr., or 5° of frost, and the highest position, a little sheltered from the north by an Oak tree, 30° Fahr., or 2° only of frost. It is very remarkable that there should be such a discrepancy between our registers and your correspondents. We have many annuals untouched by frost, including annual Chrysanthemums, besides monthly Roses. *S. Pope, Birmingham.*

TOXICOPHLŒA SPECTABILIS.—This plant is not grown as much as it deserves, and perhaps on account of its not blooming freely when young. There is a plant at Vale Park, Arundel, which has been under my care for the last fourteen years, and every year for the last ten it has never missed to bloom in the spring, and at the present time it is flowering for the second time this year. The flowers were sold in the spring, making 15*s*, and considering it does not take up much room, it is a plant certainly worth growing for cut flowers for market. The plant is growing in a 12-inch pot in loam, peat, and sand, and the pot is plunged in a bed of coal-ashes, into which the roots have travelled, it not having been potted for several years. *E. Sandford.*

RELATIVE SIZE AND NUMBER OF LEAVES.—Generally speaking, the larger the leaf the fewer will the number be—at least with hard-wooded trees. This is the reverse with Conifers, the longer the leaves the greater the number. Take the Scotch and Weymouth Pines as examples. *J. L.*

COPPER BEECH. — When was the copper-coloured Beech first introduced into cultivation? I ask the question, having lately seen a fine symmetrical tree in a garden at Bow, planted, no doubt, when that now densely-crowded place was a rural suburb. The trunk at 4 feet from the ground has a girth of 7 feet 2 inches, and is unbranched for a height of 12 feet 10 inches, when it breaks up into a symmetrical roundish head. Possibly it may have been an occupant of the Mile End nursery, or, as supposed, of the pleasure-ground of Lord Campbell. *X.*

IMPATIENS ROYLEI. — The whole area of a neglected garden in the east of London, perhaps a quarter of an acre in extent, was covered with this handsome plant to the exclusion of any other plant. Is this plant to be considered a weed? *X.*

DRY SOIL.—Notwithstanding that much rain fell in Kent on November 2, it will take much more than that to thoroughly soak the hard soil under fruit trees and bushes. I examined our borders the other day, and found them to be far too dry to be good for the trees. It is well, therefore, to afford it plenty of water, so as to saturate it to the depth the roots are likely to reach. While I am no advocate for excessively wet borders at this season of the year, the soil should be in a moist condition. In this part of Kent there has been a great deficiency of rain for many weeks, and the soil has got very dry for several feet deep. This dryness of the roots undoubtedly assist the early ripening of the shoots; but in a measure it is at the expense of the buds, and if the latter become weakened, there is likelyhood of much loss in adverse weather in the spring. It is, however, very gratifying to see how well the trees of all descriptions are at present looking, and what a capital prospect there is of a fine crop of fruit another year should the weather be at all favourable. It is early to speak of the future crops of fruit; but I do not know that ever I saw the buds so full and plump, and the wood looking so well as at the present time. *H. Markham, Mereworth.* [If buds are forward and very prominent everything should be done to retard their opening, even to the employing of shades of fir branches, &c. Ed.]

TREES FOR EXPOSED SITUATIONS.—Intending planters of forest trees may not all be aware of the fact that Limes do not flourish at all well where the soil is wet and heavy, and the situation much exposed to south-westerly winds. Lime trees in such positions do not make free growth, and are liable to become infested with lichen. Horse Chestnut and Sycamore, however, grow much better in such a position, the winds not appearing to affect their growth nearly so much, nor does moss grow to so great an extent on these trees as it does on Limes. *S.*

CEDARS OF LEBANON.—On p. 505, it is claimed for the famous Cedar at Enfield, "that it is the progenitor of all the Cedars of Lebanon in England." This statement is so at variance with the numerous legends of Cedars being brought home by returning crusaders, that I should like to ask in your columns if all these legends are fond fancies? [Probably there is no cedar remaining now that was alive at the time of the Crusaders. Ed.] With us at Warwick it was always such an article of faith that the grim old Cedars at the Castle there were brought home by a crusading Earl of Warwick, the descendant of the dreaded Sir Guy, that I never thought to question the grounds for the local enthusiasm. There are some of the finest young Cedars in the country at Nowton Court, near Bury St. Edmunds. Mr. Porteous Oakes, the proprietor, who is a cunning

arborist, always cuts off the bottom branches—a practice which conduces to the growth and health of the trees, although rather contrary to one's æsthetic tastes. He also treats Wellingtonias, Taxodium sempervirens, and Thuia Lobbii in the same way, and finds that by this means they bear cutting winds much better when they rise above the shelter of other trees. It is only natural to think that trees which grow to such an enormous height are not meant to be cumbered with branches from the ground upwards. *C. A. M. Carmichael.*

CATTLEYA BOWRINGIANA.—Mr. J. Woolford, East Thorpe, Reading, writes in your last issue of a plant of this species carrying seventeen flowers on a single spike, and would be interested in knowing if this is the largest number yet observed. At Messrs. Sander's nursery, St. Alban's, amongst a large number of plants in bloom, the greatest number on a single spike has been eighteen, but the collector who sent home Messrs. Sander's plants wrote that he had counted as many as twenty-six on a single inflorescence. From my own experience, I do not think we have yet seen the best of this grand autumn-flowering Cattleya. *J. G.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

October 28.—Present: Mr. McLachlan, in the chair, Mr. Morris, Mr. Blandford, Dr. Oliver, Dr. Scott, Dr. Müller, Dr. Masters, and Rev. G. Henslow, Hon. Sec.

The Fog Report.—Dr. F. Oliver reported to the Committee that through the kindness of one of its members, an experimental conservatory had been placed at its disposal, and was now in process of equipment for the purposes of the inquiry into the effects of London fog upon vegetation. The pump for fog washing, mentioned at the last meeting, would be put in order, and arrangements made for its use directly leave had been obtained from the Council of the Meteorological Society. Dr. Oliver further stated that he was fitting up his own conservatory attached to the botanical laboratories, University College, with apparatus of appropriate character, so that he could follow out both the macro- and micro-scopic effects of fog, and also of some of the noxious constituents known to exist in fogs. The amended circular is now ready for distribution, and will be distributed forthwith.

Garrya elliptica in Fruit.—Mr. Morris exhibited sprays of the fruit of this North Californian shrub. The berries have a tomentose, ash-coloured, dry skin, and are compactly arranged in a dense spike. They were received from Mr. H. D. Pochin, of Bodnant Hall, Denbighshire, who described it as fruiting well, and that numerous plants have been raised from the seeds. The male plant was introduced in 1828, and first flowered in the gardens of the Horticultural Society in 1834 (*Bot. Reg.*, tab. 1686). The fruits were figured in our columns in 1884, October 4, p. 425.

Supposed Bigener between Dahlia and Helianthus.—Dr. Scott exhibited flowers received from Mr. E. J. Lowe, of Shirenewton Hall, Chepstow, of white Dahlias, the supposed offspring of a cross between the ordinary single white Dahlia and Helianthus decapetalus. The "cross" agrees with Dahlia in general appearance, and in the involucre, shape of receptacle, paleæ, external characters of the florets, and form of stigmas, but differs as follows:—The corolla-tubes of the disk florets, especially the outer ones, are more ventricose. The stamens are shorter; the pollen has blunt and obliquely-truncated prickles, and not conical as in the Dahlia. The style is shorter, the stigmatic arms being less divergent, with shorter papillæ. The above differences do not appear to amount to more than may be perhaps seen on various seedlings of Dahlia. The fruits, however, show more pronounced peculiarities, besides being only one-fourth in quantity. The achenes are smaller, less compressed, much less obovate in form, and have prominent ribs, which are not evident in Dahlia. The achenes are also about half as long. It may be added that neither in the pollen or stigmatic character does the "cross" agree with Helianthus. Mr. Lowe observes that in a cross it is often difficult to detect the effects of the male parent, and mentions Fuchsia fulgens crossed by "Semiramide" and the reciprocal cross, the seedlings in both cases resembling the female. Other observers have experienced the same fact, or, as Mr. Lowe expresses it, the female parent "received life from the pollen without showing traces of it, the active property of the male seeming to be enough to produce seeds, but not to show the characters of the male."

Apple Diseased (?).—A remarkable Apple, with a superficially translucent appearance, was received from Mr. Marshall of Bexley. Being possibly due to a fungus, it was forwarded to Professor Ward for examination and report.

Carex Species (?).—A plant was received from Mr. Robson, of Altrincham, for name; not being in flower, it was referred to Chiswick for cultivation.

Grapes attacked by Larvæ.—Some Grapes were received from Mr. Galpin, of Putney Heath, with the supposed larvæ of Tortrix angustiorana. Some doubts being expressed by Mr. McLachlan as to their identity, they were referred to Mr. Blandford to rear, and to report upon them later.

NATIONAL CHRYSANTHEMUM.

October 29.—A meeting of the Floral Committee took place at the Royal Aquarium on the above date, Mr. E. Sanderson in the chair, and a full attendance of members.

Mr. J. L. Turk, The Gardens, Cholmley Lodge, Highgate, had Mr. A. Boney, a pale yellow sport from Japanese Boule d'Or, which the committee did not think was sufficiently distinct; and a yellow Pompon named William Westlake, like a yellow Sœur Melaine; the committee wished to see it again. Mr. R. Falconer-Jameson, Hessle, Hull, sent a few blooms of new Japanese varieties, among them Mdlle. Darquier, a broad-petalled variety, creamy-white, tinted with rose, which the committee also desired to see again in better condition. Mr. Moore, Blendon Hall Gardens, Bexley, had Japanese Centenary, a yellow sport from the white Lady Lawrence, a promising break, but not in sufficiently good character to deal with; the committee wished to see this variety again.

From Messrs. J. Laing & Sons, Stanstead Park Nursery, Forest Hill, came a fine lot of plants in pots, and First-class Certificates of Merit were awarded to Japanese Mdlle. Marie Hoste, a large broad-petalled white variety of great promise; and to Viviana Morel, a large and very handsome reflexed Japanese, with a white centre, the petals deeply tinged with rosy-pink; the younger flowers are self-coloured, and all over of a much deeper tint. Japanese Alberic Lunden and Vice-President Audiguier are flowers of great promise. Two incurved varieties, John Lambert (yellow), and Ada Spaulding (blush-pink), were not in good condition on this occasion, though having a high reputation.

Messrs. James Carter & Co., High Holborn, had Japanese Henry Carter, Yellow Cockade, and Holborn Beauty; reflexed Miriam Carter; and Anemone-flowered Holborn Blush.

From Mr. Robert Owen, nurseryman, Maidenhead, came a large collection of cut blooms, and First-class Certificates were awarded to the following:—Japanese William Lane, a large reflexed variety, salmon-red, with a yellow centre—a solid flower of great fulness; Japanese Alberic Lunden, bright deep crimson, with somewhat twisted petals—large and full; Japanese Mrs. Irving Clarke, a distinct and fine blush-coloured variety, and promising to make a fine exhibition flower; Japanese Anemone-flowered Duchess of Westminster, a fine and very pleasing addition to this section, the centre orange and red, a pleasing combination, the guard petals white; and incurved Madame Gayral, white, with slight tip of bright red, very like the old Aimée Ferrière, but an improvement, and said to be a seedling from it. Mr. Owen also had incurved Madame Frederic Minstral, a great deal in the way of the Rev. Joshua Dix; and reflexed Monsieur Helliot, deep gold, was commended as likely to make a fine decorative variety.

Mr. W. E. Boyce, Archway Road, Highgate, had a pretty Pompon Anemone, named Frederick Boyce, deep rose centre, with paler guard-petals—Commended; and Pompon William Sabey, yellow, somewhat large for a Pompon, good in shape, like a bright golden Mdlle. Marthe; and Pompon Anemone Miss Mary, in the way of Marie Stuart, but with longer guard-petals.

A First-class Certificate was awarded to Mr. C. Gibson, Morden Park Gardens, Mitcham, for Japanese Gloire de Rocher, a very fine large and full variety of pale orange-red colour—a capital exhibition flower.

Messrs. H. Cannell & Sons, Swanley, Kent, a large collection of bunches of new varieties, and First-class Certificates were awarded to reflexed William Neville, deep buff-yellow, reddish centre—certificated as a fimbriated variety; and to single Miss Mabel Wilde, a fine and striking variety, with a double row of guard-petals of a deep rosy-cerise or magenta shade; Japanese Eugène Giat is a very promising shaded vermilion-crimson variety.

Mr. H. J. Jones, nurseryman, Lewisham, had Japanese, Cæsar Costa, rich maroon-crimson, remarkable for its bright colour; and Cleopatra, a small pure white variety.

It is pleasing to see that a number of members of the Society make a point of attending the gatherings of the Floral Committee.

HAVANT CHRYSANTHEMUM.

October 31 and November 1.—For the last few years, this Society has held its show, which is mainly devoted to Chrysanthemums, at an early date, and, judging from this and past experience, it is none too early. A good show was obtained on this occasion. The principal cut-bloom class was that for twenty-four, half incurved and half Japanese varieties, and for which a Silver Cup, as well as a money prize, was offered. Mr. Payne, gr. to Mrs. Ernald Smith, The Oaks, Emsworth, was the winner, with capital blooms in both sections. Mr. Woodfine, gr. to E. P. Boyd, Esq., Emsworth House, Havant, was a good 2nd. Mr. Steptoe, gr. to R. Gale, Esq., Horndean, took leading honours for eighteen cut blooms, half of Japanese and half incurved. Mr. Payne followed up his previous success by securing 1st honours for twelve incurved and twelve Japanese, and both with good blooms. Mr. Woodfine and Mr. J. Agate, nurserymen, Havant, in each class took the 2nd awards. Japanese Anemones were well staged by Mr. Payne, the large show varieties by Mr. Steptoe, and reflexed by Mr. Woodfine. A splendid box of single varieties was put up by Mr. Agate, the varieties being well balanced as regarded colour, and good in form, many new kinds being amongst them. Pompons were well shown by the same exhibitor. The best bouquet, consisting of Chrysanthemums and Fern fronds only, was shown by Mrs. Conway. Mr. Agate showed groups of Chrysanthemums well, table plants, and Primulas, securing the leading prizes.

SCOTTISH HORTICULTURAL.

This Association held its ordinary monthly meeting in 5, St. Andrew Square, Edinburgh, on the 4th inst., Mr. James Greive, Pilrig Nurseries, in the chair. Mr. Smith, Oxenford Castle, read a paper on the "Culture of the Pear." The paper was of a thoroughly practical stamp, and dealt with the subjects of draining and concreting borders for Pears, and advocated the adoption of concreted stations, as well as thorough drainage in soils of a retentive nature. Close fan training was advocated in preference to any other method. The merits of the several stocks in use were discussed.

Samples of the leading varieties of Pears grown at Oxenford were exhibited; and in their clean, well-developed condition, and more than average size, bore testimony to the soundness of Mr. Smith's practice. In the discussion which followed, considerable amplification of the subject was made by the various speakers. A brief lecture was afterwards given "On the Chemistry of the Soil," by Mr. Ivison MacAdam, Professor of Chemistry. The lecturer alluded more particularly to the subject of making up artificial borders by the removal of the whole or a part of the original soil, and replacing it with fresh soil, which might or might not be better than the old. If the latter were defective, the aid of chemistry should, he maintained, be called in to ascertain its defects, when they could be supplied with accuracy and at a cheaper rate than by wholesale removal of the original and the substitution of other soil.

A stand of magnificent blooms of Chrysanthemums was exhibited by Mr. Rushton, of Clerwood, Corstorphine. Messrs. Methven and Sons exhibited a selection of hybrid Pernettyas in pots, splendidly berried. An extraordinary fruit of Passiflora quadrangularis [probably P. macrocarpa. Ed.] was tabled from the Gardens, Castlemilk, Dumfriesshire; the fruit weighed 5 lb., but it was stated by the exhibitor that the same plant had yielded fruits 8 lb. in weight.

Mr. Todd, florist, Edinburgh, tabled a bouquet of flowers of the new Carnation, introduced by Messrs. Benary last spring. In speaking of the characteristics of this novelty, Mr. Todd said that he obtained and sowed a packet of seeds of the Marguerite strain in March last, and without any special treatment, had the plants in due course planted out. They began blooming three weeks ago, and give promise of continuing to do so during the greater part of the winter with the protection of a cool dry frame or house. The colours were crimson, scarlet, pink, and some almost pure white; and the blooms of medium size are admirably adapted for bouquets and other styles of cut flower decoration. From Mr. Webster, Gordon Castle Gardens, Fochabers, came samples of a seedling Plum raised by the late Mr. Webster—father of the sender. It is a red or purple Plum, of the Orleans type, rather under medium size, round; the flesh is deep yellow, crisp, rather juicy, well flavoured and sweet. It is an an excellent culinary Plum, coming to use so late in the season, is not an indifferent addition to the dessert. The adjudicating committee of the Association considered it an acquisition on account of its extreme lateness, coupled with its other good qualities.

DEVIZES.

NOVEMBER 4.—This Exhibition took place, as usual, in the Corn Exchange, and formed one of the main attractions in connection with the Annual Bazaar in Aid of the Devizes Benevolent Society. Groups of Chrysanthemums, mainly of Japanese varieties, were a leading feature, and Mr. C. N. May, Elen Lodge, Devizes, was the winner, with a superb group of fine-formed varieties, some blooms of Etoile de Lyon being 14 inches in diameter; Mr. Clack, gr. to Mr. C. E. Colston, Roundway Park, was 2nd.

The only other class for plants, was for a specimen each of the varieties of the Mrs. Rundle types; and Messrs. Clark and May came very close together, with plants perhaps never before beaten, splendidly grown, and carrying fifty or so finely-developed blooms each.

The handsome prize of 10 guineas, for twenty-four blooms of incurved Chrysanthemums, was won by Mr. C. J. Salter, gr. to F. B. Haywood, Esq., Woodhatch, Reigate, with a fresh and well-finished lot of flowers, the new incurved varieties John Doughty, Miss M. A. Haggas, and Violet Tomlin being in good character; Mr. Inglefield, gr. to Sir John Kelk, Marlborough, was 2nd. Mr. Salter also had the best twelve incurved.

Eleven stands of twelve Japanese varieties were staged, and Messrs. Elcombe & Son, Romsey, were 1st, and Mr. Salter 2nd.

Mr. Allen, of Swallowfield Park, had the best twelve blooms of reflexed, and Mr. Neville, gr. to F. W. Flight, Esq., Twyford, the best twelve blooms of Anemone-flowered—a remarkably good stand, the Japanese varieties being particularly fine.

One of the most attractive features was seen in the class for baskets of hardy autumn foliage. Of these there were twenty-one, and they illustrated in a remarkable degree the richness of the tints found in the woods and hedgerows of Wiltshire. Berries were also employed with excellent effect.

BRIXTON, STREATHAM, AND CLAPHAM.

NOV. 4 AND 5.—This old established Society, after holding its shows for many years in Brixton, has this year migrated to Streatham Town Hall, which affords greater facilities for the display. For six plants, large flowered, incurved or reflexed Chrysanthemums, Mr. Clarke, gr. to J. H. Lile, Esq., Brixton Hill, was first with finely-flowered examples. Mr. Clarke was also first for Pompons and Japanese. Mr. Howe, gr. to S. Tate, Esq., Streatham, was 1st for twenty-four incurved and also for twelve of the same, being strong in the large-flowered varieties; with twenty-four Japanese, Mr. T. Mursell, gr. to Mrs. Burton, Tower House, won with a fine lot of blooms, to which was also awarded the Bronze Medal of the N. C. S. A special prize for twenty-four of any class was well won by Mr. Howe, who staged some fine incurved varieties. In the class for new exhibitors only, Mr. Stevens, gr. to B. F. Smith, Esq., Hetherset, won with fine blooms. The class set apart for blooms cut with not less than one foot of stem was well filled—Mr. Howe being a good 1st with his flowers staged in Hyacinth glasses. At this show Orchids constitute a prominent feature, three classes being provided. Mr. Ranson, gr. to J. T. Gabriel, Esq., Palace Road, was first for six. With four ferns, Mr. Wright, gr. to J. A. Whittard, Esq., Streatham Hill, won in a well-contested class, Platycerium grande, 5 feet across, being shown. Some very well-finished Grapes were staged, Mr. Howe being 1st with superior Alicantes. Pears and Apples were present in fairly good numbers, the best coming from Mr. Bonnivell, gr. to Mrs. G. Coles, Elmfield, and Mr. Guyett. The prizes for vegetables were well contested, particularly in the class for eight kinds. Miscellaneous exhibits of well and tastefully-made wreaths, crosses and bouquets were sent by Messrs. Silver & Co., Florists, &c., Streatham, and some capital examples of Apples from Messrs. John Peed & Sons.

FINCHLEY CHRYSANTHEMUM.

THE fifth annual exhibition of the above Society was held at the Woodside Hall, on November 4 and 5, and was the means of bringing together an excellent collection of blooms. The chief honours of the day rested with Mr. Grey, gr. to W. B. Brand, Esq., who was 1st for the Challenge Cup out of four competitors, with a beautiful lot of blooms; he also won the Centenary Medal for the largest bloom of Japanese Chrysanthemums, with a wonderful Etoile de Lyon.

The groups were good, and Mr. Page, gr. to H. Ward, Esq., Finchley, was 1st; Mr. Hayler, gr., Tenterden Hall Hendon, was a close 2nd, who also scored well in Mr. W. Whiteley's class for twelve bunches of Chrysanthemums made up with Fern and foliage, taking the 1st prize.

The display of fruit was unusually good.

ORNITHOLOGY IN RELATION TO AGRICULTURE AND HORTICULTURE.

HAWKS AND FALCONS.—The windhover is a most appropriate name for the familiar kestrel hawk (*Falco tinnunculus*, L.), for it exactly describes that immobile hovering in mid-air which is so characteristic of the bird. If we consider the indiscriminate warfare that is waged against the Falconidæ by the game-keeping fraternity, the only wonder is that any kestrels remain to soar far above the fields, espying whole armies of destructive field-mice and voles from aloft with infallible penetration, and killing all such noxious vermin with unerring swoop. It is true that a few young game birds occasionally fall victims to this hawk, but fully nine-tenths of its food consists of those rodents which cause such havoc to the young plantation, gardens, and farm crops; and, therefore, the lives of kestrels should be more generally spared. The keepers are wrong in their wholesale condemnation of all hawks, for those are certainly some species which perform good offices for the agricultural community, while they cause but little harm in the preserves. The wonderful construction revealed in the eye of a bird must be of infinite assistance from afar. It can accommodate the sight in ratio to distance even while in the act of swooping down, altering the focus, probably, through the curious adjustment which shades the optic nerve, and by the expansion or contraction of the pupil which is peculiar to bird life. Whatever are the precise means of adapted vision, it is evident that the hawks possess a very extraordinary keenness of sight. If a mouse but moves in the stubble, it is sufficient to attract the notice of a passing kestrel, as with fatal dart the prey is secured. And the same mice—whether the field vole, or the long-tailed field mouse—that are thus habitually destroyed, are at all times the authors of great predations in cultivated ground, They ebb and flow—so to speak—in different years; in one season infesting the fields and woodlands, and then disappearing as suddenly as they came. These mischievous mammals strip off the bark of shrubs and trees, root up newly-planted seeds, gnaw roots, devastate wheat fields, and destroy young plantations during their periodical invasions. In one period of three months one hundred thousand field voles were killed in the New Forest, and whole districts have been devastated by their sudden invasions. It is the chief occupation of the kestrel hawk to kill such vermin; and it must be reckoned amongst the farmer's friends.

The graceful little Hobby (*Falco subbuteo*, L.) with sharply pointed wings and easy flight, is another—and far less common—hawk, which has been needlessly destroyed. Twice only has the writer chanced to see this bird in the west of England. Once a male hawk settled on some kidney-bean sticks in a garden, and on the second occasion a mature bird was in pursuit of large cockchaffers flying at eventide. This coleopterous insect (*Melolontha vulgaris*) is also known as the May-bug, and as a grub is pernicious to grass-roots, young trees, and vegetation generally. The author of *Insect Pests and Methods of Prevention* states that the cockchaffer—in the beetle form—feeds on the leaves of Oak, Elm, and other trees, sometimes stripping the entire foliage. In our ignorance we have well-nigh exterminated the very species of hawk—the hobby—which feeds extensively on this injurious insect. For the matter of that, the kestrel has been seen likewise to chase the cockchaffers, or *humbuz* as it is termed in the common parlance of the west.

The Sparrow hawk (*Accipiter nisus*, L.) is essentially predaceous in habit; it is the sworn enemy of game preservers, and we cannot be astonished at its destruction by the keepers. Very different in flight from the kestrel, boldly exposing itself in the open, the sparrow hawk more frequently lurks in the hedgerows and skulks in the shelter of friendly trees in proximity to nests and the unwary prey.

From a keeper's point of view there is doubtless an excuse for the extermination of the Common Buzzard (*Buteo vulgaris*, Leach). A pair that built their nest in a Worcestershire plantation a few seasons ago did a considerable amount of damage amongst the eggs and sitting birds before both were shot. They sometimes attack rooks' and crows nests; a number of the latter birds at times unite to mob a buzzard in his unwieldy flight, eventually driving it away ignominiously from the scene of action. The Rough-legged Buzzard is now too rare to be taken into account; but surely the few which remain of both species might be permitted to stay unmolested, for the credit of British ornithology.

There was a time when the Kite (*Milvus ictinus*, Savigny), was common even in the vicinity of towns, where they congregated in search of offal and acted as scavengers, at other times roaming the country boldly in search of suitable quarry. Two years ago a pair still found a habitat in the Radnorshire forests, but very few linger in the country, and the forked-tailed bird is a veritable rarity. Both the Kite and the Harriers are, indeed, too rare to exercise any influence—good or bad—on agricultural affairs. And as for the Goshawk (*Astur palumbarius*, L.), we know it no longer.

(*To be continued.*)

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending November 1, is furnished from the Meteorological Office:—

"The *weather* has been in an unsettled and rainy condition, except over the Midland and Southern Counties, where slight showers have been of frequent occurrence, but many bright intervals have been experienced. Sleet and snow showers prevailed on the 26th and 27th, especially in the north and west.

"The *temperature* was low during the earlier part of the week, but on the 29th a very rapid rise took place, and for the remainder of the period it was rather high. The average for the week, however, was 1° or 2° below the mean in almost all parts of Great Britain, while in 'England, E.,' the deficit was as much as 4°; in Ireland it was a little above the

normal. The lowest of the minima were recorded on the 28th, when the sheltered thermometer fell to 20° in the 'Midland Counties,' and to between 21° and 26° in most other parts of England and the west and north of Scotland. In Ireland the lowest reading was 31°, and in the 'Channel Islands,' 37°. The highest of the maxima, which were registered generally either on the 30th or 31st, ranged from 63° in 'England, S.W.,' and 'Ireland, S.,' to 57° in 'England, E.,' and 'England, N.W.'

"The *rainfall* has been less than the mean in the 'Midland Counties,' and 'England, S.,' and equal to it in the 'Channel Islands;' in all other districts an excess is shown, that in Scotland and the north of Ireland being very considerable. At Glencarron during October 28, as much as 3·75 inches was collected in the gauge.

"*Bright sunshine* has been fairly prevalent over England, but deficient in Ireland and Scotland. The percentage of the possible duration ranged from 17 in 'Scotland, N.,' and 21 in Ireland, to 39 in 'England, E.,' 40 in the 'Channel Islands,' and 46 in 'England, N.E.'"

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day degrees - a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Accumulated. Above (+) or below (—) the Mean for the week ending Nov. 1.	Above 42° for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	2 —	14	25	+ 194 —	91	12 +	222	47.6	17	24
2	1 —	20	28	+ 48 —	77	9 +	183	27.0	25	30
3	2 -	30	15	+ 149 —	106	3 +	154	20.7	46	30
4	4 —	30	17	+ 54 —	39	2 +	152	19.5	39	38
5	2 —	34	14	+ 25 —	42	3 —	149	18.5	38	33
6	2 —	38	9	+ 36 —	75	3 —	148	22.0	35	36
7	0 av.	32	10	+ 84 —	92	7 +	188	43 3	33	31
8	2 —	31	9	+ 126 —	91	4 +	176	28.6	37	30
9	1 —	40	0	— 18 +	4	2 +	178	30.2	33	36
10	1 +	35	3	+ 114 —	75	8 +	205	30.2	21	29
11	1 +	47	0	+ 127 —	31	3 +	189	32 8	21	32
12	1 —	60	0	+ 63 —	22	0 av.	171	25.9	40	43

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

Fruit Register.

POMME DE L'ESTRE.

A Limousin Apple, figured in the *Bulletin d'Arboriculture*, and which has all the desirable qualities that an Apple should possess—agreeable appearance, delicious flavour, exquisite perfume, and keeping from November till March, when it is in best order; and even to June, it is a hundred times better than the majority of Apples one sees in the shop-windows.

The tree is very fertile, and, while specially adapted for orchards, does well as a bush, or a pyramid or a cordon. The reader will please take note that our encomiums are taken from our Belgian contemporary, and that neither by him, nor by us, are they inserted as an advertisement! Leroy speaks of it as a fruit of the second class.

Markets.

COVENT GARDEN, November 6.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

Market quiet, with good supplies. The recent high prices of Kent Cobs have caused growers to be anxious to realise, and values have consequently been affected. Some consignments of Nova Scotia Apples to hand, but generally of very inferior quality. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples ½-sieve	3 6	7 0	Melons, each	0 6	2 0
Cobs, Kent, 100 lb.	67 6	75 0	Peaches, dozen,	3 0	12 0
Grapes, lb.	0 9	2 9	Pine-apples, St. Michael, each	2 0	6 0
Lemons, per case	20 0	40 0			

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, each	0 4	0 6	Lettuces, per dozen	1 6	...
Beans, French, lb.	1 0	...	Mushrooms, punnet	2 0	...
Beet, red, per dozen	1 0	2 0	Mustard and Cress, punnet	0 4	...
Carrots, per bunch	0 6	...	Parsley, per bunch	0 4	...
Cauliflowers, each	0 4	0 6	Shallots, per lb.	0 6	...
Celery, per bundle	1 6	2 0	Spinach, per bushel	3 0	...
Cucumbers, each	0 4	0 6	Tomatos, per lb.	0 9	1 0
Endive, per dozen	2 0	...	Turnips, per bunch	0 4	...
Herbs, per bunch	0 4	...			

Potatos.—Market for all kinds rather firmer. Prices about the same as last quotations. Expect higher prices shortly. *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Ericas, various, doz.	8 0	18 0
Aspidistra, doz.	18 0	42 0	Ferns, in var., doz	4 0	18 0
— speci. plants, each	7 6	10 6	Ficus elastica, each	1 6	7 0
Begonias, per doz.	4 0	6 0	Foliage plants, various, each	2 0	10 0
Bouvardias, p. doz.	9 0	18 0	Fuchsia, per doz.	3 0	6 0
Chrsanthem., p. doz.	4 0	18 0	Heliotrope, per doz.	4 0	6 0
— specimen plants, each	2 6	5 0	Hydrangeas, doz.	9 0	18 0
Coleus, per dozen	2 0	6 0	Liliums, various, per dozen	9 0	18 0
Cyperus, per dozen	4 0	12 0	Marguerites, doz.	6 0	12 0
Dracæna terminalis, per dozen	30 0	60 0	Mignonette, per doz.	4 0	6 0
— viridis, per doz.	12 0	24 0	Palms in variety, each	2 6	21 0
Euonymus, in var., per dozen	6 0	18 0	Pelargoniums, scarlet, per dozen	3 0	6 0
Evergreens, in var., per dozen	6 0	24 0	Solanums, per doz.	9 0	5 0

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Pelargoniums, scarlet, 12 spr.	0 4	0 6
Bouvardias, per bun.	0 6	1 0	— dozen sprays	0 6	1 0
Callæthiopica, 12 bl.	4 0	8 0	Primulas, double, 12 sprays	0 6	1 0
Carnations, 12 blms.	1 0	2 0	Pyrethrum, 12 bun.	2 0	4 0
— 12 bunches	4 0	9 0	Roses, Tea, per doz.	0 6	2 0
Chrysanth., 12 bun.	3 0	12 0	— coloured, dozen	2 0	4 0
— 12 blooms	1 0	3 0	— red, per 12 bun.	6 0	12 0
Eucharis, per dozen	3 0	6 0	— Safrano, dozen	1 0	2 0
Gardenias, 12 blooms	2 0	4 0	Stephanotis, per 12 sprays	4 0	6 0
Gladiolus, 12 bun.	6 0	12 0	Tuberoses, 12 blms.	0 3	0 6
Heliotropes, 12 spr.	0 6	1 0	Violets, 12 bun.	1 0	2 0
Lilium, var., 12 bl.	0 6	4 0	— Parme, Fr., bun.	2 6	3 6
Maiden Hair Fern, do	4 0	9 0	— dark, Fr., bun.	1 0	2 0
Marguerites, 12 bun.	3 0	6 0			
Mignonette, 12 bun.	2 0	4 0			

Orchid-bloom in variety. Not over plentiful.

SEEDS.

London: *Nov.* 5.—Messrs. John Shaw & Sons' Seed Merchants, of 37, Mark Lane, London, E.C., write that to-day's market presented a dull appearance. To-day's reports describe the French Clover seed crop as proving short, so that France will have to import from America. There is no quotable change this week in either Alsyke, White, or Trefoil. Imported and Italian Rye-grasses are still neglected. Very low rates now prevail for winter Tares. Some old sound small pigeon Beans are now offering at tempting figures. Dutch Linseed moves off freely on the moderate terms current. Blue Peas keep firm. For Haricot Beans there is an improved request. Canary and Hemp seed unaltered. Rape seed tends upwards. Mustard dull.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending November 1 and for the corresponding period in 1889:—1890, Wheat, 31*s.* 6*d.*; Barley, 29*s.* 7*d.*; Oats, 17*s.* 3*d.* 1889, Wheat, 30*s.* 3*d.*; Barley, 31*s.* 3*d.*; Oats, 16*s.* 8*d.*

FRUIT AND VEGETABLES.

Spitalfields: *November* 5.—Good supplies of all kinds of farm and market garden produce; demand fair, without material change in prices. Cabbages 1*s.* 6*d.* to 3*s.* per tally; Savoys, 2*s.* to 3*s.* do.; Cauliflowers, 4*s.* to 7*s.* do.; Seakale, 1*s.* to 1*s.* 3*d.* per punnet; Spinach, 1*s.* 6*d.* to 2*s.* per bushel; Brussels Sprouts, 1*s.* 3*d.* to 1*s.* 9*d.* per half-sieve; Greens, 1*s.* 3*d.* to 2*s.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* do.; Carrots, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Parsley, 1*s.* to 2*s.* do.; Horseradish, 1*s.* 2*d.* to 1*s.* 4*d.* per bun.; Celery, 4*s.* to 9*s.* per dozen bundles; frame Cucumbers, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen; natural do., 8*d.* to 1*s.* 3*d.* do. Parsnips, 4*d.* to 8*d.* per score; Beetroots, 3*d.* to 4*d.* per dozen; Endive, 1*s.* to 1*s.* 6*d.* do.; Cabbage Lettuces, 4*d.* to 6*d.* per dozen; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; Leeks, 1*s.*/6*d.* to 2*s.* per dozen; English Onions, 5*s.* to 5*s.*/6*d.* per cwt.; Dutch do., 2*s.* 6*d.* to 3*s.* per bag of 110 lb.; Belgian do., 2*s.* 6*d.* to 2*s.* 9*d.* do.; Spanish do. 6*s.* 6*d.* to 7*s.* 6*d.* per case; Carrots, 20*s.* to 45*s.* per ton; English Apples, 3*s.* 6*d.* to 9*s.* per bushel American Apples, 14*s.* 6*d.* to 18*s.* per barrel Pears, 2*s.* to 4*s.* 6*d.* per half-sieve; English Tomatos, 4*s.* to 6*s.* per peck; foreign do., 1*s.* to 3*s.* per box.

Stratford: *November* 4.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done at the undermentioned quotations:— Cabbages, 2*s.* 6*d.*; to 4*s.* per tally; Savoys, 2*s.* 6*d.* to 4*s.* 6*d.* do.; Cauliflowers, 4*s.* to 6*s.* do.; Potatoes, light magnums, 55*s.* to 75*s.* per ton; ditto dark magnums, 45*s.* to 50*s.* per do.; ditto Imperators, 55*s.* to 70*s.* do.; ditto, B. of Hebron, 50*s.* to 80*s.* do.; Turnips, 3*s.* to 3*s.* 6*d.* per dozen bunches; do. 30*s.* to 40*s.* per ton; Carrots, household, 45*s.* to 50*s.* do.; do., cattle feeding, 26*s.* to 33*s.* do.; Mangels, 17*s.* to 19*s.* do.; Swedes, 18*s.* to 20*s.* do.; Onions, English, 90*s.* to 110*s.* do.; Dutch, 4*s.* to 4*s.* 9*d.* per bag; Bordeaux,—; Apples, English, 3*s.* to 7*s.* per bushel; Watercress, 7*d.* per dozen.; Celery, 6*s.* to 10*s.* per dozen rolls; Carrots, 2*s.* to 3*s.* per dozen bunches; Dutch Apples, 15*s.* to 16*s.* per barrel.

POTATOS.

Borough and Spitalfields: *Nov.* 4.—Quotations —Hebrons, 60*s.* to 90*s.*; Regents, 50*s.* to 70*s.* Magnums, 55*s.* to 85*s.*; Imperators, 50*s.* to 75*s.* per ton.

Spitalfields: *Nov.* 5.—Quotations:—Magnums, 52*s.* 6*d.* to 70*s.*; Regents, 55*s.* to 70*s.*; Imperators, 60*s.* to 85*s.*; Hebrons, 50*s.* to 80*s.* per ton.

Stratford: *Nov.* 5.—Quotations:—Magnums, light, 55*s.* to 75*s.*; do., dark, 45*s.* to 50*s.*; Imperators, 55*s.* to 70*s.*; Hebrons, 50*s.* to 80*s.* per ton.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80*s.* to 102*s.* 6*d.*; do., inferior, 40*s.* to 75*s.*; hay, best, 60*s.* to 87*s.*; inferior do., 26*s.* to 50*s.*; and straw, 24*s.* to 39*s.* per load.

Notices to Correspondents.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

Books: Forcing Vegetables: *E. M.* The best is, perhaps, *The Forcing Garden*, by Samuel Wood (Crosby Lockwood & Co., Stationer's Hall Court, London, E.C.; *The Kitchen and Market Garden.* (Macmillan & Co., London, W.C.)—Pronunciation of Plant Names: *Omega. Botanical Names for English Readers*, by R. H. Alcock. (Reeve & Co., Henrietta Street, Covent Garden.) —*Plain and Solid, Practical Geometry*, by Todhunter. (Longman, Green & Co.)

B. S. William's Memorial: *E. C.* The treasurer of the fund is Mr. H. J. Veitch, Royal Exotic Nursery, King's Road, Chelsea, S.W.

Brussels Sprouts and Silver: *H. W. D.* The tarnishing of the silver spoon used for the Sprouts would be caused by the sulphur, &c., which is largely present in the Sprouts, and, indeed Cabbages generally.

CHRYSANTHEMUM: *J. Y.* From the flower sent, it appears to be nothing but a poor undeveloped Elaine.

EARLY PEAS: *An Amateur.* Very dwarf and good varieties are American Wonder and Chelsea Gem. Taller, are Ringleader, Daniel O'Rourke, William I., and Dr. Hogg, the earliest green marrow Pea. See last week's *Gardeners' Chronicle* for a note on sowing Peas.

EUONYMUS, OR EVONYMUS: *Dutchman.* The letter now written U was, in classical times, represented by V. The word comes direct from the Greek, and signifies "lucky;" but how this signification came to be attached to a plant we do not know. In English it should be pronounced eu-ō-nȳmus.

FLAVOURING FOR CIGARS: *E. Martens.* Liatris odoratissima.

FRONDS OF TREE FERN DRIED AS DECORATIVE OBJECTS: *Constant Reader.* You might try the drying of the fronds in long boxes, covering them over with silver or other sand which has been well dried in an oven. This might require to be repeated once or twice. Placing the fronds in herbarium paper and blotting paper under heavy pressure, and so arranged that air can circulate between the layers, is another way of drying them. The paper must be changed several times. To retain the pinnæ in their proper position when dry, the back of the frond should be brushed over with thin glue or varnish.

FRUITS: *Middlesex.* Pomona and Bess Pool Apples are culinary varieties.

GRAPES DISEASED: *P. Brightman.* The fungus on the scalded Grapes is a Glæosporium. See a curiously confirmatory note by Berkeley, *Gardeners' Chronicle*, 1871, p. 1162, bottom of 3rd col. We do not, however, think this is *G. laeticolor*, and it is just possible it may be the cause of "spot"—at any rate it makes "spot" much worse, and is very infectious. Your berries had a *blue mould*, as, well but quite distinct from this Glæosporium. So far there is no known remedy. *G. W. Smith.* [We may be able shortly to publish a woodcut of the fungus, and something more about it. ED].

HOP LOUSE: *Ed. Jap.* This insect is nearly allied to the aphides, but from the formation of its hind legs it has the power of hopping, hence the names given it, Hop frog, hop louse. In Germany it is called Pear sucker—*Birnen Sauger.* If you get Miss E. A. Ormerod's *Manual of Injurious Insects*, published by Swan Sonnenschein & Allen, London, you will find its life history detailed.

IMPORTS OF CUT FLOWERS: *J. F.* There are no available statistics.

LILACS: *T. A.* Usually for early bloom foreign plants are employed, the better ripened shoots of these affording the best bloom; but for late forcing home-grown Lilacs are good enough. The small plants for potting are usually worked on the common Lilac or on Privet, are kept dwarf, and the shoots thinned out, and planted in the warmest part of the garden to be prepared for forcing. Liquid manure may be employed early in the growing season. When large enough they may be put into a dark, warm place, a mushroom house or the like, if white blooms are expected. The Persian and its varieties are those commonly employed. Where there is sufficient accommodation large bushes may be forced; and if cut flower is the only object, pots and tubs are not necessary, beds of soil being just as good and less costly. The main things are to get well ripened wood, and force out the flower by high temperature and moisture before the leaves have time to form.

LORD BUTE'S BOTANICAL TABLES: *Viola.* Nine quarto volumes were published in 1785, but only twelve copies of this work, "more magnificent than useful," were printed. You are not likely to have seen any advertisement of the book for sale.

METALLIC RUST: *E. E.* Certainly no fungus.

MUSHROOM SPAWN: *T. G.* The specimen sent is not fit for use.

NAMES OF FRUITS: *Surrey.* 1, Gansell's Bergamot; 2, Beurré Clairgeau.—*W. S.* Mère de Ménage.—*W. Fry.* 1, Fearn's Pippin; 2, Peasgood's Nonsuch; 10, Golden Noble; 11, Lord Derby; 12, Gloria Mundi.—*A. E. Walker.* Empress Eugène—*G. B.* 1, Cox's Pomona; 3, Melon; 4, Sammon's Reinette.—*Ted.* 1, Duchess d'Angoulême; 2, Beurré Rance; 3, Doyenne fin; 4, Bergamot d'Esperen.—*G. W.* 1, Gansell's Bergamot; 2, Althorp Crassane; 3, King of the Pippins; 4, London Pippin; 5, Fearn's Pippin.—*T. Trollope.* Ross's Nonpareil.—*J. Norfolk.* Your seedling Apple is of no value.

NAMES OF PLANTS: *J. W. K.* Ionopsidium acaule.—*H. M.* Polygonum amplexicaule.—*Westonbirt.* Certainly a form of Cratægus punctata, which varies in colour of fruit from clear yellow to deep red.—*H. H.* Cœlogyne speciosa.—*D. J.* If the scape comes from a bulb bearing leaves sheathing to a distinct stem, it is Amaryllis belladonna blanda; if from a bulb from which the leaves spring without a stem rising above it, it is A. belladonna rosea of gardens.—*A. G. Nichols.* 1, Mespilus Smithii; 2, Pyrus malus form; 3, Cratægus crus-galli var.; 5, C. heterophylla; 6, C. nigra; 7, C. tanacetifolia; 8, C. Aronia.—*O. B.* Masdevallia peristeria.—*Vox.* Cannot tell without a flower, probably a Kleinea.—*A. B.* 1, Cupressus Lawsoniana; 2, Abies Pinsapo; 3, Abies Pindrow; 4, Picea Morinda; 5, Abies pectinata, common Silver Fir.—*Rob. P.* Chelidonium majus, a relative of the Poppies. It has an acrid yellow juice. *W. C. & Son.* Escallonia montevidensis.—*S. C.* Taxodium distichum. The deciduous Cypress often figured in the *Gardeners' Chronicle.*

PLANTS IN THE METROPOLITAN AREA: *Frux.* See the *Flora of Middlesex*, by Trimen and Dyer.

TOMATO: *G. G.* Badly infested with disease. There is no cure. Carefully collect and burn every vestige of the plants.

WIRE-NETTING FOR BUSH FRUIT, &C.: *H. S.* Your plan of having small-meshed netting to keep out thrushes and blackbirds, is a good one, if the mesh will let the small birds through. When the fruit is gathered, thrushes and blackbirds might be admitted by the doors, they also eating grubs, &c.

WORMS IN POTS.—*B. T. L.* Put a handful of quicklime into a gallon of water, let the latter stand till it gets clear before using it on the soil. The worms will come to the top after once watering the soil, and may then be collected. We do not undertake to name florists' flowers.

CATALOGUES RECEIVED.

VILMORIN-ANDRIEUX & Co., 4, Quai de la Mégisserie, Paris—Gladioli.

KEYNES, WILLIAMS & Co., Salisbury—Roses, Fruit Trees, &c.

P. J. LOOYMANS & SONS, Oudenbosch, Holland—Trees.

ERNEST BENARY, Erfurt, Germany—Novelties (Preliminary List).

E. P. DIXON & SONS, Hull—Roses, Forest, and Fruit Trees, &c.

V. LEMOINE & SON, 134, Rue du Montet, Nancy—New Plant Supplement.

J. BACKHOUSE & SON, York—Fruit Trees; Forest and Ornamental Trees; and Roses.

COMMUNICATIONS RECEIVED.—B.—A. G.—W. R.—J. C.—S.—W. A. C.—W. K.—W. C.—J. S.—M. D.—J. C.—G. C.—E. T.—J. M.—C. C.—J. G.—E. J.—Wild Rose.—F. Ross.—W. Kelly.—W. T. T. D.—W. S.—E. A.—G. P. C.—B. W. N.—W. K.—J. J. W.—G. B. C.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

SPIRÆA JAPONICA DISEASED.—I should be pleased if any of your readers could tell me of any remedy for a disease attacking Spiræa japonica. As soon as the plants came into full leaf, just before flowering, they were attacked by either disease or some affection of the plants, which made all the leaves curl, and then turn "rusty." We tried them in all sorts of ways, and carefully watered them. But, do what we would, this rust would appear. As at this time of year we pot our plants, I should be glad to know what can be done, in potting or otherwise, to stop this. I may say, that after potting the new clumps, they are stood in a cold frame until started, and are then brought on in a warmer house with water in saucers. *J. E. Gross, Redditch.*

BECCLES AND DISTRICT CHRYSANTHEMUM AND FLORICULTURAL SOCIETY.—A society has been formed in the Beccles district, under the above title, and its first show of Chrysanthemums will be held on November 20 and following day.

PRICED LIST ON APPLICATION.

SUTTON'S BULBS
GENUINE ONLY DIRECT FROM READING.

All Bulbs value 5s. and upwards Carriage Free.

FOR PLEASURE AND PROFIT.

FRUIT. Nothing so profitable and easy to grow. 74 Acres in stock.
See CATALOGUE for simple Instructions and kinds of Trees to suit all soils.

ROSES. 20 Acres. Bushes, 8s. per dozen; 60s. per 100.
STANDARDS, our selection, 21s. per dozen, 140s. per 100.
☞ *Packing and Carriage Free for Cash with Order.*

ROSES IN POTS, from 15s. per dozen.

ORNAMENTAL TREES, 91 Acres.
4 Acres of Glass.

CLEMATIS (80,000), 12s., 18s., and 24s. doz.

SEEDS & BULBS. Vegetable, Flower, and Farm.
Descriptive LISTS free.

RICHARD SMITH & CO.,
WORCESTER.

CLIBRAN'S VINES

Are unusually strong, short-jointed, and thoroughly well-ripened. Planting and fruiting Canes of the leading varieties at 3s. 6d., 5s., 7s. 6d., and 10s. 6d. each.
CLEMATIS.—Fine collection of the best varieties, 1s. and 1s. 6d. each; 6 distinct sorts, 5s. 6d.; 12 sorts, 10s. 6d.
IVIES.—12 in 12 pretty sorts, 9s.; 6 in 6 sorts, 4s. 6d.
CLIBRAN'S OLDFIELD NURSERIES, ALTRINCHAM; also Manchester.

VINES AND FIGS. Strong Fruiting and Planting. The best leading kinds, thoroughly ripened without bottom heat. Particulars on application.

DICKSONS NURSERIES, CHESTER.

Quick.

W. W. JOHNSON AND SON, Boston, Lincolnshire, offer quarter of a million three years transplanted QUICK, and 50,000 two and three years seedling QUICK, all clean and well grown, with excellent roots.
Samples of 100 charged at 1000 price.

For Sale.—Extra-sized bearing Peach Trees, from Walls.

WICETON has a few very fine well-balanced, fibrously-rooted Trees to offer, reasonable: viz., Royal George, Half-Standards and Dwarf-trained: Noblesse, Alexander Noblesse, Hale's Early, and other varieties, from 6 to 15 feet through. Prices on application.
Putney Park Lane, S.W.

PYRACANTHA LALANDI (Burning Bush), fine plants, 3 to 4 feet, in pots, 12s. per doz.
Irish IVIES, in pots, 5 to 6 feet, 12s. per doz.; 6 to 8 feet, 18s.; 8 to 10 feet, 24s.; 10 to 12 feet, 36s. per doz.
RHODODENDRONS, beautifully set with buds, named hybrids, 18s. and 24s. per doz.; seedlings, 6s. and 9s. per doz.
Descriptive Price LISTS of Plants, Bulbs, Seeds, and all Garden Requisites, free on application.
W. FROMOW AND SONS, Sutton Court Nurseries and Seed Establishment, Chiswick, London, W.

SEAKALE for Forcing.—Superior Selected Crowns, 7s. per 1000; under 500, 8s. 6d. per 100. Cash with Orders. RHUBARB ROOTS and RHUBARB SEED of all varieties. Price on application.
ALFRED ATWOOD, Grower, 21, Shillington Street, Battersea, S.W.

FOR SALE, five very large Specimen PALMS, and one TREE FERN—all in robust health, at reasonable prices. For particulars apply to
D. KNIGHT, The Gardens, Calton Lodge, Morecambe.

CARSON'S PAINT

Patronised by 16,000 of the Nobility, Gentry, and Clergy, for all kinds of
OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames, &c.
1 Cwt., and Oil Mixture, Free to all Stations.
Liquid Non-Poisonous Paints for Inside of Conservatories, &c. Prices, Patterns, and Testimonials, Post-free.
LA BELLE SAUVAGE YARD, LUDGATE HILL, E.C.
BACHELOR'S WALK, DUBLIN.—*Discount for Cash.*

Oh, the Man must be gone Wrong,

T O O F F E R —

NOBLE STRAWBERRY, 20s. per 1000.
OXONIAN ,, 20s. per 1000.
AUGUSTE NICAISE, turned out, 7s. 6d. per 100.
R. GILBERT, High Park Gardens, Stamford.

SPECIAL CHEAP OFFER.

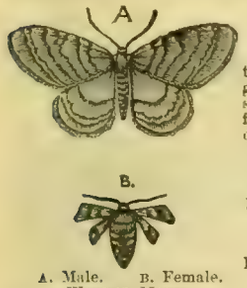
H.P. ROSES on seedling Briar, from 40s. per 100. All the best sorts grown.
CARNATIONS and PICOTEES, 5s. per dozen, 30s. per 100.
AUCUBA JAPONICA, 2 to 2½ feet, 12s. per dozen; 2½ to 3 feet, 18s. per dozen.
PRIVET OVALIFOLIUM, 2½ to 3½ feet, 8s. per dozen; 3 to 4 feet, 10s. per 100.
LIMES, Standards, good heads, 10 to 12 feet, 16s. per dozen.
CHESTNUTS, 8 to 10 feet, 8s. per dozen; 10 to 12 feet, 12s. per dozen.
PEARS, Standards and Pyramids, 7s. 6d. per dozen.
APPLES, PLUMS, THORNS, POPLARS, LABURNUMS, ELMS, and BIRCH, as good as money can buy.
CATALOGUE on application.
All goods free to rail for cash with order to—
R. W. PROCTOR, Nurseries, Ashgate Road, Chesterfield.

A LIST of SPECIALTIES on SALE, which includes VIOLETS, in large clumps, by the dozen or hundred; Border CARNATIONS, which include Gloire de Nancy, Dr. Waggott, and others, by the dozen or hundred. ROSE TREES, Standard and Half-Standard; Teas and Perpetuals.
Veitch's Telegraph CUCUMBER, warranted true, by packet or ounce.
Also Gilbert's Royal family of the BRASSICA TRIBE, including new seed of Chou de Burghley, Universal SAVOY, Late White Victoria BROCCOLI; and lastly, but not leastly, Gilbert's King of the BRUSSELS SPROUTS. Send for particulars to—
R. GILBERT, High Park Gardens, Stamford.

HORNE'S TREE DRESSING

For CATERPILLAR BLIGHT.

OCTOBER IS THE BEST MONTH TO APPLY IT.



A. Male. B. Female. WINTER MOTH.

"Cherry Gardens, Lenham Heath, Maidstone,
"January 20, 1890.
"DEAR SIR,—I am pleased to tell you your Tree Dressing gave me great satisfaction in sticking the Winter Moth. I found a great many on the dressing in November.
"Yours truly,
"J. B. HARRIS.
"W. Horne."

Write for particulars and price.

W. HORNE,
PERRY HILL, CLIFFE
Near ROCHESTER.

For Green and Black Fly, American Blight, Camellia Scale, Red Spider, Mealy Bug, Brown and White Scale, Worms, Wood Lice, &c.

"PICRENA," THE UNIVERSAL INSECTICIDE.

SAFE—ECONOMICAL—EFFECTUAL.

15, PRINCES STREET, EDINBURGH, *July* 15, 1887.—"Dear Sirs, I have thoroughly tested a sample of a new Insecticide which you were so good to send me. At the rate of 1 oz. to a gallon of water at a temperature of 95°, I find it kills Green Fly immediately. Double this strength, or 2 oz. to a gallon at 120°, seals the fate of Scale of all sorts in a few seconds; while 3 oz. to gallon at same temperature effectually dissolves Mealy Bug, and so far as I have yet observed, without the slightest injury to leaf or flower, and it is withal a most agreeable compound to work with. All our insect remedies are applied through common syringe, or garden engine, a much severer test of efficiency than when applied by hand-washing or spray.—I remain, dear sirs, yours truly. (Signed) A. MACKENZIE," of Messrs. Methven & Sons.

Victoria and Paradise Nurseries, Upper Holloway, London, *January* 7, 1888. "GENTLEMEN—I have given your Insecticide, 'Picrena,' a good trial in competition with many others. I am pleased to say that I have found it to be more effectual in destroying Mealy Bug and other insects than anything we have ever used. It ought to command a good sale. (Signed) B. S. WILLIAMS."

Sold by Chemists, Nurserymen, and Florists,
in Bottles at 1s. 6d., 2s. 6d., and 3s. 6d.; in Tins (1 and 2 gallons), 10s. 6d. and 20s. each; in quantities of 5 gallons and upwards, 9s. per gallon.

Prepared only by
DUNCAN, FLOCKHART & CO., Chemists to the Queen, Edinburgh.

May be had from B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London; and from WILLIAM EDWARDS AND SON, 157, Queen Victoria Street, London.

EPPS'S SELECTED PEAT.

SPECIAL for Orchids, Choice Plants, Hardwooded and Fern do., and Rhododendrons. Excellent LEAF-MOULD, SAND, Rich LOAM, PEAT-MOULD, CHARCOAL, COCOA FIBRE, SPHAGNUM, and all GARDEN SUNDRIES. PEAT MOSS LITTER.—EPPS & CO., The Peat Dépôt, Ringwood, Hants.

SLUGICIDE (Registered).—Certain death to Slugs; Fertiliser to Soil; perfectly harmless to plant, vegetable, and animal life. Delicate Seedlings are absolutely secure if sprinkled with Slugicide. Price 1s. 6d., post-free.—The SLUGICIDE CO., 6, Mary-le-port St., Bristol, and all Seedsmen.

BASON'S WONDERFUL "NEW MILL-TRACK" MUSHROOM SPAWN

is the best, and has achieved more success than any other Spawn in the world, *vide* Press Notices and recent Testimonials, *with dates*, from leading authorities throughout the Kingdom. Price, 6s. per bushel of sixteen cakes, the largest ever offered (*cases and packing free*).

Sole Proprietor and only Manufacturer of the "New Mill-track" Mushroom Spawn for Home and Export, WILLIAM DD. BASON, 25, Victoria Buildings, Wolverhampton.

MANUFACTORIES—Tempest Street; Town Wells Fold; and Finchfield, Wolverhampton.

PATENT INSECTICIDE PATENT SPRAYER. BARTON HOUSE, THE 'Stott' DISTRIBUTOR. PATENT SYRINGE. MANCHESTER.

ORCHID PEAT, PEAT MOULD, &c.

QUALITY THE VERY FINEST. (All sacks included.)

	Per sack.	5 sacks for	Truck loads of 10 yds. and upwards loose, free on rail, per yard.
Best selected Brown Fibrous Peat for **Orchids**	4/6	20/-	14/-
2nd quality do. do.	4/-	18/-	12/-
Best Brown Fibrous PEAT for **Rhododendrons, Azaleas, Heaths, Ferns,** &c.	3/6	15/-	10/-
2nd quality do. do.	3/-	12/6	8/
Superior Peat Mould do. ...	2/6	10/-	—
Superior Leaf Mould do. ...	2/6	10/-	—

The above prices subject to 2/- a yard reduction to purchasers of 4 yards and upwards bringing own carts to wood; a day's notice requested. Special terms quoted for carting within 15 miles of Bexley, according to distance.
Terms strictly cash with order. Send Postal Order for Sample Sack. Further particulars on application to
D. CAMERON, Forester, Mount Mascal Estate, Joyden Wood, Bexley, S. O., Kent.

GARDEN REQUISITES.

TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. 4d. each; 10 sacks, 12s. 6d.; 15 sacks, 17s. 6d., 20 sacks, 20s.; 25 sacks, 24s.; 30 sacks, 27s.; 40 sacks, 35s.; 50 sacks, 40s.; Truck-load, loose, free on rail, 30s. Limited quantities of G., special quality, granulated in sacks only, 2s. 6d. each.
GENUINE ORCHID PEAT, 8s. 6d. per sack; 5 sacks, 40s.; BEST BROWN FIBROUS PEAT, 5s. per sack; 5 for 22s. 6d. BLACK FIBROUS PEAT, 4s. 6d. per sack; 5 for 20s. COARSE SILVER SAND, 1s. 6d. per bushel; 14s. half ton; 24s. per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1s. per bushel. Chrysanthemum Compost, 1s. 6d. per bushel; 4s. per sack. Tobacco Cloth or Paper, 1s. per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, &c., &c.

RUSSIA MATS:—	Per bund. of 10.	Per bund. of 25.	Per bund. of 100.
ARCHANGEL... ...	16 -	40/-	140 -
No. 1, Heavy	9/-	20 6	80/-
,, 2, ,, ...	7 6	17 -	65/-
,, 3, Light	6 9	15/6	60/-

We strongly recommend our No. 1 Heavy for strength and durability. Write for Price List.
Terms strictly Cash with order.
CHUBB, ROUND & CO., West Ferry Road, Millwall, London, E. *Bankers—Smith, Payne, & Smiths.*

BROWN FIBROUS PEAT for ORCHIDS, 31s. 6d. per Ton, or 12&s. per Truck of 4 tons; Bags, 5s. each; 10 Bags, 45s.
BROWN and BLACK FIBROUS PEAT, 25s. per Ton, or £5 per Truck of 4 Tons; Bags, 5s. each; 10 Bags, 45s.
PEAT, for forming Rhododendron, Bog, and American Plant Beds, 21s. per Ton, or £4 4s. per Truck of 4 tons.
THOMAS WALKER, Tekels, Camberley, Surrey.

SAVE HALF THE COST.

GARSIDE'S SILVER SAND

BEDFORDSHIRE COARSE AND FINE

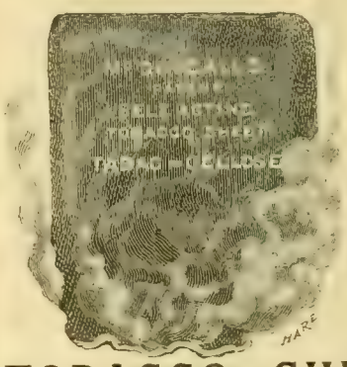
Is admitted by the leading Nurserymen to be **the Best Quality** obtainable in the Trade.
Consumers should **Buy Direct** from the Owner of these Celebrated and Extensive Pits, which contain a practically inexhaustible supply of Splendid Sand, and thus *save half the ordinary cost.* NO TRAVELLERS OR AGENTS.
Apply direct to the Proprietor for Samples and Price free on Rail or Canal. *All Orders executed with the utmost promptness and under personal supervision.* Special Railway Rates in force to all parts. All kinds of **PEAT** supplied at lowest possible prices. Sample Bag sent on application to
GEO. GARSIDE, Jun., F.R.H.S., Leighton Buzzard, Beds.

ORCHID PEAT, best quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. RHODODENDRON and AZALEA PEAT. Samples and Prices to WALKER AND CO., Farnborough, Hants.

TOBACCO PAPER SUPERSEDED!

It has long been used with far from satisfactory results, and much injury to foliage. It is **NOT** the Tobacco that causes injury, **but the fuming or burning of the paper or cloth,** also the **use of hot coals.**

McDOUGALLS'



PATENT SELF-ACTING.

No Hot Coals or Coke required.

Exterminates all Insects and Blight.

TOBACCO SHEETS.

The sheets consist of Cellulose and Tobacco Extract of standard strength, so prepared that they will fume when a light is applied. Fumigation is thus rendered easy, certain, safe and cheap.

Messrs. JOHN LAING & SONS, *Forest Hill, S.E.*—"We find your Self-acting Tobacco Sheets the most effectual, as well as the handiest, of any material we have ever used."—July 19, 1890.

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Mr. C. W. BAUSE, *Morland Nursery, South Norwood.*—"Tried them with the very best results."

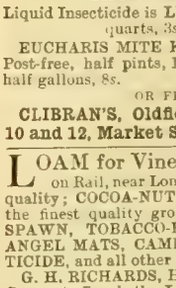
Mr. W. H. LEES, *The Gardens, Newmarket.*—"It is by far the best method of fumigating yet introduced; in fact I think perfection."—October 29, 1890.

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1s. Sheets (*for 1000 cubic feet in parcels of 1 dozen, also ½, ¼, and 1 Gross*), **12s. per Dozen** (*Counted at 13 to the Dozen.*)

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McDougall Bros.
London: 10, Mark Lane. York: 2, King Street.
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CAMPBELL'S FUMIGATING INSECTICIDE



Is safe, certain, free from unpleasant smell, and easily used. Try it, and see the difference. Hundreds of testimonials. In rolls, post-free, for houses having a capacity of 100 cubic feet, 8d.; 500 cubic feet, 1s.; 1000 cubic feet, 1s. 3d.; 2000 cubic feet, 2s. 3d.; 3000 cubic feet, 2s. 9d.; 4000 cubic feet, 3s. 3d.

THE CHEAPEST—SUREST—SAFEST

Liquid Insecticide is LEMON OIL. Post-free, pints, 1s. 10d. quarts, 3s. 3d.; half gallons, 5s. 9d.

EUCHARIS MITE KILLER has saved thousands of bulbs. Post-free, half pints, 1s. 9d.; pints, 2s. 9d.; quarts, 4s. 9d.; half gallons, 8s.

OR FROM YOUR SEEDSMAN,

CLIBRAN'S, Oldfield Nurseries, Altrincham; also 10 and 12, Market Street, Manchester.

LOAM for Vine and Fruit Tree Borders, Cheap, on Rail, near London. RHODODENDRON PEAT, of fine quality; COCOA-NUT FIBRE REFUSE; BONE MANURES, the finest quality ground, Meal, ¼ to ½ inch; MUSHROOM SPAWN, TOBACCO-PAPER, RAFFIA and NEW ARCHANGEL MATS, CAMPBELL'S NEW FUMIGATING INSECTICIDE, and all other Garden Requisites of the best quality
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GENUINE GARDEN REQUISITES, as supplied to the Royal Gardens.
RUSSIA MATS—New Archangel, 9 ft. 4 ins. by 4 ft. 6 ins., 22s. doz.; Heavy Petersburg, 7 ft. by 3 ft. 8 ins., 12s. doz. SPÉCIALITÉ TOBACCO PAPER, 10d. per lb., 28 lb. for 21s. TOBACCO CLOTH, 1s. per lb., 28 lb. for 26s. ORCHID PEAT, 8s. per sack. PEAT, LOAM, SAND, MANURES, and SUNDRIES. Price List free.—W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s., from the Trade, Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Raffia, Mats; Bamboo Canes, Rustic Work, Manures, &c. Cheapest Prices of WATSON AND SCULL, 90, Lower Thames Street, London, E.C.

"Broom House, Fulham.

"FRIGI DOMO.—After two winters' experience of this material as a protection from frost, I have come to the conclusion that it is the best covering for pits and frames which ever came under my notice. It will keep out more frost than two mats, while it only costs the price of one; it is more tidy than loose litter, and fits more closely than straw hurdles, and it is much more manageable, for when fitted on to a roller endways, covering and uncovering can be effected in half the usual time, and there is no danger of breaking the glass. In wet weather it lies quite close to the glass, but as soon as frost sets in, it becomes almost as tight as a drum, thus forming a space between it and the glass, a thing very desirable where the edges fit tightly, which they do. I believe that any greenhouse plant is perfectly safe under it until the thermometer indicates 10 degrees of frost.

"J. RUST."

"FRIGI DOMO" CANVAS.

TO BE HAD

2 yds., 3 yds., and 4 yards wide.

Of all Nurserymen and Florists, or from the Sole Proprietor and Maker,

BENJAMIN EDGINGTON

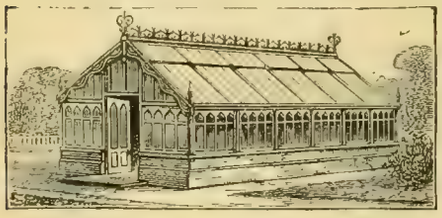
(LIMITED),

2, DUKE ST., LONDON BRIDGE, S.E.

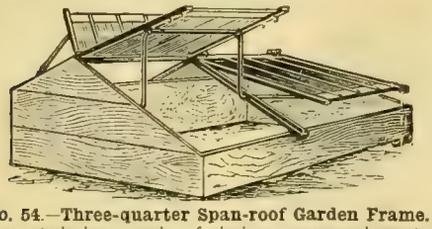
Ask for "Frigi Domo," and see that it is stamped "FRIGI DOMO." Registered Trade Mark.

C. FRAZER'S EXECUTORS,

Horticultural Builders, NORWICH.



This design makes a handsome addition to any garden, and will harmonise with many Villa Residences. Constructed on the most approved principle, all the materials and workmanship being of the very best. Prices, including Erecting, Glazing with 21-oz. English Glass, and Painting, four coats, &c., on application.



No. 54.—Three-quarter Span-roof Garden Frame.

A large stock always ready, of which we are original inventors.

The illustration shows a Two-light Frame, 8 by 6 feet; height at back 22 inches, front 11 inches, and at ridge 32 inches. Made of well-seasoned redwood deal, with sides and ends 1¼-inch thick. Lights 2-inch thick, glazed with 21-ounce glass, and fitted with Improved Set-opes, as shown above.

	Length.	Width.		
1 Light Frame,	4 feet	by 6 feet ...	Cash Prices, Carriage Free. Cases extra, allowed if returned.	£2 15 0
2 ,, ,,	8 feet	by 6 feet ...		4 7 6
3 ,, ,,	12 feet	by 6 feet ...		6 0 0
4 ,, ,,	16 feet	by 6 feet ...		7 12 6
5 ,, ,,	20 feet	by 6 feet ...		9 5 0
6 ,, ,,	24 feet	by 6 feet ...		10 17 6

Carriage Paid to all Goods Stations in England and Wales; also to Edinburgh, Glasgow, Dublin and Belfast.

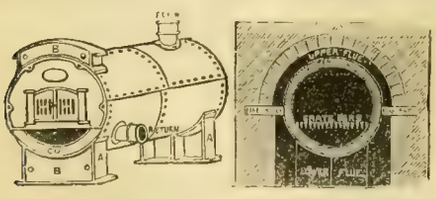
Illustrated Catalogue of Conservatories, Greenhouses, Garden Frames, Poultry Houses, Dog Kennels, &c., post-free.

Beware of unprincipled Imitators.

TRENTHAM BOILERS.

The original and only Makers of the Genuine Trentham, also

SILVESTER'S PATENT TRENTHAM BOILER



Makers of HOT-WATER PIPES and FITTINGS, and APPARATUS erected complete by HOT-WATER, HOT-AIR, &c. GAS and WATERWORKS PLANT of every description.

FRED SILVESTER & CO.,

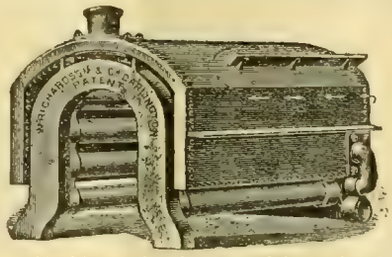
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PATENT

HOODED TUBULAR BOILERS



Have combined in one the advantages of the two best forms of Boilers hitherto made—the plain Saddle and Tubular Saddle.

They Heat more than Twice the Quantity of Piping

that can be heated by an ordinary Saddle with an equal amount of fuel. They are durable, quick-heating, easily set, and easy to manage. Send for PRICE LIST to the patentees and sole makers—

W. RICHARDSON & CO.,

Horticultural Builders and Hot-water Engineers,

DARLINGTON.

Send for Present Price of Pascoe's Celebrated

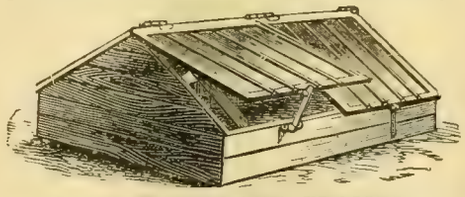
"DIAMOND" ANTHRACITE HORT. COAL,

delivered at all available Railway Stations.

Sample Bag sent free of cost.

T. T. PASCOE, Colliery Office, SWANSEA.

CHEAP FRAMES.



PORTABLE PLANT FRAMES.

The above are without exception the most useful kind of frame for plant growing, and every one with a garden should possess one. The sashes turn right over one on to the other, and the boxes are put together with wedges, and can be taken apart in a few minutes. Sizes and prices, carriage paid to any station in England, ready glazed and painted:—

			£	s.	d.
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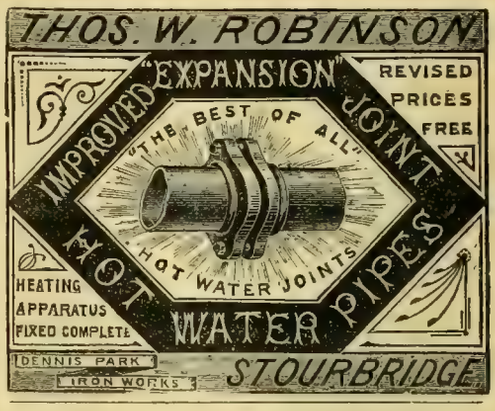
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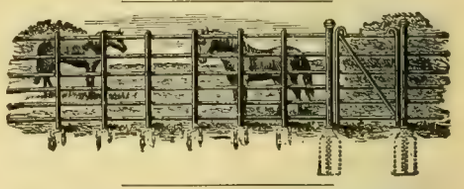


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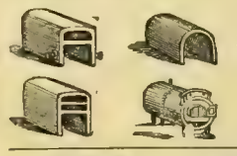


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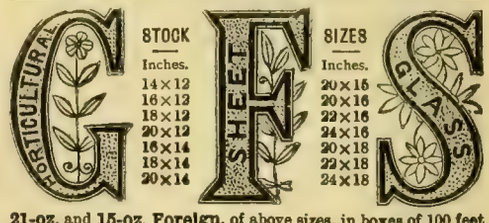
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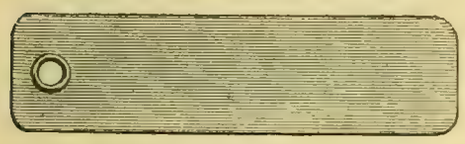
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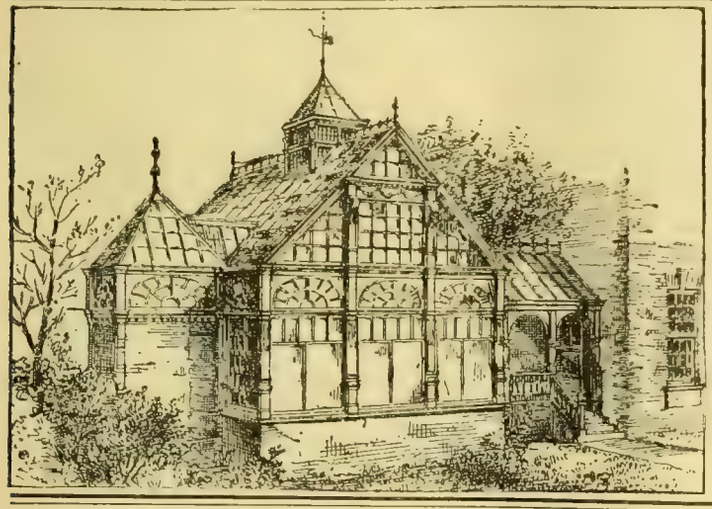
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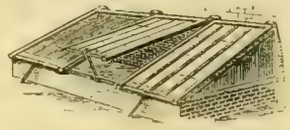
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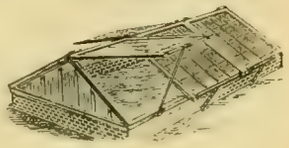
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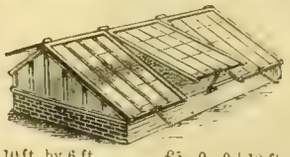
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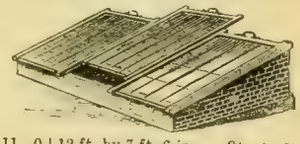
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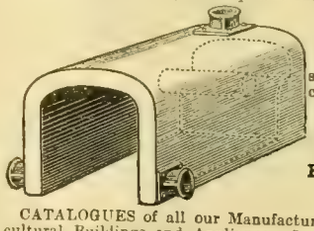
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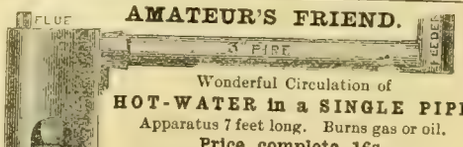
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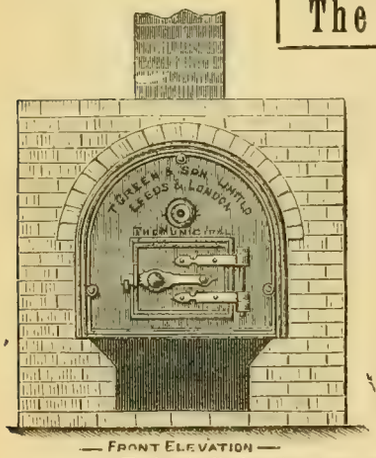
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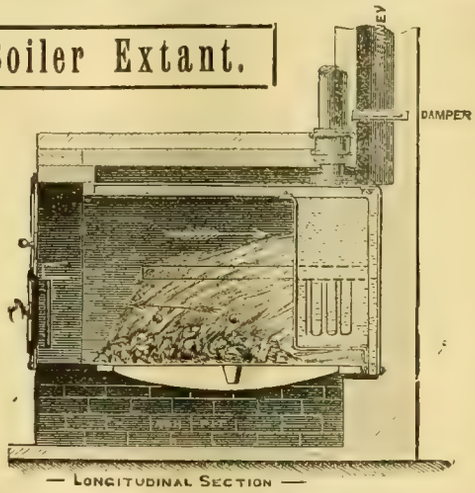
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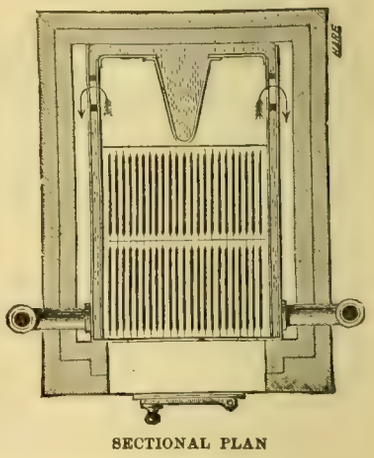
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LIVERPOOL HORTICULTURAL ASSOCIATION.
The ELEVENTH GRAND CHRYSANTHEMUM and FRUIT SHOW will be held in St. George's Hall, on TUESDAY and WEDNESDAY, November 18 and 19.
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BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

BULBS—BULBS—BULBS.—Our stock of Dutch Bulbs is quite ready for inspection. Customers at liberty to come and select for themselves at the—
NEW HAARLEM BULB WAREHOUSES, 34, Mansell Street, Aldgate, City, London.
Proprietors—MICHAEL RAINS AND CO.
Reg. Tel. Address—"BIOTICUS, London." Established 1856.
CATALOGUE on application.
Named HYACINTHS, 2s. 6d. per doz. 1st size Bulbs of any sort.

RUMSEY'S ROSES are strong, healthy, and well-rooted. Standards, Dwarfs, and Pot-plants, by the dozen, 100, or 1000. Priced Descriptive Catalogue free.
W. RUMSEY, Joyning's Nurseries, Waltham Cross, N.

Chrysanthemum Exhibition.
LAING'S COLLECTION is now on View. All the Choicest Novelties and Best Standard Varieties, and many Seedlings can be seen. Inspection cordially invited. Catford Bridge (S. E. R.) Railway Station. Descriptive LIST, post-free.
JOHN LAING AND SONS, Forest Hill Nurseries.

ADIANTUM FARLEYENSE, in 48's, 100s. and 120s.; and extra size, grand stuff, in 48's, 150s. per 100.
ADIANTUM CUNEATUM, good stuff, in 48's, suitable for cutting, 40s. per 100. Package free for cash.
PHILIP LADDS, Swanley Junction, Kent.

LAING'S FRUIT TREES, ROSES, &c.—We cordially invite inspection of our large and fine stock of FRUIT TREES, ROSES, VINES, SEAKALE, Forcing Plants, &c. CATALOGUES, post-free.
JOHN LAING AND SONS, Seed, Plant, and Bulb Merchants Forest Hill, London, S.E.

Plums and Damsons.
MESSRS. FLETCHER BROS. have a large quantity of the above, Standards and Half-standards.
Ottershaw Nursery, Chertsey, Surrey.

Prize Cob Filberts.
MR. COOPER, F.R.H.S. (late of Calcot Gardens), is the largest grower in the kingdom of Prize Cob Filbert Trees for Sale. Descriptive and Price LISTS on application to Mr. COOPER, Western Elms, Reading, Berks.

STANDARD CHERRIES, very fine trees, with fibrous roots; FRUIT TREES of all kinds, GRAPE VINES, FIGS, ROSES, SEAKALE, broad-leaved PRIVET. The Trade supplied.
WILL TAYLER, Osborn Nursery, Hampton.

LAXTON'S STRAWBERRIES.—There has been no better time during current year than the present for planting Strawberries Extra Plants now added. Particulars of new and best sorts from
THOMAS LAXTON, Seed Grower, Bedford.

FOR SALE, a large quantity of old unbound Numbers of the *GARDENERS' CHRONICLE*.
Apply to Mrs. ASTLEY, Chequers Court, Tring.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords Galashiels, N.B.

SALES BY AUCTION.

Dutch Bulbs.—Dutch Bulbs.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots to suit all buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving weekly from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Wednesday Next.

Choice named STANDARD and DWARF ROSES, AZALEA MOLLIS, well set with Buds, from Ghent; CARNATIONS, PICOTEES, and other BORDER PLANTS, Home-grown LILIES, SPIRÆAS, Hardy ORNAMENTAL SHRUBS and CONIFERS, LAURELS, &c., GLADIOLI, LILY of the VALLEY Crowns and Clumps, a choice COLLECTION of NARCISSUS, JONQUILS, ROMAN HYACINTHS for Forcing, and many other BULBS and ROOTS.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 19.

On view morning of Sale, and Catalogues had.

Wednesday Next.

IMMENSE IMPORTATIONS from JAPAN.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 19, at half-past 12 o'Clock precisely, immense importations just received direct from Japan in splendid condition, comprising 20,000 extra fine Bulbs of LILIUM AURATUM, 5000 L. LONGIFLORUM EXIMEUM, 2000 L. SPECIOSUM ALBUM and RUBRUM, 800 L. KRAMERII, L. TIGRINUM, L. CORDIFOLIUM, L. ELEGANS INCOMPARABLE, L. LEITCHLINI L. AURATUM MACRANTHRUM, &c., 20,000 White ROMAN HYACINTHS, 5000 South African TUBEROSES and AMARYLLIS, &c. All specially lotted for the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.

GREAT UNRESERVED SALES.

Four times Weekly.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, all received direct for Unreserved Sale, and lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Clapham, S.W.

MONDAY and TUESDAY NEXT.

Important two days' Clearance Sale of ESTABLISHED ORCHIDS, by order of H. Leon, Esq., who is giving up their cultivation in consequence of ill health.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Woodlands, Clarence Road, Clapham Park, S.W., on MONDAY and TUESDAY NEXT, November 17 and 18, at 12 o'Clock precisely each day, about 1400 ORCHIDS, amongst which will be found many rare Cypripediums, comprising C. Morganiæ, C. tonsum, C. œnanthum superbum, C. vexillarium, C. politum, C. Godseffianum, C. Io, C. Rothschildianum, C. Schroderæ, C. Arthurianum, and about 200 other varieties; also a quantity of Dendrobiums, comprising D. nobile Sanderianum, D. Leechianum, D. nobile nobilius, D. Ainsworthii, D. nobile album, and other kinds; together with a large and varied assortment of Cattleyas and Odontoglossums. A few STOVE and GREENHOUSE PLANTS, CHRYSANTHEMUMS, AZALEAS, CAMELLIAS and GARDEN UTENSILS.

May be viewed, Catalogues had of Mr. COOPER, the Gardener, on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.

10,000 LILIUM AURATUM.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, November 18, at half-past 12 o'Clock, 10,000 splendid Bulbs of LILIUM AURATUM, just received from Japan; also a large assortment of English-grown LILIES, embracing most of the best varieties in cultivation.

On view morning of Sale, and Catalogues had.

Leytonstone and Wanstead.

ABSOLUTE CLEARANCE SALE.

Land required for Building Purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The American Nurseries, adjoining Leytonstone Station, G. E. Ry., and also at the branch Nursery, Wanstead Flats, on TUESDAY, WEDNESDAY, and THURSDAY NEXT, November 18, 19, and 20, at 12 o'Clock precisely each day, the Second Portion of the valuable NURSERY STOCK, comprising 50,000 Evergreens, thousands of choice Coniferæ, 3000 finest Rhododendrons, 4000 Laurels, 2000 Retinospora plumosa aurea, Gold and Silver Hollies, Pines, thousands of Deciduous Shrubs, 8000 Standard and Dwarf Roses, selected Fruit Trees, thousands of Poplars, clean grown Limes, 1000 fine Planes for Street Planting, and numerous other Stock.

May be viewed any day (Sundays excepted) prior to the Sale. Catalogues had at the respective Nurseries, and at 67 and 68, Cheapside, E.C.

The WANSTEAD NURSERY is FOR DISPOSAL. Particulars may be had of the Auctioneers.

Wednesday Next.

SPIRÆA JAPONICA, AZALEAS, CAMELLIAS, and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, November 19, at half-past 11 o'Clock to the minute, AZALEA INDICA, A. MOLLIS, CAMELLIAS, PALMS, and other plants from the Continent; SPIRÆA JAPONICA, in splendid condition; STEPHANOTIS FLORIBUNDA, DUTCH BULBS, a fine selection of NARCISSUS from a private grower; HARDY BULBS, African TUBEROSES, just received in fine condition; and other BULBS.

On view morning of Sale, and Catalogues had.

Toddington, Winchcombe, Gloucester.

CLEARANCE SALE of NURSERY STOCK.

Important to Fruit Tree Buyers.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Toddington Orchard Company, Winchcombe, R.S.O., Gloucester, near to the Beckford Station, Great Western Ry., on THURSDAY and FRIDAY, November 20 and 21, at 12 o'Clock precisely, the valuable thriving NURSERY STOCK, comprising 1000 Mountain Ash, Wellingtonias, and Laurels; 3000 Box, a quantity of Yews, Poplars, Araucarias, and Laurustinus; 20,000 Fruit Trees, including 7000 Standard and Pyramid Apples, comprising 3000 Lord Suffield, a large number of Cox's Orange Pippin and Pomona, Warner's King, and others; 6000 Red Currants, Raby Castle, and various other Stock.

On view any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Friday Next.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 21, at half-past 12 o'Clock.

CATTLEYA GIGAS, var.

This splendid Cattleya is very variable and widely distributed in Colombia. Many magnificent and colossal varieties will, we are sure, be found in our last importations, and in none will be found more variety than in those we are now offering; which have been collected by an experienced geologist while prospecting in the unexplored districts of Antioquia. We are assured that as many as nine flowers have been observed growing upon a single spike, the colours varying from white to the deepest red, in all the intermediate shades. It was growing in company with the finest form of Cattleya chrysotoxa we have yet seen. The plants offered have been specially forwarded, and are in the fine t condition, with dormant eyes, and sound, plump, leafy bulbs. We have never received an importation in better condition, and buyers will find this a good opportunity.

Also an ANGRÆCUM, new species, imported by us from Madagascar. This beautiful ivory-white large-flowered species surpasses the noble Angræcum Ellisii in length of inflorescence and size of flowers, and is altogether a much handsomer plant. In growth it is more like a Renanthera, and consequently the flower spikes have a very pretty effect when hanging from the upper part of the plant.

EPIDENDRUM ATROPURPUREUM ALBUM and ROSEUM.

The finest white and rose forms from Tovar. This is a very widely distributed species, occurring in New Granada, Panama, Peru, and Venezuela; the very finest forms, however, came from Tovar, in the latter country. It is one of the showiest of our autumn and winter-flowering Orchids, lasting three months in blossom, added to which, it bears a delicious perfume.

There will also be included a nice lot of the rare and beautiful CYPRIPEDIUM ROTHSCHILDIANUM, in strong, healthy plants, from a recent importation.

CYPRIPEDIUM HAYNALDIANUM.

PHAIUS BICOLOR, now very scarce and rare.

CATTLEYA SUPERBA SPENDENS, finest dark-flowering varieties, in good healthy plants.

A small but good importation of the justly admired CATTLEYA CHRYSOTOXA, every plant being offered.

CYPRIPEDIUM INSIGNE, Sander's Ne Plus Ultra strain; marvellous varieties are continually cropping up from these late importations.

DENDROBIUM NOBILE, St. Albans varieties, whence so many of the grandest forms of this lovely Dendrobe have bloomed.

GLORIOSA SUPERBA, large sound tubers of this wonderfully curious and marvellously beautiful flowering plant; blooms are as large as Lilium speciosum, and deep orange-scarlet, yellow, and green in colour.

On view morning of Sale, and Catalogues had.

Merton Abbey.

CLEARANCE SALE of GLASS ERECTIONS, HOT-WATER PIPING, and BRICKWORK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Merton Abbey Nursery, Merton Abbey, Surrey, close to Merton Abbey Station, on MONDAY, November 24, at 12 o'Clock precisely, in consequence of the land being required immediately for building. The erections of 10 Large GREENHOUSES, 5000 feet of HOT-WATER PIPING, principally 4-inch Boilers, and many thousands of OLD BRICKS.

May be viewed. Catalogues had at The Grove Hotel, Merton; and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—Messrs. Protheroe & Morris will offer the above FREEHOLD BUILDING ESTATE, at the Auction Mart, London, on FRIDAY, November 28.

Leamington.

SALE OF WELL-GROWN NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Leamington Nursery, Leamington, on TUESDAY and WEDNESDAY, November 25 and 26, at 12 o'Clock precisely each day, by order of Mr. E. Perkins, a portion of the beautifully-grown NURSERY STOCK, comprising 2000 Coniferæ and other Shrubs, 2000 Hollies, 2000 Aucubas, 3000 Thuia Lobbi and Golden Yews, 1000 well-grown Cupressus Fraseri, a large quantity of Laurels, Yews, &c., and numerous other Stock.

On view any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Every Thursday.—Dutch Bulbs.

MESSRS. POPE AND SONS will SELL by AUCTION, at their Sale Rooms, 6, Phillips Street, Birmingham, on THURSDAY NEXT, and every THURSDAY throughout the season, at half-past 11 o'Clock A.M., large consignments of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland; also Roman HYACINTHS and Paper White NARCISSUS. Lotted to suit all buyers.

On view morning of Sale, and Catalogues had.

On WEDNESDAY and FRIDAY EVENINGS, at half-past 5 o'Clock, SALES of Choice CUT FLOWERS. Entries invited.

Nursery Stock Sales conducted and Valuations made.

Auction Rooms and Offices, 6, Phillips Street, Birmingham.

West Drayton, Middlesex.

Important Sale of fine healthy NURSERY STOCK.

MR. E. P. NEWMAN has been instructed by Messrs. J. Smith & Sons to SELL by AUCTION, in the Drayton Fields, on TUESDAY, November 18, at 10 for 11 o'Clock, about—

20,000 2, 3, and 4-year-old Standard and Half-standard APPLE, PEAR, PLUM, DAMSON, and CHERRY TREES; and about—

110,000 Red and Black CURRANT and GOOSEBERRY TREES, all of the very best kinds, and lotted to suit all buyers.

Catalogues of the Auctioneer, Uxbridge, Middlesex.

WANTED, established and sound GARDEN and FARM SEED BUSINESS in good locality. W. J. N., St. Catherines, Holwood Road, Bromley, Kent.

Essex.

FOR DISPOSAL, a Capital LEASEHOLD MARKET NURSERY, with 6 Glass Houses, Pits, and Dwelling Houses. Rent, £85. Price £600.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

FOR SALE, as a going concern, NURSERY and SEED BUSINESS (old-established).—For full particulars, apply, W. BENNETT, Accountant, Burton-on-Trent.

FOR SALE, a SEEDSMAN'S and CORN-DEALER'S SUNDRIES BUSINESS. Twenty miles from London. Splendid Surrey town—100,000 population. Handsome Shop, comfortable home; good Trade, and rapidly increasing. Price only £250 for Lease, Goodwill and Plant. Stock at valuation. Satisfactory reasons for leaving. Safe, comfortable living. Splendid opportunity for young beginner. FLORA, Box 203, Willing's Advertising Offices, 125, Strand, W.C.

To Landscape Gardeners, Builders, or Private Buyers.

TO BE SOLD, a bargain, remaining Stock of ORNAMENTAL FIGURES, VASES, and FOUNTAIN RIMS and ROCKWORK; also two colossal FIGURES suitable for Large Halls, and some excellent MOULDS.

Apply to W. MANSELL, Builder, 22, Bridge Road, Hammersmith, W.

TO BE DISPOSED OF, a FLORIST'S, with good JOBBING BUSINESS. First-class position, with Greenhouse, &c.—Apply, A. B., 44, Evering Road, Stoke Newington, N.

Excellent opening for a Florist and Seedsman in Aberdeen.

THE TRUSTEE on the Sequestrated Estate of Messrs. Strachan and Thomson, florists and seedsmen, in Aberdeen, invites offers for the STOCK IN-TRADE and GOODWILL of the BUSINESS carried on by the firm.

A valuation of the Stock, &c., may be seen in the hands of Mr. J. M. FERGUSON, solicitor, 35A, Union Street, Aberdeen, who will give all particulars, and receive offers up to the 19th inst.

LAND for HORTICULTURISTS.

TO BE LET, on specially favourable long leases.

TO BE SOLD, on liberal system of deferred payments.

TO BE SOLD forthwith, 3-4ths price remaining at 4 per cent.

Excellent for soil, water, and railway.

Apply to Mr. F. J. CULLIS, F.G.S., Marling Park Estate, Hampton-on-Thames.

TO BE LET, 1 to 10 acres of GRASS LAND, suitable for Nurserymen and others, on Lease for seven, fourteen, or twenty-one years. Rent from £8 to £12 per acre, with the option of purchasing the freehold within the first seven years. No tithe. Near the main road, Enfield Highway, about 9 miles from London.

Apply H. MOORE, 59, Bishopsgate Street Within, E.C.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Landscape Gardening.

MR. ARTHUR M. KETTLEWELL, LANDSCAPE GARDENER, having great experience in all matters pertaining to the artistic arrangement or re-arrangement of Grounds, IS READY TO UNDERTAKE the Designing and Laying-out of Private or Public Gardens, Parks, Cemeteries, &c. Send for his Manual on the "Art of Landscape Gardening," excellently reviewed by nearly all the leading Gardening Papers, post-free, 7d.

Address, Titley House, Titley (R.S.O.), Herefordshire.

ORCHIDS.

BRAZILIAN ORCHIDS supplied to the Trade in large or small quantities.

CATALOGUES and particulars on application.

A. H. GRIMSDITCH (Importer), 5, Clayton Square, Liverpool.

Sole Agent for CARLOS TRAVASSOS, Rio de Janeiro.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

NEW DESCRIPTIVE PRICED CATALOGUE

Post-free on application to

THE VINEYARD AND NURSERIES,

GARSTON, near LIVERPOOL.

CHARMING CHRISTMAS FLOWERS.—JAMES CARTER AND CO. have a magnificent stock of CHRISTMAS ROSES, now showing from ten to twenty grand buds, for immediate blooming. They are grown by one of the best cultivators in the kingdom, and are sure to give unqualified satisfaction. Finest clumps, price 2*s.* 6*d.* each, 24*s.* per dozen. Good clumps, price 1*s.* each, 10*s.* 6*d.* per dozen. Sent carriage free by rail or parcel post at our option.

CARTERS', Seedsmen by Royal Warrant to H M the Queen and H R.H. the Prince of Wales, 237 and 238, High Holborn, London, W.C.

J. LITTON, Barrowcastle Gardens, Englishcombe, Bath, has about 50 fine healthy pots of EUCHARIS LILIES for Sale.

ANTHONY WATERER invites from intending Planters an inspection of the following well-grown and finely-rooted EVERGREENS:—

ABIES CANADENSIS (Hemlock Spruce), 5 to 8 feet.
,, DOUGLASII, 6 to 12 feet.
,, ,, GLAUCA, 5 to 7 feet.
,, HOOKERIANA (Pattoniana), 3 to 4 feet.
CEDRUS ATLANTICA, 4 to 7 feet.
,, ,, GLAUCA, 3 to 6 feet.
,, LEBANI (Cedar of Lebanon), 4 to 9 feet.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 4 to 8 feet.
,, ,, LUTEA (Golden), 3 to 6 feet.
JUNIPERUS CHINENSIS AUREA (Golden Chinese Juniper), 3 to 8 feet.
PICEA CONCOLOR, 3 to 7 feet.
,, GRANDIS, 5 to 8 feet.
,, LASIOCARPA, 4 to 8 feet.
,, MAGNIFICA, 3 to 5 feet.
,, PUNGENS, 1½ to 4 feet.
,, ,, GLAUCA (Blue Spruce), 1½ to 4 feet.
PINUS AUSTRIACA, 3 to 7 feet; P. LARICIO, 3 to 4 feet.
RHODODENDRONS, from 3 to 8 feet.
THUIOPSIS BOREALIS, 4 to 6 feet.
,, DOLABRATA and VARIEGATA, 3 to 7 feet.
THUIA LOBBII (gigantea), 5 to 7 feet.
,, OCCIDENTALIS LUTEA (Golden), 3 to 5 feet.
,, WARREANA, 3 to 4 feet, and 8 to 9 feet.
WELLINGTONIA GIGANTEA, 3 to 4 feet.
YEWS, Common, 3, 4, and 5 feet.
,, Golden, of all sizes up to 10 feet, in various forms, Pyramids, Globes, and Standards, in point of variety, size, and quantity unequalled.
,, Golden Seedlings, 3, 4, to 8 feet.
,, Irish, 5 to 10 feet.
,, ,, Golden, 3 to 6 feet.
AUCUBA JAPONICA, 2½ to 4 feet.
BAMBUSA METAKE, fine clumps, 4 to 7 feet.
BOX, Green and Variegated, 3, 4, 5, and 8 feet.
HOLLIES, Common, from 3 to 10 feet.
,, ALTACLERENSE,
,, HODGINS or NOBILIS,
,, LAURIFOLIA,
,, MYRTIFOLIA,
,, SCOTTICA,
} 3, 4, 5, up to 10 feet.
,, Yellow berried, and other sorts
,, Variegated, of sorts, 3, 5, to 10 feet.
,, Golden Queen, 4, 5, up to 10 feet.
,, Silver Queen, 4, 5, up to 10 feet.
,, Weeping Perry's (Silver Variegated), on straight stems, with heads of 10 to 15 years' growth.
,, New Golden Weeping.

Knap Hill Nursery, Woking, Surrey.

Rhododendrons cheaper than ever.

Over 30 Acres for Sale.

ISAAC MATTHEWS AND SON have to offer over 100,000 White, 100,000 Scarlet, in variety. Plants fit for immediate forcing. The above are all freely set with bloom buds, and are in the most healthy condition. We also have a very extensive stock of HYBRID and PONTACOMS from Seed, and can be had in all sizes, varying from 6 inches up to 4 feet, in any quantity, HOLLIES, AUCUBAS, YEWS, CONIFERS, THORN QUICK, Scotch SPRUCE, LARCH, ELM, ASH, ALDER, BIRCH, and all other General Nursery Stock in abundance. For Price LIST, &c., apply to—

ISAAC MATTHEWS AND SON, The Nurseries, Milton, Stoke-on-Trent. Our Nursery is very extensive and the Stock good.

To Nurserymen, Builders, Local Boards, Vestries, and others who intend planting Trees and Shrubs this season.

ROBERT NEAL, The Nurseries, Trinity Road, Wandsworth, S.W., begs to offer an extensive stock of FOREST and ORNAMENTAL TREES, SHRUBS, ROSES, GRAPE VINES, FRUIT TREES, CLIMBING PLANTS, &c., which being grown in the neighbourhood of London, are especially suitable for town planting. Also a large stock of extra fine SEAKALE and RHUBARB for forcing, sample and price of Seakale sent by post if desired; descriptive CATALOGUE free.

FERNS! FERNS!! FERNS!!!—Cheap Trade offer in 25 most saleable sorts, stove and greenhouse, 12*s.* per 100; from stores, 6*s.* per 100, 50*s.* per 1000. Terra-cotta Baskets, 2*s.* doz.; Stumps and Vases, 1*s.* 6*d.* doz., for showhouse, bazaars, &c., packed free. Cash with order.

J. SMITH, London Fern Nursery, Loughboro' Junction, S.W.

MASSES OF SPRING FLOWERS.

CARTERS' CHEAP BULBS.

For the Bordering of Carriage Drives, or for Naturalisation in Parks, Promenades, Woods, Meadows, and Pleasure Grounds, or for bare spaces, where the more delicate varieties will not flourish, these now offered will bloom profusely, and produce a charming effect in the early Spring Months.

PHEASANT'S EYE (or Poet's Eye) NARCISS. Admirably adapted for the decoration of Vases, or as a Button-hole Flower.

Price 120s. per 10 000; 14s. per 1000.

BIFLORUS (Twin-flowered) NARCISS.

Price 150s. per 10,000; 16s. per 1000.

MIXED ENGLISH NARCISS and DAFFODILS. Grand Bulbs, embracing Sweet-scented Double White, Poeticus, Biflorus, Double Daffodils, Single Daffodils, Incomparabilis, &c.

Price 160s. per 10,000; 18s. per 1000.

DOUBLE WHITE SWEET-SCENTED (Gardenia-flowered) NARCISS. Strong flowering roots.

Price 250s. per 10,000; 28s. per 1000.

DOUBLE YELLOW DAFFODILS.

Price 35s. per 1000; 4s. per 100.

BLUE BELLS.

Indigenous in some districts, but little known in others.

Price 120s. per 10,000; 14s. per 1000.

CARRIAGE FREE. Net Cash with order.

ROYAL SEEDSMEN BY SEALED WARRANTS,

237 & 238, HIGH HOLBORN, LONDON.

MARLY LILAC.—Most sought after for Forcing. Immense stock. Extra number of buds.

VIBURNUM OPULUS | CHIONANTHUS
ANDROMEDA JAPONICA | DEUTZIA GRACILIS

Splendid collection of trained FRUIT TREES.

CATALOGUES on application.

CROUX ET FILS, Nurserymen, Le Val d'Aulnay, près Sceaux, Seine, France.

CHRYSANTHEMUM CUTTINGS.

WE have always refrained from competition in order to devote all our time and attention to the production of best healthy stock, and to enable our customers to succeed year by year, we have specially grown and so prepared our stock to attain the greatest possible perfection. All exhibitors of plants know it is of the utmost importance to commence with all the vigour and health obtainable, and to ensure this we have grown a complete stock of large plants in the open, and cut down early in October, in order that they should yield strong, sturdy, early, healthy cuttings, and not exhausted of their colour, &c., or overfed and sickly, as on the ordinary system when huddled close together for weeks in comparative darkness. Those we now offer are clean country-grown, and from the first placed close against the glass, having all the possible light, thus enabling us to supply such quality cuttings as never before offered. We also have an immense quantity of plants specially grown for immediate exportation safely to any part of the world.

Send for our SPECIAL CATALOGUE of the whole family. Sent post free.

H. CANNELL & SONS,

SWANLEY, KENT.

LILIUM HARRISII.

SPECIAL OFFER.

Beautiful large, pure white, trumpet shaped flowers; deliciously fragrant. The finest variety for pot culture or early forcing. Potted now, may be had well in bloom at Easter.

FINE STRONG BULBS, fresh imported, 6*s.* per dozen, 40*s.* per 100.

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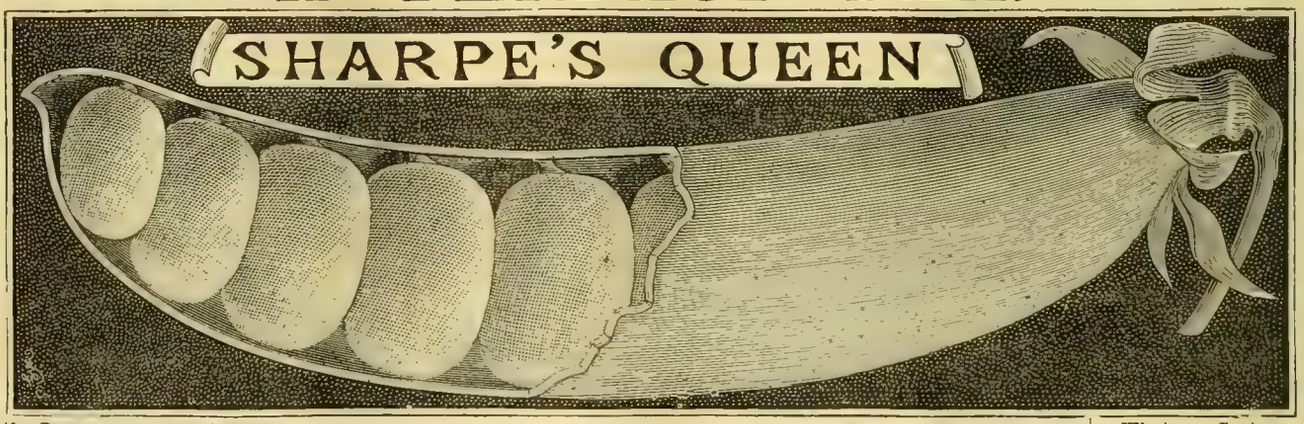
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Gardeners' Magazine, Sept. 6, 1890.—"Sharpe's Queen Pea, in a fresh green state for the market or the table, on the 3rd of September, is an interesting subject. The samples sent, of excellent quality, were from a sowing made the second week in May. The pods are long, packing close, and carrying well. The Peas are of full average size, and of a full green colour. Such a Pea SHOULD MEET WITH UNIVERSAL FAVOUR."

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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 15, 1890.

LATHOM HOUSE.

A STRANGER looking, as I did, for the first time on Lathom House and its park, in approaching the spot from the railway station, with two Lancashire friends showing me the lions of their county, will probably remember that a long and interesting history attaches to it. In brief, it is as follows: Orm, the Saxon, originally possessed the estate, and founded the adjacent town of Ormskirk. Afterwards, Sir Robert de Lathom's son married the daughter of Sir Thomas de Knowsley, and then came upon the scene the great family of Stanley, who owned Lathom 300 years, and made Lathom House their chief residence. Sir J. B. Burke, the genealogist, says:—"While the Stanleys held Lathom, it surpassed, for magnificence and hospitality, all the residences of the North, assuming, in these respects, the attitude of a royal court." "God save the Earl of Derby and the King," was a harmless inversion of words common in the country for generations. The weekly consumption of the Earl's great household in the sixteenth century was an ox and twenty sheep, fifteen hogsheads of beer, besides large supplies of venison from the park, game from the woods, and fish from the ponds. The first peer of the family was Sir Thomas Stanley, "Chief Governor of Ireland," who was called to Parliament as Lord Stanley in 1456. His son, the first Earl of Derby, married Margaret Beaufort, the wife of Owen Tudor, and readers of Shakespeare will remember that he crowned Henry VII., his stepson, on the battle-field of Bosworth. The same king, having executed Sir William Stanley, the earl's brother, on a charge of treason, afterwards paid a visit to Lathom, and was conducted over the house and up to the leads to see the country. While he was standing on the edge of the roof at a dizzy height, the fool of the household stepped up to the earl and said, pointing to the unguarded precipice, "Tom remember Will." The story runs that the king was so alarmed at this hint, that he hurried down the stairs and left the house.

The great event connected with this moated fortress, for such it was, was its siege in 1644 by the Parliamentary forces, who lost 500 men before its walls, the garrison under the spirited Countess of Derby losing only six men. After the execution of the Earl at Bolton for loyalty to the royal cause, Lathom House was again besieged, the garrison overcome through failure of supplies, the house destroyed, and its materials sold. Not a vestige now remains of the Lathom House which Generals Fairfax and Egerton surrounded with their batteries. The modern house, a very fine one, was commenced by the ninth Earl of Derby, and completed in the last century by a new possessor. It now belongs to the Earl of Lathom, who is known in agricultural circles for his famous herd of Shorthorns.

We entered the park by a footway, passing some almshouses, standing on the site of a chantry founded in 1500 by the second Earl of Derby, and forming now the sole memorial of the Stanleys in the neighbourhood of their former residence. All is changed, and handsome and substantial as is the modern aspect of the place, none of the appendages to baronial state remains. One looks in vain for old gateways or ruined walls, or any vestige of mediæval ages. The main block of the compact house, which has replaced the fortified hall of the seventeenth century, is connected by corridors with two wings, giving the north front a very imposing appearance. The main entrance opening into the grand hall is reached by a handsome flight of steps. The south front immediately opposite, also has a door reached by a similar flight of steps leading from the garden to the private apartments.

THE GARDENS, ETC.

The surroundings of the house are delightful, the garden as well as the gardening being excellent. The flatness of the park is the fault of the place, and that defect, no doubt, induced the architect, with much good sense to lift the best rooms many feet above the ground, as already noticed, affording them good views across the park and the country beyond, with the Pennine chain of hills on the south-east.

The shrubbery is admirably planted with trees that suit the soil, and as this is not of very great depth, the shallow-rooting Beech was wisely introduced. Planes, Tulip-trees, and wide-spread Oaks all grow in the shrubbery, with wide breadths of grass between them, so that their beauty is not concealed by crowding. The trees have been allowed to take their natural shape without the mutilation by cattle to which park timber subject. Nearly all these protected trees, separated from the park as they are by a ha-ha fence, droop their branches on the ground in a very majestic manner. It must be confessed that the trees outside the ha-ha, are noble and beautiful objects. But as barons, in the peerage, are known as noble, and marquises as most noble, so we have on this and that side of the fence, two degrees of nobility among the timber trees, and those on the wide lawn east of the house and along the outer walk next the park are marquises, compared with the barons outside. A clump of Limes, with branches prone on the ground, is a particularly good example of the beauty of trees that are branched to the ground. The most conspicuous shrubs are Rhododendrons, in frequent clumps. I could not ascertain the area of the dressed ground lying immediately around the house; it is not very extensive, as there is none in the north front, where the park reaches to the house, and that on the south is confined to a good big lawn and flower garden. In the absence of Mr. Hathaway, the head gardener, his foreman estimated the dressed ground at a mile in circumference. The conservatory at the south-east corner of the house contains fine specimens of the old double-white Camellia, Dicksonia antarctica, and Thrinax elegans. The flower beds filling the space in front of the house, and flanked by some of the superb specimens of trees I have mentioned, are laid out with great taste. The decoration of a narrow strip of grass under the windows and between the wall of the building and a gravel walk, has been exceedingly well managed. The varieties of the bedding plants are too numerous to be named, but the plan has been to use only small subjects, or those which could easily be kept small, such as Echeverias—including a seedling raised here, Saxifragas, Iresine, Lobelia, and Pyrethrum and many others, planted in geometric style, and forming an appropriate fringe at the base of the building.

The kitchen gardening department is very thoroughly carried out. There are five vineries, two Fig-houses, two stoves, two greenhouses, two Peach-houses, three Orchid-houses, and a Palm-stove. One of the vineries has been retained out of respect for the massive stem of an old Vine, which flourished in it 200 years ago, and which must therefore have been planted soon after the destruction of old Lathom House. The soil of the kitchen garden is light, and one of the borders, having a particularly warm and deep soil, through which the rain-water passes freely, has ripened crops of several kinds of Peaches, even in this inclement season. In the first week in August, the Princess of Wales, then ripe, weighed 6 to 8 oz. Other sorts coming on were Barrington, Admirable, Early Alfred, and Bellegarde. Such a wall, I was told, would hardly be found elsewhere in Lancashire. In the Orchid-house was pointed out a fine specimen of Cœlogyne cristata, 4 feet through. The Cattleyas were just over. Oncidium macranthum was in great beauty, with a blossoming raceme 8 feet in length. The collection of Calanthe Veitchi is a large one, and a credit to Lathom; a pot of this species took the first prize at the Liverpool Show last autumn. I noticed many bulbs 13 inches long. There is also a large collection of Calanthe vestita rubra. Chrysanthemums are in force here, and most of the new sorts are among them. Bouvardias are good. Another class of plants, for which the county is famous, must not be overlooked, I mean the Gooseberries and all kinds of Currants, both on walls and in great beds as standards. Among Onions, Ailsa Craig has been a great success, and the Anglo-Spanish is excellent.

The centre bed in the largest stove is occupied by several handsome specimens of Latania borbonica, and other palms. In the same house were Phormium tenax variegata in blossom, many Caladiums, and a house full of good things whose names I did not note down, having friends with me whose kindness might have been abused. There are many acres of kitchen garden within walls, and the staff of gardeners consists of eighteen men. The head gardener bears a name of great interest. All the world knows that Shakespeare married Ann Hathaway, and as Mr. Hathaway is a native of the village of Alderminster, near Stratford-on-Avon, it is probable that he belongs to the same family as the wife of the greatest of our poets. *H. E.*

Clematis patens var. "Vesta" is recommended in the *Gartenflora*, where a coloured figure is given at t. 1334, as a good plant for furnishing cut flowers in the winter months.

New or Noteworthy Plants.

ONCIDIUM LEOPOLDIANUM, *Rolfe, n.sp.**

This is a noble and very handsome Oncidium which has recently been introduced by Messrs. Linden, L'Horticulture Internationale, Parc Leopold, Brussels, from some part of the Andes. It belongs to the Cyrtochilum section, and will stand near O. corynephorum, Lindl. The peduncle is said to attain a length of several mètres, and to bear as many as 300 flowers. Two branches of the panicle with fourteen dried flowers are before me, with a sketch in water-colours made by the collector. The dried flowers measure 1⅝ inches across in their broadest diameter, and the colours, as represented in the sketch, are very attractive. The sepals and petals are white, each with a large purple disc, the lip violet-purple, with the disc and part of the column yellow. Although changed in drying, these colours are still evident in the dried specimens. Living plants are also introduced, but they have not yet flowered in Europe. When it becomes established in cultivation it will be a great acquisition, on account of its large panicle of flowers, and the contrast of colour it presents to so many other Oncidiums. It is dedicated to His Majesty Leopold II., King of the Belgians. O. corynephorum Lindl., its nearest ally, is readily distinguished by its broadly rounded lip, and other characters. It is somewhat curious that the last-named plant, which evidently possesses similar colours, should not have been introduced to cultivation. The reason may be that species of this section are notoriously difficult to import alive, and have only become common during a comparatively recent period. Several other fine species yet remain to be introduced. *R. A. Rolfe.*

TUBEROSES.

For early spring bloom, the bulbs require both top and bottom-heat, but for the autumn supply they are simply grown cool in a frame, plenty of water being afforded them when the pots become full of roots. I saw many hundreds of Tuberoses the other day, and all of these plants had spikes of bloom in various degrees of development. The bulbs were potted in March last, and had received no heat whatever, but were given one good watering to settle the soil after potting them, and kept close for a time. No more water was afforded till the bulbs began to root freely. As the summer advanced, the frame-lights were taken off, and occasionally liquid manure was given the plants. About the middle of the month of October the lights were replaced, the forwardest bulbs being taken into the forcing houses from time to time, so as to open their flowers more perfectly than they could in the frame. Tuberoses also do well in the warmer parts of the country if potted in the spring, and plunged in the soil on a south border, taking them indoors early in the autumn. I have tried planting the bulbs in the open, lifting them in September. This method succeeds fairly, and gives the least trouble. Liquid manure increases the size of the blooms and length of the spike, and a suitable soil for them is one consisting of good loam, rotten dung, and the potting done very firmly. When planted out, Tuberoses make stocky growth. For the first lot the bulbs which come from Africa are the best, and for summer or autumn bloom the American Pearl is

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* *Oncidiam Leopoldianum*, n. sp.—Vegetative organs not seen. Panicle very long, branching, many-flowered. Bracts connivent, broadly ovate, acute, 3 to 4 lines long. Flowers about 1¾ inch in diameter. Sepals very shortly unguiculate, the dorsal one broadly elliptical, obtuse, 5 lines across, the lateral ones elliptical-ovate, obtuse, 6 lines across. Petals elliptical-ovate, subacute, a little shorter and narrower than the lateral sepals. Lip fleshy, trulliform, slightly three-lobed, subacute, the basal lobes rounded, 7 lines long, 4 to 5 line broad at base, crest consisting of three short fleshy parallel plates, the central one being higher than the others. Column short, wings fleshy and rounded. Sepals and petals white, with purple disk; lip violet-purple, with crest and part of the column yellow. *R. A. Rolfe.*

suitable. The trade makes selections of the Pearl, and one that is grown largely by market men is an improvement on Pearl, it carrying a very large flower-spike, and larger flowers than others.

The African Tuberose has large roots, and reaches us earlier in the season than the other. By successional potting of these two varieties, blooms may be had almost the year throughout. For the early supply, the bulbs should be secured as soon as they arrive, and potted singly in 48's, a few ¼-inch bones being employed instead of crocks for drainage. If pots of Tuberoses are wanted to place in vases, three bulbs in a 32 is a good way of growing them. For forcing, the smaller pots are best. For early work place the pots close together on bottom heat of 60° to 70°, and water sparingly, or not at all, till the leaf appears, and then gradually increase the quantity. Keep the plants with their leaves almost touching the glass. The American bulbs may be potted in December and later, and they require the same kind of treatment as the above. The last bulbs may be potted in the month of April, or planted out in May when the soil is getting warm, or the bulbs may be started in boxes and planted after they have started naturally; this being better than keeping them out of the soil after April. *G. Wythes, Syon House, W.*

PINUS PONDEROSA.*

The Yellow Pine of the Californian settlers, was discovered by Douglas in 1827, and introduced to Europe by him through the Horticultural Society. It is the most widely distributed of the Californian and Oregon Pines, extending from the mountains of New Mexico to Colombia, and from the Coast to the Rocky Mountains, where it reaches nearly to the line of perpetual snow. Together with the nearly allied P. Jeffreyi, it forms the greater part of the noble forests of the Sierras. It is a stately tree, hardly less in stature than the Sugar Pine (P. Lambertiana). Its trunk attains a height of 150 to 200, and even 300 feet, and a diameter, at 3 feet from the ground, of 6 to 7 feet; the shaft is unbranched for a third or more of its height, and then breaks up into a regular, oblong, columnar head, as may be seen in the illustration (fig. 110). The leaves are in groups of three, each 4 to 10 inches in length, and radiating in tufts from the ends of the branches. The colour is described as a dark yellow-green, but in this country the yellow tinge is not so perceptible. The successive appearance and decadence of clusters of leaves gives, says Dr. Newberry, the smaller branches a beaded character, which distinguishes this from other western Pines.

The cones (fig. 114) are from 3 to 6 inches long, ovoid, the bosses of the scales bearing small acute recurved spines. The cones grow singly, or in clusters of two to four at the extremity of the small branches, and are not pendent. The bark is cork-coloured or yellowish-brown internally, and divided into large plates or flakes 4 to 8 inches in breadth, and which are flat and smooth, and enable the botanist to distinguish the tree at a considerable distance. The wood is highly resinous, heavy, brittle, but the sap-wood is very thin in proportion to the heart-wood, and consequently the timber is of very great value, although inferior to that of the Sugar Pine (Lambertiana).

The seedling plants are robust, with a strong root-system branching from the base, and the primary stem, already in the second year, showing indications of the columnar trunk it is destined hereafter to form, while the tufted primordial leaves suggest a possible ancestor in the humble Isoetes. The primordial stem is covered on all sides with alternate, linear, sharply-pointed leaves about 1½ inch long, serrated at the edges.



Fig. 110.—Pinus ponderosa, showing the habit of the tree.

In the second biennial Report of the California State Board of Forestry, Mr. J. G. Lemmon classes this Pine with P. Jeffreyi, under his section of "Broken-cone" Pines, owing to the peculiarity the cones possess of breaking off when ripe near to but not quite at the base, so that a few scales are left on the bough, while the bulk of the cone falls to the ground. In a fine tree growing in Slocock's nursery at Woking, this characteristic is very apparent, and is represented in our illustration at p. 561. The individual scales are provided with a short stalk, which is flattened at right angles to the expanded part of the scale like the petiole of the Aspen, and the detachment of the scales is probably connected with this peculiarity.

Occurring over such a vast extent of country, and at such different elevations and aspects, it is not wonderful that many variations occur, some of which have been classed as distinct species. Among them is var. Benthamiana, a medium-sized tree, a discovery of Hartweg's in 1846, and of which there is a fine specimen at Orwell Park, near Ipswich.

The var. brachyptera is a variety which occurs abundantly in the great volcanic plateau of Arizona and New Mexico.

A third variety is the var. scopulorum, a small spire-shaped tree, not attaining more than 50 feet in height, found in the Rocky Mountains, and often bearing its leaves in pairs instead of in threes. It is the principal timber tree of the Rocky Mountains, one of the hardiest of Conifers, and as an ornamental tree it is said to be superior to the type.

This is probably the variety figured in our columns on June 22, 1878, by Sir Joseph Hooker. A weeping variety, grown in Massachusetts, from seeds raised at Knap Hill, Woking, was figured and described in our columns on August 24, 1878, by Mr. H. Winthrop Sargent.

P. Jeffreyi, at one time considered to be a form of ponderosa, is now kept distinct by Mr. Lemmon and others who have studied the trees in their native habitat. Certainly, in English plantations P. Jeffreyi, which is limited to the Sierras, is very distinct in its glaucous shoots, lemon-like fragrance, and, as may be inferred from the figure of the large blackish cones sent us by Lord Ducie, from Tortworth (fig. 68, Mar. 23, 1889). The head, says Mr. Lemmon, is large and rounded, limbs long, the bark coarse and reddish.

"I have often feasted," says Mr. Muir, referring to P. ponderosa and Jeffreyi, "on the beauty of these noble trees when they were towering in all their winter grandeur laden with snow; in summer, too, when the brown staminate clusters hang thick among the shimmering needles, and the big purple burrs are ripening in the mellow light; but it is during cloudless wind-storms that these colossal Pines are most impressively beautiful; then they bow like Willows, their leaves streaming forward all in one direction, and when the sun shines upon them at the required angle, entire groves glow as if every leaf were burnished silver. . . . This species also gives forth the finest music to the wind. After listening to it in all kinds of wind, night and day, season after season, I think I could approximate to my position on the mountain by this Pine-music alone. If you would catch the tones of separate needles, climb a tree. They are well-tempered, and give forth no uncertain sound, each standing out, with no interference excepting during heavy gales; then you may detect the click of one needle upon another, readily distinguishable from their free wing-like hum. Some idea of their temper may be drawn from the fact that, notwithstanding they are so long, the vibrations that give rise to the peculiar shimmering of the light are made at the rate of about 250 per minute."

Our illustrations represent a tree of the typical form growing on Mount Shasta, which shows its

* P. ponderosa, Douglas, in *Companion to Botanical Magazine*, ii., iii.; Parlatore, in *D.C. Prod.*, xvi., ii., 395 (1868), (excl. P. Sinclairii); Engelmann, in *Bot. California*, ii., 125; Lemmon, *Second Biennial Report California State Board of Forestry* (1888), *Supplement* (1889), p. 6; Fowler, in *Gard. Chron.* 1872, 1326; Coulter, *Manual of Botany of Rocky Mountains*, 1885, p. 432; Veitch, *Manual* (1881), p. 167. For full bibliography up to 1884, see Sargent, *Forest Trees of North America*, p. 192.

Figures.—Loudon, *Arboretum*, iv., f. 2132 to 2136; Forbes, *Pinetum Woburnense*, 44, t. 15; Antoine, *Conif.* 28, t. 8; Newberry, in *Pacific R. R. Report*, vi., 36; 90, t. 4, f. 12; J. D. Hooker, in *Gard. Chron.* 1878, June 22, pp. 796 and 801.

Synonyms:—
P. Benthamiana, Hartweg; Gordon, in *Journ. Hort. Soc.*, iv. (1849), fig. 212.
P. resinosa, Torrey.
P. brachyptera, Engelmann.
P. Beardlevi, Murray.
P. Craigana, Murray.
P. macrophylla (?), Torrey.
P. Engelmanni, Torrey.
P. Parryana, Gordon, not Engelmann.

noble habit. This is copied from Mr. Lemmon's Report above mentioned. The foliage and cones are represented from a fine specimen in Mr. Slocock's nursery at Woking. The outline in Loudon's *Arboretum* shows a deformed and abortive cone, and no other figure readily accessible to English readers exists. Our figure (fig. 111, p. 561) is the only one in which the peculiar shape of the stalked scales and the curious mode of detachment at the base of the cone is shown. The section of the leaf (fig. 115) shows a boat-shaped outline raised in the centre, with two layers of hypoderm, numerous resin canals in the texture of the leaf, each surrounded by strengthening cells, and in the centre a double vascular bundle, surrounded by an elliptical endoderm, or bundle-sheath.

We should gladly receive any particulars relating to the rate of growth and value of the timber of this and other species grown in our British plantations. *M. T. M.*

ORNITHOLOGY IN RELATION TO AGRICULTURE AND HORTICULTURE.

(*Continued from p.* 510.)

Hawks, etc.

As the ebbing tides leave a dreary waste of sand in the Severn estuary, a stray Peregrine falcon (*Falco peregrinus*, Tunstall) may be seen in pursuit of the dunlin or kindred sea birds. It may be that a noble fellow with flashing eyes rests on some protruding pile, sweeping the horizon with restless action, or perhaps it is sluggish or gorged with a recent meal, and the breast is stained with the blood of a victim. But it also roves inland in search of food. At a pheasant breeding establishment in the west, where the birds had to be carefully protected with wire netting, the peregrines occasionally made most determined attacks, several having been shot in self defence by the proprietor, who was himself a skilled naturalist, and reluctant to do the deed. A trained bird will, of course, swoop down upon her, but the wild peregrine hesitates before so large a prey. Once it was the fortune of the writer to watch through a telescope the undecided movements of the falcon, where no less than thirteen herons waded knee deep in the stream in furtherance of their fishing avocations. Gleaming silvery blue in the sun's slanting rays, the stately herons looked askance at the solitary enemy, standing motionless to note his action. *L'union fait la force*, he evidently thought, for—like the Levite—he passed by on the other side. Game of all kinds the peregrine will attack; therefore the keepers slay them, and few only are left.

The little Merlin (*Falco æsolon*, Tunstall) is a favourite hawk with sporting men, if only for the plucky spirit it shows in attacking quarry as large and powerful as itself. For this same reason, however, it must be considered, and little mercy it can expect from those who rear game. A favourite food of the merlin appears to be snipe, the tricking flight of which it evinces great dexterity in following. Pigeons are also esteemed by this—the smallest of British hawks; and if it could be trained solely to kill the wood pigeons it might be accounted as useful to those who grow beans and peas.

The Golden Eagle (*Aquila crysætus*, L.) is rare enough; but the few which remain will assuredly vanish, for the shepherds on the wild moors and among the Highland crags know full well that as long as the powerful bird exists in a locality where lambs are reared, the tender-aged animals are in danger of sudden attack from the cruel talons of the bird. Not much more than a year ago a pair of golden eagles appeared as far south as Kent, palpably bent on a lamb-stealing raid. Needless to add that one or both were quickly destroyed.

The Sea-eagle (*Haliætus albicilla*, L.) usually keeps to its eyrie home amid the precipitous cliffs of the coast, troubling few by its occasional migrations inland.

The Osprey (Pandion haliætus, L.) feeds almost exclusively on fish when in journeys southwards to the English shores, estuaries, and rivers. It does no harm in any direction, and the inevitable killing of each stray visitor is a matter of regret amongst ornithologists.

It is admitted that many of the Falconidæ are destructive to game preservers, and it is undoubtedly to their special interest to kill many kinds of hawks. It is obvious to all, however, that a wise discrimination should be exercised in the matter, and a few of the rarer species should surely be protected rather than extirminated. In no case, unless it be that of the golden eagle, can any member of the Falconidæ be adjudged prejudicial to the farmer's interest; on the other hand, in the cases of the kestrel and the hobby, they are distinctly beneficial; they deserve to be befriended rather than hunted out of all existence in the country, and we offer a strong plea on their behalf to all that it may concern.

It has lately been stated by Lord Lilford that an owl is capable of swallowing nine field mice one after another until the tail of the last remains in evidence that the bird is incapable of further effort. Four hours later the same owl has digested the meal, and is ready for four more mice. Let us apply this experience for a moment to the case of kestrel hawks. If a pair is left unmolested during the breeding season, from four to six young birds will be successfully reared, all requiring constant supplies of food, and soon ready to forage on their own account. The old birds, at a very moderate estimate, will consume a dozen mice each during a single day; and within a fortnight the fledglings will devour a similar quantity. In a month's time there will be eight voracious hawks roaming over the corn lands and fields, killing their hundred rodents a day, each one capable of considerable destruction amongst the grain and roots. In three months, the single colony of hawks will thus rid the land of upwards of 10,000 vermin, and will yet remain unsatiated. Apply this calculation to the country at large, and it is at once patent how extensive are the operations of the kestrels, and how beneficial they are to agriculturists. And this is the very bird which the heedless keepers are decimating in every direction; all hawks to them are the same, for they cannot discern between good and bad kinds of birds—even from the game-preserving point of view. *C. Parkinson.*

Owls.

A "Saturday Reviewer," reviewing a book by the present writer, recently made the following general invitation:—"Owls."—Will no one explain to the whole generation of gamekeepers what a stupid and aimless crime is the wholesale persecution of these most pleasing birds? The barn-owl was the best friend of the farmer—a bird of business, who hid in his own pollard all day long, and kept other people's rats under by night. Now a false economy has doomed both owl and pollard to destruction, and the farmer wonders why he is overrun by rats.

As this general contention is perfectly true, and as I have been honoured by a special retainer on behalf of the owls, I will endeavour to set down these winged mousers in their true light. In many instances the economy of birds in relation to agriculture is difficult to determine, but no such difficulty exists with regard to owls. Procuring their prey at twilight and dusk, they have but few hours wherein to hunt. This being so, they are in the habit of swallowing their food whole. Now the indigestible portions — bones, fur, feathers — are ejected in the form of pellets, and by a careful analysis of these we get an infallible return of what the bird has fed upon. Of these the writer has examined hundreds—I might almost say thousands—and always with the same result: rats, mice, voles, shrews, beetles, and occasionally birds. I once found no less than seventeen recently-killed short-tailed field mice on the side of a barn-owl's nest containing five young ones. The time was a warm evening in June, and I believe the parent birds had only been hunting about an hour. But of statistics more hereafter.

It was a wise legislative proceeding that granted a double protection to owls, for of all birds, from the farmer's standpoint, they are the most useful. They are nothing short of lynx-eyed cats with wings, and the benefit they confer upon agriculture is almost incalculable. It must be remembered in this connection that Britain is essentially an agricultural country, and that if its animal fauna is diminutive, it is not the less formidable. We have ten tiny creatures, constituting an army in themselves, which, if not kept under, would quickly devastate our fields. These ten species consist of four mice, three voles, and three shrews,—individually so tiny, that any one could comfortably curl itself up in the divided shell of a Chestnut. Farmers, however, well know that if these are a feeble folk they are by no means to be despised. This, however, is very recent knowledge; and, through not previously knowing it, many English counties have recently been overrun by hordes of rodents, which in many cases have done very considerable damage. The South-eastern counties especially have been sufferers in this respect. Had the owls in these districts not been almost exterminated, they would have been seen at morning and evening sweeping low over the land, ever on the look-out for prey.

Those who have studied the habits of owls in their haunts, know how much unnatural history has been written concerning them. The poets have grievously erred in this matter, as well as closet "naturalists." Owls do not mope, nor mourn, nor are melancholy They are neither grave monks, nor anchorites, nor pillared saints. Neither are they brooding or dolorous. On the contrary, they issue forth as very devils, or like evil spirits of the night, and seeking whom they may devour. It is quite unfair of anyone, be he poet or more humble prose-writer, to sum up the character of the owl from accidentally coming across them surprised in the full light of day. Then they will be seen blinking, nodding, and hissing at each other, very unlike the wise representatives of Minerva. No, the white owl never mopes, but holds his revels through the live-long night, when all else is hushed and still. Then he goes seriously about his business—and what a gobbling business he does! Those who cultivate his acquaintance well know that he has no time wherein to make his poetical complaints to the moon.

About ten species of owls are set down as British, but with the great majority of these we have nothing to do. Many of them are mere distinguished bird-visitors, and have got no real footing in the country. All of them, however, whatever their nationality, are eminently useful, and prey, for the most part, upon destructive rodents, and not less destructive vermin of a miscellaneous character. The birds with which we are now mainly concerned are the barn owl, tawny or wood owl, short-eared owl, and long-eared owl. These are more or less common throughout the country, and are the species upon which we must mainly depend in preserving the balance of Nature.

The Barn Owl.—This is the commonest of the owls, and the most useful. When she has young, she brings to her nest a mouse about every twelve minutes; and as she is actively employed both at evening and dawn, and as male and female hunt, forty mice a day is the lowest computation I can make. Surely, then, this clever mouser has a strong claim to our protection. It has been already remarked that the evidence gained as to the food of owls is, from the peculiarly convincing manner by which it is obtained, incontestable. So, to show to what extent owls assist in preserving the balance of Nature, it may be mentioned that an examination of 700 pellets yielded the following remarkable results:—

	No. of Pellets examined.	Remains found.						
		Rats.	Rats.	Mice.	Voles.	Shrews.	Moles.	Birds.	Beetles.
Barn-owl ...	706	18	3	237	693	1580	0	22	0

The above interesting observation was made by Dr. Altum, an eminent German naturalist. It may

be mentioned that the twenty-two birds comprised nineteen sparrows, one greenfinch, and two swifts. Waterton observes that if this bird usually caught its prey by day instead of by night, mankind would have ocular proof of its utility in thinning the country of mice; and it would be protected and encouraged everywhere. It would be with us what the ibis was with the Egyptians. As is well known, Waterton established nesting places for owls, and threatened to strangle his keeper if he molested them. He often stood and minuted them by his watch, as they brought mice to their nest, and upon one occesion he saw a barn-owl drop into the water and rise with a fish in its talons. Discussing the bird in its relation to agricultural economy, he has the following note:—"When it has young, it will bring a mouse to its nest about every twelve or fifteen minutes. But in order to have a proper idea of the enormous quantity of mice which this bird destroys, we must examine the pellets which it ejects from its stomach in the place of its retreat. Every pellet contains from four to seven skeletons of mice. In sixteen months from the time that the apartment of the owl on the old gateway was cleaned out, there has been a deposit of about a bushel of pellets. The barn-owl sometimes carries off rats. One evening I was sitting under a shed, and killed a very large rat as it was coming out of a hole, about ten yards from where I was watching it. I did not go to take it up, hoping to get another shot. As it lay there, a barn-owl pounced upon it and flew away with it." Finally, Waterton considers that he was amply repaid for the pains he took to protect and encourage the barn-owl; and that it paid him a hundred-fold by the enormous quantity of mice which it destroyed during the year.

The present writer can quite confirm a portion of the latter statement from personal observation. Once, whilst spending my summer vacation at a lonely farmhouse among the hills, I remember going out with a man-servant to shoot owls. Young as I was, I pleaded long and earnestly that they might be spared, urging that if now and again they took a young pigeon, they did infinite good as a "set-off" by the quantity of vermin they destroyed. The fellow would not be moved by my entreaties, however, as he knew perfectly well that the pair of owls that had their nest upon the beam in the barn had eaten his young pigeons. After lying for some time under a Sycamore at the top of the fold, an owl skimmed silently over the trees and entered the pigeon-cote. Soon it emerged with its prey in its claws. "There," said the man, "caught in the act!" And so it was—of killing one of the largest rats I ever saw; for the stupid rustic fired and killed it, and this rodent dropped from its claw. Rats were the authors of the mischief, which, if allowed, the owls would certainly have exterminated.

In a short paper, it is difficult to state anything like an adequate defence of the barn-owl—to set forth all the evidence in its favour; but it may shortly be stated that almost every practical ornithologist in the country—especially the men who get their facts at first hand from Nature—are at one in their opinion that the benefits which this bird confers upon agriculturists are incalculable. Where, in game-preserving districts, owls have been shot down and exterminated, the inevitable results have followed—swarms of mice and rats in such numbers as to have constituted a plague. In the Lothians, in Lincolnshire, and in the south-eastern counties of England, this has been most marked. Even from the game-preserver's standpoint, the destruction of birds of prey—owls especially—is a short-sighted policy, as the two thrive well together.

If you would see the mid-day *siesta* of the owls, climb up into some hay-mow. There, in an angle of the beam, you will see their owlships, snoring and blinking wide their great round eyes. There they will stay all day, digesting the mice with which they have gorged themselves, until twilight, when they will again issue forth upon their madcap revels.

(To be continued.)

WINTER-BLOOMING BEGONIAS.

At Highbury, near Birmingham, the residence of the Right Honourable Joseph Chamberlain, M.P., a span-roof house is just now very gay with a collection of these highly useful autumn and winter decorative plants.

Amongst white-flowered kinds, Carriereii is an excellent very fine blooming compact-growing dwarf kind, with clusters of smallish pure white flowers, and a lovely decorative plant. Moonlight is very similar in habit and flower, but grows a little larger, and the foliage is dark-tinted underneath. It is, however, distinct, and a very free-blooming kind, and may be regarded as the best white-flowered variety. Semperflorens is a taller and stronger grower, with larger foliage, with smallish white flowers in clusters on long foot-stalks, and a free bloomer. Knowsleyana, shaded pinkish-white, somewhat resembling fuchsioides in habit.

In pink-coloured varieties, the best are semperflorens gigantea, pale rosy-pink with lighter coloured centre—a bright-coloured beautiful variety; Ruckeri, of fuchsioides style of growth, small flowers of a pale pink colour, and of graceful habit; and the old "insignis," an excellent winter bloomer.

Amongst the brighter-coloured or red varieties, M. Eugène Vallerand is prominent for its close compact habit of growth—an excellent companion plant to Moonlight, with an abundance of medium-sized bright orange-red flowers, and this handsome variety deserves general cultivation. Saundersoni is also a very pleasing variety, rosy-carmine in the bud, opening to a paler pink colour.

These plants are of very easy cultivation, cuttings being struck as early as cuttings can be had, and grown on in a temperature of from 50° to 60°; and in June, after being potted into their blooming pots, they are placed in cold frames until September, and then placed in an intermediate-house, when they flower from September onwards, the soil used being a mixture of loam, leaf-soil, and sand, and a little peat may be added at the pleasure of the cultivator.

Two beautiful dark-foliaged varieties are also grown at Highbury—Arthur Mallet, shaded rosy-purple foliage, with bright rosy-pink flowers; and Incarnata var. papillosa, which is almost the colour of a good Beet, with clusters of flowers, as in insignis. Both are handsome decorative kinds, of good habit.

In the long corridor at Highbury, with which numerous plant-houses are connected, and where so many various plants are planted out, the old Begonia fuchsioides thrives and blooms freely; several plants, from 8 to 9 feet high, have been blooming profusely, and under such circumstances the full beauty of this variety is seen. *W. D.*

NYMPHÆAS.

The late open weather has greatly favoured and extended the display made by these beautiful plants, and most of the species have flowered freely. At the present time we have a goodly number in flower, viz., N. Daubenyana ×, N. scutifolia, N. cœrulea (*Bot. Mag.*), N. pubescens, N. Lotus var. dentata, N. odorata, N. Devoniana. D. Daubenyana × might be termed a perpetual-flowering species, it being seldom out of bloom. It is a conspicuous plant by reason of a young plant forming in the centre of each leaf, which sometimes flowers while it is still attached to the parent plant. N. Marliacea-chromatella, or perhaps more correctly, N. tuberosa var. flavescens, which latter name has been given to it by the Kew authorities, which, there is little doubt, expresses the correct view of the case, as points of resemblance may be traced in the variety which are peculiar to N. tuberosa. It originated in the nursery of M. Latour Marliac, Temple-sur-Lot, France, and I believe I am correct in saying that it is not known how the variety was obtained. It is an excellent addition to the list of cultivated Nymphæas, and bears yellow flowers of much-admired shade of colour. It is more fitted for the greenhouse than the stove, for when subjected to stove treatment, it becomes too vegetative.

This Nymphæa should have a good future befor it, on account of its hardiness. Here it has stood out-of-doors during the past two winters, flowering freely in its season, and increasing in size. The colour of the flowers of the outdoor-grown plants is scarcely equal to those produced under glass, although when the plants stand in full sunlight, as all Nymphæas should do, the colour is very bright. In houses of aquatic plants, the sides and sometimes the roof are covered more or less with climbing plants which are pretty looking, but they shut out a good portion of sunshine to the detriment of the Nymphæas in the tank.

N. flava is a sparse-flowering species with yellow flowers, and care should be taken to pick off the stolon-like runners which are thrown out in abundance, or its flowering capabilities will be greatly reduced. It has stood out in the open air in these gardens for the past two years, and in warm parts of the country it would also flourish without protection.

N. alba var. candidissima.—This variety is less well known than it deserves to be. For the information of those persons who may not be acquainted with the variety, I would say that it differs from the type by having much larger leaves and flowers. Some of the flowers which I measured the past summer were from 6 inches to 9 inches in diameter. The leaves measure 16 inches in breadth, and a little more in length. The petals are creamy—not white, as in the type—and they are thicker. It is a very vigorous grower, requiring plenty of room, and it flowers freely. *W. Harrow, Botanic Gardens, Cambridge, November 7.*

ROSES.

PLANTING ROSES.

The present is the best month in the year in which to plant Roses. The operation may, however be carried out successfully—weather permitting—up to the middle of February. Beds of Roses which show signs of exhaustion should be taken up and transplanted in some position in close proximity to carriage drives or other frequented spots, the home woods, &c., where their fragrance, if not their colours, will proclaim their presence. For although such Roses are not quite good enough to be retained in beds devoted exclusively to Roses, they are too good to be consigned to the rubbish-heap so long as space can be found for them elsewhere. If the soil in the old beds or in the sites selected for new ones be of a light open nature, a few loads of stiff loam or clay should be procured, and in the process of trenching the ground from 2 to 3 feet deep, be well mixed with it. A liberal dressing of pig-dung or farmyard manure should be added as the trenching is proceeded with. This done, obtain the desired number of dwarf Roses which have been budded close to the ground either on the the Briar or Manetti stocks, and plant them about 2 feet apart; burying the union of stock and scion in the soil so that the latter may make roots for itself. In planting, give the plants a slight shake in an upward direction, the better to work the soil among the roots, afterwards tread the soil moderately firm about them, and finish off the operation by laying a surface-dressing 2 inches thick of short dung. Before planting, the straggling roots, and any that are injured, should be cut back.

The following brief list of hybrid perpetuals will meet the requirements of growers who are content with sterling qualities, and who do not care to grow a number of varieties:—Abel Carrière, A. K. Williams, Alphonse Soupert, Alfred Colomb, Auguste Rigotard, Barthélemy Joubert, Beauty of Waltham, Captain Christy, Doctor Sewell, Dr. Andry, Duke of Edinburgh, Duke of Connaught, Fisher Holmes, Dupuy Jamain, Earl of Dufferin, La France, La Rosière, Mrs. John Laing, Madame Gabriel Luizet, Madame Hippolyte Jamain, Merveille de Lyon,

Pride of Reigate, Thomas Mills, Ulrich Brunner, Victor Verdier, Viscountess Folkestone, a beautiful flesh coloured Rose, of fine form, and very fragrant. A reference to any good Rose catalogue will afford a description of the twenty-six Roses enumerated above, as well as many more. *H. W. Ward.*

Foreign Correspondence.

L'HORTICULTURE INTERNATIONALE, PARC LEOPOLD, BRUSSELS.

When publishing some notes on some of the leading Belgian Nurseries, gleaned in a visit in 1888, we gave in our issue for May 5 of that year, a full-page illustration showing the plan of this establishment, which at that time was in its infancy, but which since then has acquired a wide reputation. Under the direction of M. Lucien Linden, and with the great experience of his father, M. J. Linden, one of the most practical and observant of botanical travellers, and now the oldest in that honoured band, the success of the great establishment hardly admitted of doubt. Calling to mind a conversation with M. Linden, *père*, in 1888, during which he made a remark which at that time seemed boastful, but at present is likely to be fulfilled, we must ascribe much of the present good fortune of the business to the knowledge which he possesses of numerous fine Orchids which he in his previous journeys had seen, but which he has never been able as yet to introduce. The remark referred to was, "My dear sir, I do assure you that there are as many fine Orchids as yet unknown to science, and of handsome things only known in herbaria, yet to be introduced, as there have been already brought into cultivation." At that time we were shown an album containing drawings of some of the things referred to, and to-day we can say that we have seen plants and flowers of some of them, and plants of others, and to some of the more striking of these we will refer after touching on the aspect of the general collection.

A reference to the illustration in a previous volume, will show the plan of the establishment. First comes the entrance-hall, decorated with Ferns, Palms, and flowers; then follows the lofty central gallery, and stately winter garden, in which the meetings of the Orchideene Society of Brussels are held, which has done so much to foster a love for Orchids in Belgium. The gallery and winter garden contain some of the finest examples of Palms and Tree Ferns which are to be found in Europe, Cocos Bonneti, Kentias, Phœnix, Cycas tonquinensis, and other Cycads, &c., reaching almost up to the ridge. The most interesting, however, of these subjects is the original plant of Livistona chinensis, brought over by Siebold. It was then called Corypha Sieboldii, and was, of course, a very small specimen. Its trunk is now some 3 feet across, and its huge, but still beautiful foliage, extends almost to the limits that even its commodious quarters will permit. Here, close at hand, are the offices, and the apartment of the artist, M. A. Goossens, whose work Orchid growers are now so familiar with, through the *Lindenia*.

The Orchid-houses run in ranges right and left of the central gallery, and a walk through them reveals house after house of Odontoglossum crispum and O. Pescatorei of the most perfect condition of growth and best possible type of flower. It has been remarked that few really good Odontoglossums have flowered in England this year; in Belgium, on the contrary, it has been a most prolific season.

The end of one of the next ranges has a noble bank of Odontoglossums capped with a large specimen of the old, but still rare Lycaste macrophylla, and mingled among the group were superb Odontoglossum Harryanum, O. Insleayii splendens, the true O. odoratum, and some Masdevallias with brightly, coloured flowers, notably a M. ignea, of rich crimson. The next cold-house contains specimens of Odontoglossum citrosmum, Oncidium unguiculatum, and O. tigrinum, with bulbs of astonishing size, and that, too, in consequence, it is alleged, of the very low temperature maintained. Beyond these we come to a superb bank of fine varieties of Odontoglossum grande, some of them with half-a-dozen spikes each; here, too, was found an interesting series of the graceful O. constrictum and O. Rossii majus. We then come to a large specimen of Masdevallia Veitchiana, and another of M. macrura, with unusually large and brightly-coloured flowers; Restrepia antennifera purpurea, and a very richly coloured form of Odontoglossum Uro Skinneri. Then a division is discovered filled with Odontoglossum coronarium, and, then house after house of such showy plants as Lælia purpurata, many of the specimens more than 3 feet in diameter. Cattleya Gaskelliana, a most useful summer flower; C. gigas, and C. aurea, in all their forms; C. granulosa, and C. guttata Leopoldi; a huge mass of the latter was sending up a score or more of flower-spikes, and others were observed proportionately large. Here we noted a number of Lælia Dormaniana in bloom, a large houseful of the broad-leaved and large-flowered form of Angræcum sesquipedale, a houseful of Cattleya Eldorado, another of Saccolabium cœleste, range after range of Cypripedium, Phalænopsis, and Vanda, many finely in flower; a houseful of Dendrobium Phalænopsis and D. Williamsii; and, in large quantities, many other plants that as yet are far from being common.

The new plant-houses, many of whose occupants give ample warranty for Mr. Linden's remark previously alluded to, about the many good Orchids yet remaining to be introduced. Among these, the winter-flowering Cattleya Warocqueana is one of the most extraordinary of recent times. In England it has been greatly admired, but in Belgium it is the plant of the day. We found upwards of fifty plants of it in flower, and specimens in bud and sheath in all stages, which leave no room to doubt that its magnificent rose and crimson flowers will be produced throughout the winter. Some of the varieties are so exactly like the true "autumn-flowering labiata," that actual comparison with the true plant, and careful scrutiny by several good judges, failed to find a point whereby those forms of the new introduction can be separated from it, and which it is thought comes from the same locality as the original plant. Some of its varieties have large expanded labellums, with the colouring of C. gigas; one of them has blush-coloured sepals and petals, and a lip of a rich velvety-crimson shade, like Cattleya exoniensis×, but it is larger than that species. The varieties of C. Warocqueana, amethystina and flammea, are beautiful, and in all its variations it appears to be a desirable plant, not only to be grown into large specimens, but also as smaller plants, in quantity for the sake of variety and the beauty of its flowers, which come at a season when they are most needed. As bearing on this, it was noted at the meeting of the Orchideene, on Nov. 9, when over 100 Orchids were exhibited, that, were C. Warocqueana not present, the only exhibit of a warm, bright colour afforded was a specimen of the old autumn-flowering labiata.

There is a great amount of credit attaching to the firm for having introduced so fine an Orchid, and it is an honour to be coveted to have one's name attached to the same. Among the other new Cattleyas observed was the unique C. Dubuyssonii, of which we shall give an illustration in our next issue, some richly-coloured Cattleya maxima, and especially that of C. m. Malouana. Another quite new Cattleya, from a new locality, has bulbs resembling those of C. labiata, but very thin, pale, and sometimes of 2 feet in height. Yet another large, new Cattleya, is said to have branched spikes, and the beautiful C. Lindeni and C. aurea Lindeni, both of which have flowered, are now tolerably well known. In several houses were noticed the new Odontoglossums, which are evidently carefully watched by the importers. One has flowers somewhat in the way of O. ioplocon, but larger and with more pure white in it.

In the same house were observed some Oncidiums, whose number corresponds with a drawing representing a species as handsome as O. macranthum, but with thin, flat bulbs, unlike anything yet introduced. In another house was Dendrobium Bleichroderianum, D. Mirbelianum, and others from the same region. A warm house revealed a collection of new Cirrhopetalums, the first of which to flower was the handsome red and yellow C. Mastersianum, well figured in the last issue of *Lindenia*. Here, too, were a curious Cirrhopetalum, with leaves marked like those of Tillandsia tesselata, and a plant of the rare Bulbophyllum Beccarei. Other beautiful new introductions which attracted attention were Coryanthes Bungerothii, Zygopetalum Jorisianum, Maxillaria longisepala, and a new form of the Masdevallia infracta section, with white flowers marked only with two tinges of blush-white down the lower sepals. Indeed, there was a number of newly-introduced Orchids being carefully grown on for flowering, which a very short time will prove. Among those which already have flower-buds on the point of bursting is a very promising plant, the new yellow and red—nearly scarlet—Odontoglossum Noezlianum.

Mr. Linden does not confine his attention to the introduction of new Orchids, for instructions are given to send other plants, still unknown or rare, and especially the more elegant of the thin-stemmed Tree Ferns and Cycads. In the large Nepenthes-house, whose inmates bears thousands of pitchers, were several imported novelties, and at last Mr. Linden has succeeded in introducing the beautiful painted-leaved Tropæolum, with handsome flowers, and of which he has spoken so often. Its leaves are very handsome, being veined with rose and silver, like some of the Echites. Passing out by the workmen's gallery, which unites the upper ends of the houses on that side, after having tried, we fear, without much success, to note sufficient of the rare things to give some idea of the importance of the place, we come upon large importations, just arrived, and proportionately large orders packed for Russia and other distant parts. The packing of these plants, which, we are told, has prevented a single complaint, it might be well to note. Cotton-wool is avoided, and paper of several textures, from the fine white silver paper next the plant to the thin hard brown paper on the outside, which is so effectual in excluding cold, is used. Beyond this a special kind of soft, narrow, white wood-shavings is used, and other means employed, which the experience of many years has suggested.

Trade Notices.

Sinclair.—A correspondent in Wilts has recently informed me that a person calling himself Sinclair is going round the country soliciting orders for plants and seeds on account of the curator of the Royal Gardens, Kew. I would like to caution the readers of the *Gardeners' Chronicle* against such a person, who, I need hardly say, is not only quite unauthorized, but absolutely unknown to me. *Geo. Nicholson.*

Plant Notes.

AGAVE ATTENUATA.

A plant of this remarkable species of Agave, has lately been flowering in the garden of Mr. Hanbury at La Mortola. As it differs in some noteworthy respects from the description drawn up by Mr. Baker and published, with figure, in *Gardeners' Chronicle*, 1887, I may briefly call attention to the specimen here, of which I send a photograph. The trunk is only 3 feet long, not 4—5 feet, as in the typical specimen; it is also decumbent rather than erect as is shown in *Botanical Magazine*, t. 6333, under name of A. glaucescens; this is doubtless a chance result

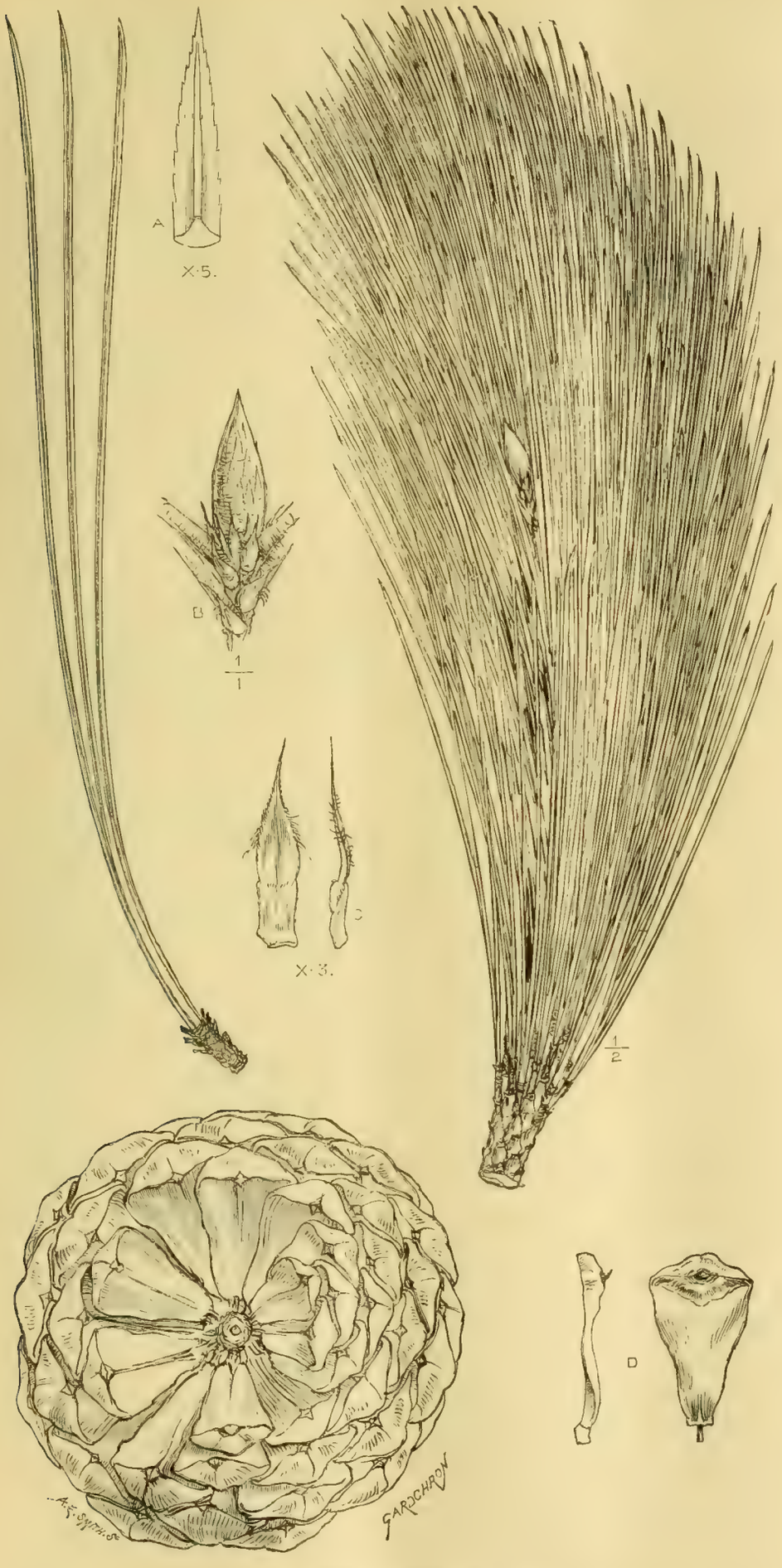


Fig. 111.—PINUS PONDEROSA (see p. 557).

Spray, reduced one-half; fascicle of leaves, real size; A, Apex of leaf, magnified; B, Bud; C, Scales, rich brown. At the bottom is shown the base of a ripe cone, showing how it becomes detached from the branch. A separate cone scale (D) is represented from the back and from the side, to show the short laterally flattened stalk.

of accident to the individual specimen. Contrary to what is the case with most of the specimens here grown in the open air, the leaves are shorter and decidedly narrower than in the type; being 5 inches broad above the middle instead of "8—9 inches." The peduncle, however, is much larger, having a length of nearly 9 feet; whereas the description "twice the length of the leaves," would only allow a length of 4 feet! At the present time the withered flowers and the unripened black ovaries have mostly fallen off; and from the bases of the short and commonly swollen pedicels are produced countless young plants, most abundantly and vigorously from towards the apex of the peduncle. It must be noticed in regard to the peduncle that its character is not truly that of the improvised section Littæa, inasmuch as the flowers are not borne in pairs (*e.g.*, as is so evidently the case in Agave striata), but in clusters with a varying number of pedicels; this might be expected were the form of inflorescence regarded as a panicle with the secondary axes almost entirely suppressed. We may remark that the plant was somewhat injured by the very unusual frost and snow of last March, which may account for the fact that no fruit has been ripened. *Philip Sewell, La Mortola, Nov.* 4.

Orchid Notes and Gleanings.

CYPRIPEDIUM INSIGNE SANDERÆ.

Amongst the rare Cypripediums in blossom in the Woodland's collection is the variety named above. It first flowered in 1889 amongst some imported insigne, and was sold by Messrs. Protheroe & Morris for the sum of 70 guineas, the purchaser being Baron J. H. W. Schroder; subsequently R. H. Measures, Esq., secured the rest of the plant, and it being known that only these two plants were at the sale, a great deal of interest was created amongst Orchid growers, owing to the exceptionally beautiful colouring of its flowers. Many good judges were of the opinion that it would not maintain its chaste greenish-primrose colour, but would develop more of the characteristics of C. insigne, as the plant gained in strength; such, however, is not the case. On the contrary, it has even increased in beauty since it has become established. The upper dorsal sepal is to the extent of three-fourths of its area of a yellowish-green, reticulated with green veins of a darker shade, with a few very small brownish spots towards the base of the central area; the apical portion is of the purest white, the lower dorsal sepal is wholly of a dull yellowish-green colour, with darker coloured venation; the lateral petals are greenish-primrose, coloured with undulated margins, pouch of a soft pale lemon colour, varnished and beautifully reticulated with lemon-coloured veins; the staminode is of a very light orange-yellow, with a tubercle in the centre of the same colour; the flower-scape is of a light green colour. The differing shades of greenish-yellow in the flower give it an extremely delicate appearance, and those who may wish to see it in Europe should obtain the owner's permission to visit the Woodland's collection, where may also be seen the very rare C. Buchananianum, C. siamense, the lovely little gem, C. Fairieanum, C. regale, and many others, including twenty blossoms of the admirable C. Arthurianum. *J. G.*

PHAIUS TUBERCULOSUS.

A Madagascar plant introduced to Europe by Leon Humblot. The plant is naturally at the height of its development at our dullest season, viz., November to January. It should then have a temperature of 75° to 80° by day, falling 10° at night, with copious waterings and constant syringings, and should be grown in shallow pans, or in boat-shaped or concave teak rafts. The compost should be light fibrous brown peat and sphagnum moss, with plenty of drainage, and the plants placed in a position near the glass, but always shaded from direct sunlight. The atmosphere cannot well be too humid, if it is not produced by steaming the hot pipes; no Orchids

can flourish in an atmosphere charged with steam. Yellow thrips are very fond of its succulent stems and leaves, and the plants under their ravages soon acquire a brown burnt look; if, however, fumigating and dipping be carefully performed at intervals of about a fortnight, no damage will arise from thrips or any other insect. *Reichenbachia.*

Lælia elegans Broomeana,

like all the varieties of this species, is an evergreen plant, with a robust constitution, producing stem-like pseudobulbs, some 18 inches to 2 feet in height, bearing a pair of leaves thick and leathery in texture, and deep green in colour. The growth when mature forms its sheath on the top of the bulb, and produces its spike, which bears numerous flowers of a large size; these are strikingly beautiful, and delicately fragrant. The sepals and petals are rich, deep purple in colour, becoming paler at the base, and bearing a few darker spots; lip in the front lobe deep velvety maroon, the side lobes, which are rolled over the column, being creamy-white, tipped with rich maroon. It blooms during the months of July and August. The typical L. elegans, and all its varieties, enjoy an abundance of heat during the growing season; indeed, it will scarcely be possible to put them in too strong a heat, provided the hottest rays of the sun are kept from them, for although we have found these plants to enjoy full exposure to the light, they yet require shading from the full solar light. During the growing season an abundance of humidity in the atmosphere, and a fair amount of water to their roots is also necessary, and, therefore, good drainage is absolutely essential to their well-being. After flowering time, which is their season of rest, very little water will suffice, the temperature must be reduced, and only sufficient water given the roots to prevent shrivelling in any part of the plant. They grow naturally upon the stems and branches of trees, but under cultivation we find them thrive best under pot-culture, using for soil good peat-fibre (from which all the fine part has been shaken), a little chopped sphagnum moss, and some medium-sized nodules of charcoal. The whole should be built up in a cone-like mound above the pot's rim, and made very firm; this cannot be done if pieces of charcoal of too large a size are introduced. Nothing is more injurious to a plant than to be so potted, that the slightest movement causes it to rock about, straining the roots, and oftentimes breaking them entirely. *Orchid Album.*

SEED TRADE.

Report of the English Grass Seed Harvest.—We make the following extracts from a circular issued by Messrs. J. Carter & Co., High Holborn, London, on home-grown Clovers and Grasses. These will be of interest to the gardener:—

Rye-grasses.

Lolium perenne and Italicum.—The crops of these are reported to be generally inferior, whilst in consequence of the abnormal prices that have ruled for the last two or three seasons, a much smaller acreage than usual has been under cultivation. At the present time, values of fine samples of perennial Rye-grass have advanced 50 per cent. on last year's price, but it is not expected that this extreme advance will be fully maintained.

Natural Grasses.

Agrostis stolonifera (Fiorin).—The home crop will be comparatively good, and an average quantity harvested. American reports speak of a very limited crop only.

Alopecurus pratensis (Meadow Foxtail).—Average harvest and quality is satisfactory, though rather light. Prices favourable to buyers.

Cynosurus cristatus (Crested Dogstail).—Fair average crop, but the colour of the seed is poorer than anticipated.

Festuca duriuscula (Hard Fescue).—Crop harvested plentifully, but seed on the average rather discoloured; bright samples will command higher prices.

Festuca pratensis (Meadow Fescue).—This crop is reported much shorter than last year, and higher prices are being asked.

Poa pratensis (Smooth-stalked Meadow Grass).—Crop very short indeed, even smaller than last season's. American reports state that the crop is almost a failure, and therefore high prices are expected to rule.

Poa nemoralis (Wood Meadow Grass).—Crop rather short, dark coloured, and prices rule high.

Poa trivialis (Rough-stalked Meadow Grass).—Crop favourable; prices will not rule above those of former seasons.

White Clover.

Trifolium repens.—We cannot in any way modify the unsatisfactory reports that we have already published of this crop. In some districts the crop is a failure, both as to quality and quantity. In all parts of Europe the samples are greatly damaged in colour by rain, and the average germination will be found to be lower than that for several years past. American seed is small, and deficient in colour.

CYPRIPEDIUMS IN COLD FRAMES.

Many of these plants do so much better in frames than warm houses in the warmer months of summer, that I have for some years grown in this manner by preference. When no harm need longer be anticipated from cold, the plants are placed in the frames, say, in the generality of years, towards the end of June. In July, August, and part of September, the lights may be left off on fine nights, to let the dew fall on the plants—a proceeding that is evidently of benefit to them, for their leaves thicken greatly, and the colours are finer, and the green colour darker.

The species and varieties suitable for this kind of treatment are those of the cool-house, Boxalii, insigne, i. Maulei, villosum, and others like them. The frame should stand facing the west, and only healthy plants should be put out, those that are weakly being kept in the house. The plants should be prepared just as other plants are, by being grown cool, and then no check will be given them. Here the plants remain till the end of October, covering the frames at night if there is danger from frost, and the plants stand close to the glass. The removal of the plants to cool frames secures space in the houses for other plants.

In the far north, this kind of treatment would require to be varied, but much will depend on local conditions and situation, and these must be taken into consideration in deciding when to put out and bring in. These species of Cypripedium, when not coddled in any way, will stand cold without injury to a degree that would surprise many, and persons with but little accommodation could grow them well if they but knew of the frame culture. Those who have not a frame could put the plants under the shelter of a north wall (those that burn would be better there), and a west or east aspect for others; but in this matter experience is the best teacher. I have placed them in the open during August and early in September, when the weather was very warm and dry, and with a gentle dewing over with the syringe, night and morning, they have grown and remained in health, and bloomed much better than when they were kept in a warm house, and the flowers are stronger and better in colour than those. A quantity of Cypripediums coming into bloom at this date is a valuable addition to one's floral stock. One advantage the frame treatment has over any other is, that the plants bloom late, and are more valuable on that account. When once the blooms commence to show, it is not advisable to try to retard them, this often ending in smallness of flowers, and sometimes loss of spikes, and it is good practice to remove them from the frames when the flower-spikes appear. If the weather is wet or sunless in summer, less moisture should be afforded them, or damping will ensue. Drip is also to be guarded against in frames. Weak liquid manure will assist them when in growth, and for the purpose I find sheep and cow-dung, with a small quantity of soot, safe and trustworthy. In potting, use good loam, broken charcoal, and coarse river-sand, with a few lumps of fibrous peat; this is a good soil for strong-growing species. The drainage should be good, but not excessive. Keep the plants free from insects, and allow no drying-off, as is sometimes practised, for once the roots and leaves shrivel, it is a difficult matter to get them into a healthy condition. *Geo. Wythes.*

PLANTS AND THEIR CULTURE.

The Conservatory, and its Supply-pits.—There will be no difficulty in keeping the conservatory gay for some weeks to come, if Chrysanthemums are largely grown. A greater difficulty arises when a high temperature is kept up for the other inmates, for then the Chrysanthemums do not endure very long in good order, and a large reserve stock is needed. If those plants requiring warmth can be removed for a time, it will be of benefit to the "mums;" for a warmth of 40° to 45° at night is high enough. Get all watering of plants done early in the day. For stages, I prefer the dwarf or June cut-back Chrysanthemums, the tall plants not being good for this part of the house. For beds of Chrysanthemums, these cut-back plants are useful for the margins, when they are well grown and thinned to half-a-dozen buds. The zonal Pelargoniums specially prepared for late flowering will now be showing quantities of bloom, and should be placed near the glass, in a temperature of 50° to 55°, weak liquid manure being afforded the plants once a week; if not grown too warm, the blooms will last a long time. When cut from the plants, the flowers should be gummed, so that the petals cannot fall. Some of the plants may be kept in a cool dry pit or frame, to be retarded.

Cinerarias sown early will be forming bloom, and will require liquid manure and a light place. Succession-plants should be shifted, and kept growing in a cool pit or frame, safe from frost, and with sufficient warmth to ward off damp. Calceolarias need a similar kind of treatment. No time should be lost in shifting any of the latter that may be getting pot-bound, never allowing them to be checked for want of pot-room before they flower.

Early Primulas, now in full bloom, will be better if kept a few degrees warmer than Calceolarias, and in a drier house. Watering Calceolarias with some clear soot-water once or twice a month will give good colour to the foliage. These plants soon suffer at the base of the leaves from decay if too much water be afforded them. The spring-sown tuberous-rooted Begonias, grown in a cold frame through the summer, will now be most useful, and if they are carefully watered, they will bloom for some time yet under like treatment to the Primulas. East-Lothian Stocks growing in pots for spring and early summer bloom should be shifted if necessary, using a good loam, with some bone-dust, replacing the plants in cold frames, and watering them sparingly for a time. Campanulas in variety in cold frames must now be kept drier, but giving them abundance of air in favourable weather. Liliums which flowered early should now be growing, and require to be shifted when the new roots have made some progress; for this purpose a good yellow loam, with a sprinkling of coarse river-sand, and some ¼-inch bones, is a good compost. Leave some amount of space at the top of the pot for top-dressing in early spring. Put the bulbs in a cold frame, and keep them growing, but only watering them sparingly for a time. *G. Wythes, Syon House, Brentford.*

THE FLOWER GARDEN.

Planting.—While the weather remains open, continue to plant all kinds of deciduous trees and shrubs. If the area to be planted admits of it, trench the

soil, and where holes only are to be taken out, let these be large ones, so that the roots may spread easily in the looser soil. Avoid deep planting, but plant so that the crown of the root is covered to the same depth as before, and make the soil firm about the roots. Where the soil is shallow or poor, add a quantity of loam, road-scrapings, turf-edgings from roads or walks. All specimens should be securely fastened to stakes to prevent shaking by wind. Afford a mulch to protect the roots.

Plant Protection.—Tender shrubs, and plants on walls and fences should first have a thick mulching placed over the roots, which may consist of leaves, litter, or coal ashes, the tops being covered with canvas, mats, or evergreen branches. Varieties of Eucalyptus should have hay bands bound round their stems, more protection being given in very severe frosts. Many of these succumb when exposed to more than 12° of frost, especially E. globulus, which grows so rapidly that it does not mature its wood so well as some other species; but if the stem is protected as high as it is possible to do so, and the roots mulched, the trees may generally be preserved even in cold districts. Camellias, Oleanders, Clianthus, Edwardsia grandiflora, Myrtles, Tea Roses, Hibiscus, and Pomegranates on walls may be neatly covered with evergreens laid on over each other like a thatch, which will keep them dry and warm and also admit air. Fuchsias Alloysia, Escallonias, if their tops are cut down by severe frost will, if the roots are protected, break again in the spring, and make fine strong growths.

Shrubberies.—As the deciduous trees finish shedding their foliage, the general clean-up should commence as soon as possible. When the shrubberies are dense, and there is no fear of the leaves being blown out by the wind, they may be allowed to remain, especially in Rhododendron and Azalea beds, but in their case, peat, or old potting-bench soil, should be used to cover the leaves, in preference to forking or digging them into the soil, these shrubs being principally surface-rooters. *D. C. Powell, Powderham Castle, Devon.*

The Orchid Houses.

The East India-house.—The present is a good time to top-dress and repot all Cypripediums that may require the one or the other. I am not an advocate of the top-dressing to any extent of Cypripediums, the plants being readily turned out and repotted at almost any season if due care be taken. Cypripediums bellatulum, niveum, Godefroyæ, and concolor, do well if potted in a compost of three-quarters turfy loam, and one-quarter finely-broken crocks and coarse silver-sand. The plants, when repotted, should not be raised above the rim of the pot, or the soil will be apt to get dry in the middle, while the outside will remain moist. I use shallow pans for these in preference to pots. When repotting, the soil should be made very firm about the roots, and if water be given in quantity to set the compost on the surface it will be sufficient, and very little water will be required by the plants before next February. C. Stonei and C. lævigatum do well in a compost consisting of one-half turfy loam, one-quarter good peat, and one-quarter crocks. The C. barbatum section of Cypripediums, which includes such hybrids as superbiens, ciliolare, &c., I find to do best in fibrous peat and sphagnum moss only; and these plants, which love moisture, should be placed, after repotting, where they can be often syringed, which even in the winter time may be done once a day, in the early morning, if the temperature is as high as it should be.

The Phalænopsis now sending up their spikes should not when small or sickly be allowed to exhaust themselves by carrying flower stems with imperfect flowers on them, but these should be cut off, it being better for the plants and for the gardener. Phalænopsis are sometimes lost by being allowed to flower too much when in the best of health, especially in the country where fogs do not occur to prevent any of the flowers from fully expanding. A month is sufficiently long for a flower spike to remain on any plant. If quite small healthy plants send up strong branching spikes, as they will do at times, the branches should be immediately pinched off, so that the plant may open a few really fine blooms. The night temperature may be allowed to touch 60° on cold nights, the air of the house being kept on the dry side; little syringing is likely to be required in the afternoon. *A. G. Catt, Parkfield Gardens.*

Fruits Under Glass.

Pot Vines.—Assuming that the pots containing the Vines have been placed on inverted pots, the space surrounding them may be filled up with leaves and litter properly prepared, so as to maintain a warmth of about 65°, which will be a few degrees higher than the air of the house. A temperature of 50°, with 10° more by day, according to the weather, will be high enough at starting, for there must be no hurrying of the Vines at this season. It is well to lay the rods, which should be allowed to get dry once in the day, in a horizontal position, on a level, if possible, with the roots, where they would catch the moisture, and yet escape much of the fumes rising from the fermentation of the bed. They may be assisted to break evenly by daily and gentle syringings with warm water. Water must be afforded the Vines very carefully at first, the soil being kept merely moist—that is all that is wanted. As the warmth of the bed declines, a few barrowfuls of prepared materials should be added. Before tying the rods in place, it is sometimes necessary to enlarge the drainage holes of the pots, and place a grassy sod under the pots, to form a store of nourishment at a later date, when liquid-manure will be afforded the plants. Ventilation, always a difficult matter at this season, may be assisted by using the heating apparatus, and a trifling amount of air afforded—enough to change the atmosphere—once daily. Vines in pots, intended for spring planting, should be kept rather dry, the stems cut down, and the wounds dressed with styptic, plunging the pots outdoors in coal-ashes.

Early House.—Get the Vines cleaned, pruned, and dressed in readiness for closing the house, the rods being tied down in bundles for the convenience of syringing, and to secure uniformity of bud-breaking.

Late Vineries.—November being considered the worst of all months for the keeping of Grapes, every effort should be made to keep the air of the vinery dry, by allowing a gentle circulation of warmth in the hot-water pipes till all the leaves are cleared away, but do not give any air by means of the ventilators at the front of the house. When the Vines are at rest, cover up the outside borders with clean straw or dry bracken; and a temperature of 55° inside the Vinery will improve the flavour of the Grapes up to the time of cutting the bunches for bottling. Sudden depressions in temperature chill the berries, which, in due course, attract and condense moisture; mouldiness soon follows, the large clusters begin to shank, the footstalks turning black, and drying up. Where Grapes shank commonly, the outer borders should be covered with lights or shutters. This refers more especially to Muscats. On the other hand, ripe Grapes never keep well in a very dry border, therefore the happy medium must be struck somehow. Gros Colmar, Lady Downes', and other thick-skinned varieties are improved in flavour and tenderness, after becoming black, by the use of a little more fire-heat than most other kinds. If Gros Colmar be not thus thoroughly ripened, the shoulders of the bunches sometimes go black and sapless, or when bottled, damp off about Christmas-time. The Grape-room may now be got in readiness, lime-washing the walls, &c. *Wm. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

Figs.—These trees if trained on walls should be loosened from the walls, and bunched up in preparation for being covered when hard frost appears imminent. For covering, straw or fern are good materials. The roots may be well covered with short manure. Mice must be caught, otherwise much mishief may be done to the young shoots and embryo fruits. In a district where Figs, as a rule, suffer little from frost there is no better plan than to cover the tree with flat boughs of Spruce or Laurel, and then tack up garden mats over them.

The Fruit Room should be ventilated in bright, and kept close during damp, weather. All the earlier varieties of Apples are keeping well this season, and the scanty crop is one reason for greater care in removing decaying fruit. When the Medlar crop is brought in, the fruits should be laid several layers deep, this plan being better than laying them out in a single layer. *A. Evans, Lythe Hill, Haslemere.*

The Kitchen Garden.

Peas.—A good sowing of these should be made at any time from now to the end of the month, the round-seeded varieties being those that are best to sow at this season. Veitch's Extra Early and William I.—the tall-growing variety—are good, but there are other very suitable, independent of the Wrinkled Marrows, the seed of which is more tender, and apt to rot in the ground when sown at this season of the year. A well-sheltered border or quarter should be chosen for this sowing, and the rows fully 7 feet apart, so as to allow of Cauliflowers and Potatos being planted between them. The ground should be well tilled and moderately manured, but only if manure be needed, as early Peas withstand the winter better when the ground is not heavily dressed. When the drills have been properly made with the hoe (should the soil be naturally light), make the soil at the bottom of the drills moderately firm with the foot previous to sowing. Sow the Peas thickly, and if mice abound, coat them with powdered red-lead, after slightly damping the seed; cover them to a depth of 2 inches with fine soil, after which, spread some coal-ashes over the rows. In wet soils, sowing is better deferred till February, and some may then be forwarded in small pots or turves under glass, to be subsequently planted out.

Seakale.—Although this plant may be forced as soon as the leaves have withered, and in a variety of ways, the produce is never as good as when it is allowed a fair amount of rest, and it generally takes longer to bring it fit to use when started very early. If not yet done, the leaves should be removed, and all rubbish cleared away, so as to expose the crowns to light and air, and if required at an early date, the pots or boxes should be placed over a portion of the crowns, and a bed of leaves and dung made up, first putting a stick to mark the site of each pot. In forcing Seakale, one thing should be guarded against—that is, too much heat, this leading to spindly growth, and sometimes to the loss of the roots. Another way is to lift the roots and cut them in lengths of 9 inches, pack closely together in boxes or pots, and place in the Mushroom-house, or any dark place having moderate warmth. In lifting the roots, all the thongs should be saved and heeled in, to be made into planting sets in wet weather. These rootlets, if cut in lengths of 6 to 9 inches, form capital crowns for forcing the first season.

Rhubarb is probably the first of the kitchen garden roots that will force with ease, and it is usually required at the end of December. The old system of bringing forward this crop under pots with the aid of heat from dung, &c., is only to be recommended where other suitable means are not at hand, for if forced in this way, the flavour is greatly inferior to that forced in the light. Roots carefully lifted, and embedded in soil closely together, and in a temperature of 60° to 70°, will quickly yield a good crop of stalks. Water should be sparingly supplied to the roots, at a temperature of 80°, and the pits or houses kept close for the present.

Trenching and Digging.—As soon as the ground becomes vacant, get it deeply dug, or trenched, as may be necessary, but do not bury the good top soil at the bottom of deep trenches, or bring the crude unfertile subsoil to the top. In old gardens a heavy dressing of quicklime will be of immense benefit to the land, without any manure. *H. Markham, Mereworth Castle, Maidstone.*

PLANT PORTRAITS.

Benthamia fragifera, *Garden*, November 1.

Brassavola glauca, *Orchid Album*, t. 415 (by error in text, 416).

Lælia elegans Broomeana, *Orchid Album*, t. 413.

Odontoglossum crispum var. plumatum, *Orchid Album*, t. 414.

Phalænopsis intermedia Brymeriana, *Orchid Album*, t 416 (in text, 415).

Rose Denmark, *Bull. R. Soc. Toscana di Orticult.*, October.—Hybrid Tea, rose-coloured; a seedling from La France, fertilised by Safrano.

Senecio Ghiesbreghtii, *Revue Horticole*, November 1.—A showy plant for the conservatory or for "so called subtropical work."

Zygopetalum crinitum var. cœruleum, *Orchid Album*, t. 410.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY,	Nov. 18	Liverpool (two days). Twickenham (two days). Manchester (two days). Borough of Hanley (two days). Cardiff.
WEDNESDAY,	Nov. 19	York Florists' (three days). Rugby (two days). Bedford and Bedfordshire (two days). Swansea. Bristol.
THURSDAY,	Nov. 20	Scottish Horticultural at Edinburgh (three days). Shropshire.
FRIDAY,	Nov. 21	—Stockport (two days).

SALES.

MONDAY,	Nov. 17	Dutch Bulbs, at Stevens' Rooms, and also at Protheroe & Morris' Rooms. Orchids, at The Woodlands, Clapham Park, by Protheroe & Morris (two days).
TUESDAY,	Nov. 18	Liliums, auratum and others, at Protheroe & Morris' Rooms. Nursery Stock at Leytonstone and Wanstead, by Protheroe & Morris (three days).
WEDNESDAY,	Nov. 19	Dutch Bulbs, at Stevens' Rooms, and also at Protheroe & Morris' Rooms. Shrubs, Conifers, Roses, Border Plants, Azalea mollis, and Liliums, from Japan, at Stevens' Rooms. Greenhouse Plants, at Protheroe & Morris' Rooms.
THURSDAY,	Nov. 20	Fruit Trees and other Nursery Stock, at the Toddington Nursery Co.'s, Winchcomb, by Protheroe & Morris (two days). Dutch Bulbs at Protheroe & Morris' Rooms.
FRIDAY,	Nov. 21	Orchids from Mr. F. Sander, at Protheroe & Morris' Rooms.
SATURDAY,	Nov. 22	Dutch Bulbs at Stevens' Rooms, and also at Protheroe and Morris' Rooms. Shrubs, Conifers, Roses, Border Plants, Azalea mollis, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—41°.8.

Two Chinese Introductions.

Two meetings have been held this week in London, which suggest comment. One was the ordinary fortnightly meeting of the Royal Horticultural Society, at which the Chinese Primrose formed the chief object of attention; the other, the special centenary meeting of the National Chrysanthemum Society, at the Westminster Aquarium, when the Chinese Chrysanthemum, with its brother from Japan, reigned supreme. In both cases the unsuitability of the building in which the meetings were held was strikingly apparent, and makes us earnestly look forward to a "hall of our own," where the conditions requisite for horticultural exhibitions in the metropolis, large and small, may be obtained. Whether Baron Schroder's idea can be realised or not depends largely upon the amount of support which the horticulturists of the nation are prepared to give. At present it looks as if sectional divisions, with the waste of energy and means that they entail, and personal interests, legitimate enough in their way, will prove obstacles, as they have done so disastrously already, against any united effort for the benefit of horticulture in general. May the result prove that our anticipations are incorrect.

Reverting to the history of the Chrysanthemum and of the Chinese Primrose, we may point out that in the case of both these plants, as in so very many others, it is to the Royal Horticultural Society that our tribute of gratitude is in a very large measure due.

The history of the Chrysanthemum, and of the part played by the Horticultural Society in its culture and diffusion, were fully entered into in our columns last year, at the time of the magnificent exhibition of these plants at Chiswick (see our pages for November 9, 1889). Nothing material has been added to Mr. Hemsley's exhaustive account in our numbers during November and December of last year, so that we need not go over the old ground again.

The story of the origin of the Chinese Primrose was dealt with in our columns in 1889, January 26, p. 115. Following up the sketch there



Fig. 112.—The wild Chinese primula.

given, Mr. Arthur Sutton, on Tuesday last, detailed the history of the flower from its early times, and his record of the principal improvements effected in this country and on the Continent will be read later on in the *Journal* of the Society with much interest. It is curious to note that in 1833, growers chiefly depended upon cuttings, while now-a-days the plants are almost entirely propagated by seed. In illustration of Mr. Sutton's lecture, a series of typical varieties was shown, which well fulfilled the intended purpose, although from the early date the flowers were not so good in quality as they will be later on. Among the specimens exhibited by Mr. Sutton was one of special interest, inasmuch as it probably represents the original wild form, found by the Abbé Delavay and by Dr. Henry in the mountains of Central China, where it grows on dry limestone rocks, fully exposed to the sun, and with a minimum of moisture. This plant, the foliage of which is slightly sweet-scented, was grown from seed brought home from China by a friend of Lady Hutt's at Appley Towers, Ryde, where we had an opportunity of seeing them a few weeks since, and at once recognised them as probably identical with the wild plant with which we were familiar from correspondence with M. Franchet, of Paris, and from the specimens sent home by the Abbé Delavay and Dr. Henry. Some of these plants passed into the hands of Mr. Sutton, and we await their flowering with much interest.

In the case of the Chinese Primrose, as in the Cineraria, all the variation hitherto obtained, has been by means of selection and cross-fertilisation within the limits of a single species. How different in the case of the Chrysanthemum, where two or three species have been involved, with the result that a much wider degree of variation exists than in the case of the Primrose. It would, therefore, seem desirable not to depend only on cross-fertilisation between varieties of one species, but also to practise hybridisation between different species. A hardy form of Chinese Primrose would be a very desirable consummation. It appears that up to this time, experiments in the direction we have indicated have not been attended with any success; but this circumstance should by no means discourage the hybridiser, but only stimulate him to renewed efforts. The whole structure and conformation of the flowers encourage experiments of this kind, and the large number of hardy species offers an extended choice of subjects for trial.

Long before the time that we or our successors are called upon to chronicle the doings of the Centenary of the introduction of the Chinese Primrose, we may confidently expect to see a hybrid raised from Primula sinensis, and when that happens, "sports" and reversions will make their appearance just as they do now in the case of the Chrysanthemum.

As in the case of the Chinese Primrose, the first knowledge we had of the Chrysanthemum was in the form of cultivated examples. The plants introduced by Blancard were cultivated specimens. Collectors in early days had little opportunity of penetrating into the Celestial Empire, and even Fortune was compelled to limit his investigations to a great extent, to the gardens, bazaars, and suburbs of large cities. But as the country becomes opened up to scientific travellers and collectors, we may hope not only to obtain the originals of many garden plants, but also many new plants of the greatest interest to horticulture as well as to science.

We have already mentioned what Dr. Henry, about the same time as Abbé Delavay, has done for us in the discovery of the wild Chinese Primrose, the wild Banksia Rose, and various other plants. Chrysanthemum indicum is a common weed in China, which has undoubtedly been made use of, together with C. morifolium and others, by the Chinese gardeners in the production of the garden varieties which now attract so much attention. Our illustration (fig. 113, p. 565) is taken from a specimen placed at our disposal by Dr. Augustine Henry, who also obliges us with the following note referring to his specimens:—

"In the *Index Floræ Sinensis*, pp. 437-8-9, Mr. Hemsley classifies the Chinese specimens of Chrysanthemum in the Kew Herbarium and British Museum under the three following headings:—1, C. sinense, Sabine; 2. C. sinense, Sabine, var.? vestitum, Hemsley; 3. C. indicum, Linn.

"Of my Hupeh specimens, No. 960, from the Patung Mountains, and No. 3181 were identified at Kew as C. sinense, Sabine; No. 3681 is common in field ditches and on the banks of the Yangtze, near Ichang; it is a very fragrant plant, flowering in October; the flower is yellow.

"No. 887 was identified as C. indicum. 'It is a common wild plant, flowering in November.' (I quote from my notes.) I think it is the same as No. 3181.

"Nos. 3051 and 2812 were brought to me by native collectors. The flower in them is double, and they are probably cultivated specimens. Identified as C. sinense, Sab., fl.-pleno.'

"Nos. 1115 and 3102 were identified as C. sinense, var. vestitum, which is, perhaps, a distinct species. [Mr. Hemsley now considers it typical wild sinense.] This plant is very restricted in its habitat, being confined, so far as my observation went, to the mountains in the immediate neighbourhood of Ichang. The specimens were collected in an exposed situation on almost bare rock on a conglomerate mountain, 1000 feet to 1500 feet elevation above sea-level, 10 miles south of Ichang. The flower has a yellow disk and a white ray, and the plant blooms in October and November.

"No. 6765a, identified at Kew as C. indicum, Linn., of which a specimen is now in the hands of Dr. Masters, was gathered by me on August 28, on rocks in a mountain coniferous wood, at an elevation of 8500 feet above the sea-level, at Yin-Yü-Ho, in the Fang district of Hupeh. The flowers are yellow. At this high altitude, the plant is very graceful, delicate, and small in stature. It has quite a different aspect from the plant which occurs in the ditches of fields, and along the banks of the Yangtze (No. 3081) near Ichang, at levels of under 1000 feet.

"The Chrysanthemum is known to the Chinese as the Chü-hua, and dried flowers of certain cultivated kinds are much used in medicine, and form a considerable article of trade, there being an annual export of 18 tons from Tientsin, 22 tons from Hankow, and 13 tons from Ningpo. The Ningpo variety, known as Hang-chü, because it comes from the adjacent Hang-chow prefecture, is a yellow-flowered variety, and sells at three times the price of the other kinds. There are specimens of these varieties, used as drugs, in the Pharmaceutical Museum in Bloomsbury Square, but they have not yet been investigated or identified. In addition there is a specimen there labelled Kan-chü, *i.e.*, 'Sweet Chrysanthemum.' This is exported from Canton to the amount of 3 tons yearly; and the flowers are probably those of some plant like Cotula anthemoides."

"Forest Flora of South Australia."—Mr. J. E. Brown has lately published the ninth part of his illustrated work on this subject. The plants represented are Dodonæa viscosa, remarkable for its clusters of scarlet three-winged seed-vessels; Acacia notabilis, a species with stalked, oblong, obovate phyllodes, and small globular flower-heads, arranged in axillary racemes; Eucalyptus rostrata, a species with stalked, lanceolate leaves, stalked umbels of white flowers, each provided with a calyx that is prolonged at the top into a beak; E. Lansdowneana (Von Mueller and J. E. Brown), a newly-discovered species of shrubby habit, with dark crimson flowers, which render it very ornamental, and suitable for decorative planting wherever circumstances permit; Templetonia retusa, an evergreen shrub, with red or yellow flowers, formerly cultivated in English greenhouses, but rarely seen now, though the beauty of its large papilionaceous flowers ought to have secured for it wider appreciation.



Fig. 113.—Chrysanthemum indicum: wild Chinese plant, the origin of the garden Chrysanthemum. (From Dr. Henry, Ichang.)

The Chairman of the Floral Committee.—A distinguished French visitor to one of the recent meetings of the Royal Horticultural Society gave, at the meeting of the Paris Society, on his return, an account of his reception, and of the people he met. Among others, he speaks of the President of the Floral Committee as "*célèbre romancier*." Our visitor must have become confused!

"Botanical Magazine." — The November number contains coloured figures of—

Acineta densa, tab. 7143.—A plant introduced to the Royal Horticultural Society, by Mr. Skinner, in 1849, and still in the front rank of decorative Orchids.

Eucharis Bakeriana, tab. 7144.—A plant described and figured in our columns in 1890, p. 416, fig. 61.

Iris sindjarensis, tab. 7145.—A species native to Mesopotamia, with leaves like a Leek, and slaty-lilac beardless flowers.

Arundinaria Simoni var. variegata, tab. 7146.—A hardy species, native of Japan, and which has been called Arundinaria Fortunei, by Fenzi, and Bambusa Simoni, by Carrière. The flowering specimen now figured is from Messrs. Paul, of Cheshunt.

Pereskia aculeata, tab. 7147.—Though so common a plant in gardens, and so long cultivated, it rarely produces flowers of its own, though it is commonly made to bear those of the Epiphyllum. The flowers, as here shown, are about 2 inches across, the numerous petals creamy-yellow, margined with pink. The colour of the flower is, however, noted as very variable. This Cactus is a native of Tropical America, and is remarkable among its congeners for the production of flat leaves of a lanceolate form.

Linnean Society.—On November 6, Prof. Stewart, president, in the chair. Mr. E. M. Holmes exhibited and made remarks on some little known Algæ, collected at Taymouth and on the Devonshire coast. Mr. George Murray exhibited and described the peculiarities of some galls of Rhodymenia. A paper was then read by the Rev. Prof. Henslow, entitled "a Contribution to the study of the relative effects of different parts of the Solar Spectrum on the assimilation of plants." The paper was illustrated by diagrams, and a discussion followed, in which the president, Prof. H. Marshall Ward, Dr. D. H. Scott and others took part. The next meeting of the Society will be held on November 20, at 8 p.m. An evening meeting will be held on Thursday, November 20, at 8 p.m.

James McIntosh.—Those whose privilege it was to have made the acquaintance of this gentleman, will hear of his death, on the 5th inst., at Walton, with great regret. Mr. McIntosh who was in his seventy-seventh year, was an ardent horticulturist of wide sympathies and large knowledge, but devoting special attention to the culture of Lilies, Roses, Rhododendons, and some florists' flowers. Partly from ill-health, and partly from his retiring disposition, Mr. McIntosh, of late years especially, was little seen in the horticultural circles. The simplicity and sweetness of his character, his modesty, and his ready generosity in all cases when an appeal was made to him for help, whether for horticultural purposes, or for charitable uses, endeared him to all who came in contact with him. The birds seem to have arrived at the same conclusion as to the kindliness of the man, for they would await his return home, and come to his call, and even alight on his shoulder, as if in his presence they knew not what timidity meant. His garden at Oatlands' Park, Walton, was described in our columns in December 18, 1875, the illustration containing a portrait of the owner.

The Royal Society.—The names of the following persons, selected by the Council, will be submitted for ratification on December 1:—President, Sir William Thomson, D.C.L., LL.D.; Treasurer, John Evans, D.C.L., LL.D.; Secretaries, Professor Michael Foster, M.A., M.D., and Lord Rayleigh, M.A., D.C.L.; Foreign Secretary, Archibald Geikie, LL.D. Other Members of the Council: Professor William Edward Ayrton, William Henry Mahoney Christie, M.A., Professor W. Boyd Dawkins, M.A., James Whitbread Lee Glaisher, D.Sc., Hugo Müller,

Ph.D., Professor Alfred Newton, M.A., Sir William Roberts, M.D., William Chandler Roberts-Austen, F.C.S., Professor Edward Albert Schäfer, M.R.C.S., Sir George Gabriel Stokes, Bart., M.A., Lieut.-General Richard Strachey, R.E., Professor Joseph John Thompson, M.A., Professor Thomas Edward Thorpe, B.Sc., Sir William Turner, M.D., Professor Sydney Howard Vines, M.A., General James Thomas Walker, C.B.

Free Translation.—Writing to *Notes and Queries*, a lady correspondent says:—"Our gardener has just brought in 'the Mile o' Waste Pears.' Looking into the basket, we perceive this novel appellation to be an original rendering of 'Marie Louise.' But on a mild correction being offered, he insists that 'that's the right name'; and we remember that his predecessor used to grow 'Glory de John' Roses, and when he was asked for Auriculas, looked quite puzzled for a moment, then brightened up, and said, 'Ricklusses, ma'am?'"

Herr Niepraschk.—The death of this gentleman is announced as having taken place on October 14. Herr Niepraschk had been for nearly thirty years Director of the Flora Garden at Cologne.

Palermo.—An international exhibition on a large scale, in which horticulture is to play a considerable part in the shape of continuous as well as of occasional shows, is to be held in this city in March and April next.

Practical Physiology.—Dr. Henri Michells has published a translation in French of Dr. Detmer's very useful handbook. It is specially destined for use in the laboratory, and is designed for the purpose of assisting students to observe and experiment for themselves. The French translation is a boon to those to whom German is not familiar. It is published by Reinwald, of Paris, and may be had of Williams & Norgate.

Dr. Janka.—The death of this botanist in his fifty-fifth year is announced. Dr. Janka was keeper of the botanical department of the National Hungarian Museum at Buda-Pesth. His name will be perpetuated in that of Jankea.

Chrysanthemum Show at York.—A correspondent informs us that at the forthcoming Chrysanthemum Show in York, there will be a stall for the sale of flowers, &c., the proceeds of which sales will be presented to the Gardeners' Royal Benevolent Institution, and at which contributions of flowers, either made up into buttonholes and sprays, or loose, will be thankfully received. The parcels of such when sent, should be addressed "The Secretary, Exhibition Buildings, York," and should arrive on the mornings of either the 19th, 20th, or 21st inst. Last year a similar stall was held for the benefit of the Gardeners' Orphan Fund.

The Pomological Society of France.—The annual meeting was held at Limoges on September 22. Among other proceedings, we note that Pitmaston Orange Nectarine, having been duly tested, was removed from the list, presumably as of inferior quality.

Birmingham and Midland Counties Gardeners' Association.—It is gratifying to note the good work that is being done in the way of educating the rising generation of gardeners, evidence of which is to be found in the large numbers that attend the meetings, and the eager and respectful attention which is bestowed upon the lecturers. The library, already an extensive one, has been greatly enriched by the addition of a new and elegant copy of *Sowerby's English Botany*, presented by A. F. Osler, Esq., who was likewise one of the earliest supporters of the Association, and is an ardent advocate for giving increased facilities to the rising generation of gardeners for the acquisition of the most advanced practical and scientific information that can possibly be obtained by the careful perusal and study of works of the highest authority. Another important work, the *Herefordshire Pomona*, has likewise been added by special subscriptions collected for the purpose. The library, which is a lending one, contains about 250 excellent books, and is highly appreciated by the members, sixty of whom borrowed and perused 224 books during the year; this latter is most gratifying, inasmuch as it furnishes indisputable evidence that the members are not slow to avail themselves of these opportunities of obtaining knowledge appertaining to their own profession.

Chrysanthemums at Messrs. Pearson & Son's, Chilwell, Nottingham.—The annual exhibition of Chrysanthemums at Messrs. Pearson & Son's, Chilwell nurseries, which opened on the 3rd inst., is remarkable for the number and quality of the blooms, each section of Chrysanthemums being well represented. The Japanese and incurved varieties are especially good. The plants are arranged in a house of 100 feet long by 30 feet wide. To the right and left of the entrance, the trained specimens are staged; they average from thirty to eighty fine blooms on each plant. Mr. Holmes is very fine; Coquette de Castille, a perfect specimen of a trained plant; Empress of India, Golden Queen, John Salter, La Frissure are all very fine plants; E. Molyneux is a grand specimen plant. Amongst the specimens of incurved varieties, the most prominent are those of the Queen family, notably John Doughty and John Lambert; whilst The Princess, John Salter, and Barbara, in the incurves, and many of the Japanese varieties, are quite up to exhibition standard. The Anemone-flowered varieties are good specimens, in fine bloom. There are many new varieties in the collection, but they were not sufficiently advanced to allow of a judgment being passed on them.

Mr. J. S. Gray, of York.—It may be of interest to some of our readers to know that Mr. J. S. Gray, the well-known manager at Messrs. Backhouse's, the York Nurseries, was recently returned without opposition as a councillor for the City of York. He represents the Micklegate Ward, which is, perhaps, one of the most important wards in the city.

A Sacred Orchid.—M. Charles André in *Le Journal des Orchidées*, gives an account of his experiences when on a botanical expedition by the shores of the river Amboan, which, though interesting to read when safe at home, gives a good idea of the unexpected dangers often incurred by botanical collectors. M. André was in search of Cœlogyne asperata, and happened to be in a Dyak hut when the natives were sorting rice preparatory to sowing it. In the evening a noisy procession entered the hut, and the females who were among them laid with much ceremony large bouquets and garlands of the longed-for Orchid on and around the stores of rice. Such was the quantity of the blooms, that the perfume was so powerful as to drive the explorer out of the house to spend the night in his boat. He afterwards heard that seed-time as well as harvest is an important season to the natives, who are dependent on their crops, and that he had witnessed rejoicings caused by the abundance that year of the Cœlogyne asperata blooms which were believed to herald an equally fertile harvest. When, some time later, M. André returned to the spot with (among other treasures) a load of the all-important Orchid, he found himself the subject of passionate grief and hatred, and that his only chance of safety was in a generous distribution of money and tobacco and a speedy flight. He had, in the opinion of the Dyaks, committed an act of sacrilege in gathering plants sacred to them, the lives of which they believed were in some way connected with their own.

"The Silva of North America."—We hear that the first volume of this remarkable book, of which we have been privileged to see proof sheets and illustrations, is ready for publication. We shall shortly give a fuller notice of Mr. Sargent's grand work.

Paris Chrysanthemum Show.—This will be held in the Rue de Grenelle, No. 84, from November 20 to 23 inclusive.

Cirropetalum Mastersianum, Rolfe.—A very attractive and interesting species, introduced from the Dutch Indies by M. Linden. The flowers, are in fascicles, each nearly 2 inches long, ligulate, oblong, and of a peculiar reddish-yellow tint, according to the figure in *Lindenia*, t. 255.

Chrysanthemums, etc., at Brussels.—The Royal Floral and Linnæan Societies of Brussels got together a really fine and well-arranged display of Chrysanthemums, Cyclamens, Carnations, and Orchids, in the Théâtre du Parc, on Sunday, November 9, and following days. The Chrysanthemums were all grown naturally, and not run up, and bearing two or three abnormally large blooms; or twisted round stakes to make them appear dwarf. Caradoc, exhibited by M. De Beucker, of Antwerp, and Phatzer, by M. de Lombaerde, of Schærbeck, are worthy of mention. Too great praise cannot be given to the large, varied, and excellent exhibits of M. Fiordi, M. Fl. Stepman de Messemaeker, Rue des 4 Vents, Molenbeek, Brussels, a clever floral artist, and once head gardener at Laeken. M. F. Dewolfs, Boitsfort, the great Rose grower, also had a fine show; and M. Tamar, M. L. P. de Langhe-Vervana, and others, contributed largely and well. In the side-gallery, M. Peeters, Brussels, who was the only exhibitor of Orchids, had a grand bank of these plants. In this division a novel feature was made by the exhibition of a large number of oil paintings of groups and bouquets of Chrysanthemums painted by several artists for exhibition. In an adjoining room the Cyclamens and Carnations were displayed. The white Carnation exhibited by M. Auguste Clayes, of Ixelles, appearing to be a floriferous winter bloomer.

The Treasurer of the Royal Horticultural Society.—Some anxiety is naturally felt as to the selection of a gentleman to replace Mr. Morris. The task is one which demands business capacity, attention to detail and no inconsiderable expenditure of time and labour. A treasurer cannot afford to indulge in sentiment, but while he must be severely practical, he must be in sympathy with the objects of the Society. In all these particulars, however, the task has been much simplified by the labours of the outgoing treasurer. Only those on the spot, can adequately realise what has been done for the Society for the last two years by the honorary officers Rev. W. Wilks and Mr. Morris. On them has fallen the duty of carrying into execution the measures enacted by the Council. On them has very largely devolved both the initiation and the superintendence of those measures which have done so much to restore confidence in the old Society. Mr. Morris resigns office by reason of being officially called on to organise a series of Botanic Stations in the West Indies, with the especial object of developing the resources of those islands. This will involve an absence from England of some months. May he be encouraged in the performance of his new duties by the recollection that he has earned the gratitude of the horticulturists at home, who while they may have objected to this or that detail, have always recognised the singleness of purpose and the unflagging devotion to duty which have signalised Mr. Morris' career as Treasurer.

Chiswick Gardeners' Association.—We are pleased to learn that the Concert recently organised by this Association in aid of the Gardeners' Orphan Fund, has resulted in a balance of nearly £20.

HOME CORRESPONDENCE.

FLOWERING OF SEAFORTHIA ELEGANS.—We have a plant of Seaforthia elegans with one flower-spike on it. The plant is about twenty-five years old, and it is growing in an ordinary cool conservatory. The "raceme" (if I may use this term) came out of the main stem about 4 feet below the foliage that crowns the plant, something similar to the illustration in last Saturday's *Gardeners' Chronicle* of Kentia Forsteriana. Although it is fully a month since the flower-spike appeared, up to the present there are no signs of any organ of fertilisation. The plant is growing in a tub. I have not hitherto seen a plant of this Palm in flower or fruit. Will you kindly say if you think it will ripen its seed under the present circumstances [probably], and if any special cultural attention is required for this purpose? My employers are anxious to know if I shall be able to get any fertile seed from the plant—hence my troubling you. Any information you can give me in "Answers to Correspondents" will be valued by *Henry P. Clayton.*

YOUNG ROOKS.—I have read your correspondent's remarks on p. 506, and would remark that the birds were not renewing their old nests, but building new ones in other trees, where there have not been nests for a space of three years. They have also built three new nests in a large tree, which the rooks have not been known to build in before, and they are hatching now; and one of the garden men brought me a young rook on October 27, which had been blown out of the nest by the wind. *G. Cliffe, Shorcham Place.*

ARBUTUS UNEDO.—The finest specimens I have ever seen of this really ornamental tree are at Orwell Park, where they stand on a high mound of earth, that was formed for the purpose of shutting out some offices from view. These shrubs are planted on the face and top of the mound, and answer the purpose of a blind admirably. For exposed positions, the Arbutus unedo is not the subject to plant, it not being sufficiently hardy, and requiring some amount of shelter; but in warm situations, few shrubs can rival it, and yet how seldom it is that one finds it in gardens. Although the best time to plant evergreens is in very early autumn or during April, the Arbutus may be moved with safety now, as plants that have been prepared by previous transplanting, lift with plenty of roots and good balls, and quickly become re-established. *J. Sheppard.*

BLACKBERRIES AGAINST A SOUTH WALL.—I planted three plants of Rubus laciniatus in January, 1883, against a south wall at 16 feet apart, and during the last few years they have given entire satisfaction, showing that this fruit is well worth growing against a wall with a warm aspect, and affording it good cultivation. The foliage is very ornamental, so that the plant would improve the appearance of many a piece of wall otherwise bare or unsightly. This year we have gathered from the three plants 41 quarts of fruit. We gathered the first quart in August and continued to the end of October. The longest growth made this year was 27 feet, and I find that it is these new growths that produce the finest fruit. In the summer the fruit is better tie dinnear the wall and in the least crowded places. The species may be increased by seed or by division of the root. *W. Kipps, Walton Lea, Warrington.*

THE LATE GUILDHALL FRUIT SHOW.—It may interest many of your readers to know that Messrs. J. Russell & Sons, photographers, 17, Baker Street, Portman Square, were successful in taking a series of admirable views of this famous exhibition, and that any one desirous of having them as a souvenir of the occasion, should apply at the address given above. *R. Dean, Ealing, W.*

ABNORMAL FRUITING OF PLUMS.—Thinking it may interest some of your readers, I would like to mention, in confirmation of Mr. Squibb's communication respecting his Pear tree, see p. 524, *Gardeners' Chronicle*, November 8, that we have lately been sending into market good Victoria Plums from our standards, the produce of the second flowering. The first blossoms and foliage were entirely devastated by caterpillars, our remedy for which was to syringe the trees with petroleum and water, making an immediate clearance of all insect pests without doing damage in any way to the trees, as is proved by the splendid second growth they made, which ripened and flowered profusely towards the end of the month of July, producing a good crop of Plums of average size, which realised 10s. and 18s. per bushel wholesale. It might be useful to know if any of your readers have met with the like experience. I may say that we had in fruit from 400 to 500 trees, the ages of which were from three to nine years, and some of them produced over half a bushel each.—*Parrott, Brothers, Nurserymen, Normandy, Surrey.*

FREESIAS FROM SEED.—It may not be generally known that these beautiful fragrant flowering plants may be grown to as great a perfection in six months from seed as from bulbs; in fact, sowing the seed is to be preferred. The seed should be sown any time during March, or April, or May in a pan or box, employing a light rich compost and good drainage, the latter a very important point in raising them, The pan or box should be placed in a pit which has a temperature of about 60° to 65°, and in about fifteen days germination will have taken place, and will be indicated by the appearance of the grass-like shoots. As soon as large enough to handle, the seedlings should be pricked-off into pans or into pots, 60's, an inch or two apart, and put back into the pit; and as soon as they have made a good number of roots, they should be finally shifted into 48's and placed in the same pit until they have recovered from the disturbance, after which they should be transferred to a cool frame, and after they are sufficiently hardened, put under the protection of a wall, or, if need be, in the open air. Here the plants should be watered regularly, a little manure-water being afforded them occasionally. When the weather becomes cold, the pots should be transferred to a cold pit or greenhouse, and brought into flower in succession as may be desired. Freesias are very attractive subjects for filling vases, &c., in the dwelling, where the delicate and agreeable violet-like colour is usually much esteemed. A good bank of them is always an attraction in the greenhouse, and equally so in dinner-table decorations. By sowing seed at intervals, and judicious management in the forcing of these flowers, they may be obtained in bloom all the winter. *W. A. Cook, Compton Basset.*

NATIONAL CHRYSANTHEMUM SOCIETY.—May I be allowed to express the desirability (which is very generally felt among the patrons of the Chrysanthemum Society) of obtaining a more fitting place than the Aquarium to hold their show in. The associations connected with the Aquarium are such as to debar very many of the supporters of the National Chrysanthemum Society from taking any part in it. I feel sure that any loss that might be sustained by the Society in changing its place of exhibition would be fully made up to the amount now contributed by the Aquarium Company; and should this not be the case, I should be pleased to contribute, with others, to meet any reasonable amount of loss, and offer the sum of £5 as a first instalment. *James L. Wood, Wm. Wood & Son, Wood Green, N.*

DRYNESS OF SOIL OF FRUIT TREE BORDERS.—Whether we examine the borders by the side of walls, or those in the open quarter, all will be found this year to be dry at a short distance from the surface. This is not of much consequence as regards old trees, if provision be at once made for letting into the soil the winter snows and rains, and this may be done either by slightly forking the caked surface all over, or by thrusting a sharp tined digging fork, in a very slanting manner, into the soil, in places 1 foot or a little more apart, and slightly raising it—the object of this loosening of the surface soil being to allow of moisture sinking where it falls, instead of running off entirely, or collecting in pools. The soil for a yard in width alongside of fruit walls always gets unhealthily dry for several feet deep, and leads to much loss of buds on stone-fruit trees of all kinds, and this strip is seldom sufficiently moistened by the rain or snow which fall on it. It is good practice, therefore, after loosening the crust to saturate that part of the border with water by hose or water-barrow. Failing these, the chance may occur of heaping snow on the border from the walks, and vegetable border in the immediate front of the fruit border. Let no one suppose that this will do the trees any harm; on the contrary, the ground will get well moistened to a good depth, and the lowering of the temperature of the soil by the snow and snow-water, will tend to keep the buds at rest till a later period than would be the case in a border not so covered. Putting heaps of snow over the roots of any kind of tree which naturally comes into bloom dangerously early, has the effect of retarding the start, and may advantageously be followed in garden and orchard. *A. P. E.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.



CHRYSANTHEMUM growers have once again celebrated the centenary of the introduction of their favourite plant. The National Chrysanthemum Society's Centenary Festival, which opened on Tuesday last, and closed last night, was very well attended by growers and others and although the date fixed for the show proved a little late for many exhibitors, still, excellent blooms were staged as a general rule, but the display cannot be ranked as high as that of last year, and the competition in several classes shows a falling off.

The Royal Aquarium, Westminster, in which the exhibition was held, as usual, is certainly one of the most unsatisfactory places that could be selected for the proper display of the beauties of the flowers, as the peculiar and dull light under which the inspection has to be made lends a false colouring to many of the blooms, and tends greatly to destroy their brightness; moreover, the exhibits are very much split up, and during the afternoon and evening the incessant noise caused by the various entertainments and their "touts" is trying to one's nerves in a large degree. Plants were very satisfactory in all classes, and the groups of small-grown Japanese were specially fine.

The opening ceremony was performed by Lady Brooke.

During the show there were conferences, and an exhibition of books, drawings, &c., relating to the Chrysanthemum was also made.

On Thursday evening, as we went to press, there was a commemorative banquet in the St. Stephen's Hall.

The Centenary Class.

This was the greatest feature, prizes of £25, £20, £15, £10, and £5, being offered, and there were as many as seventeen exhibitors of a collection of twenty-four incurved, and twenty-four Japanese, distinct, which comprised it. We must own to a certain sense of disappointment in the quality of the blooms staged here; and even in the fine collection from Messrs. W. & G. Dover, of Fareham, whose Japanese were remarkable for large size and bright colours, there was a weakness noticeable in the centre of some of the flowers, but to some extent the lateness of the show for the season may be held accountable, and then it is a large order—twenty-four of each section of the varieties shown; the following were really good, however:—Mrs. Alpheus Hardy, Sarah Owen, Etoile de Lyon, Stanstead White, Gloriosum, Condor, and Mons. Bernard. The incurved flowers, which were very even, and of moderate dimensions, embraced fine representatives of Princess of Wales, Nil Desperandum, Lord Alcester, Emily Dale, Jeanne d'Arc, Princess of Teck, Mrs. N. Davis (grand), Miss M. A. Haggas, and Lady Hardinge; while Violet Tomlin was a capital flower in form, &c., but a little past its best. As was only natural in so large a number of entries, the 2nd prize lot was not greatly inferior to the 1st; it came from Mr. Richard Parker, gr. to J. Corbett, Esq., Impney, Droitwich, but the incurved blooms were unevenly staged, and thus lost their full effect. Japanese were large and fresh, and included Sunflower, Carew Underwood, Baronne de Prailly, Etoile de Lyon, Avalanche, Belle Paule, Stanstead White, and Madame Baco. The incurved flowers were best in Hero of Stoke Newington, Mrs. Heale, Mrs. N. Davis, Princess of Wales, Empress, Golden Empress, Lord Alcester, Prince Alfred, Charles Gibson, and Lord Eversley, all of which, so far as form went, left nothing to be desired. The 3rd in merit was shown by Mr. Gibson, gr. to J. Wormald, Esq., Morden Park, Surrey, who had a very nice lot of incurved blooms, including Cherub, Refulgens, Princess Teck, Barbara, Mrs. Coleman, Hero of Stoke Newington, Nil Desperandum, Princess of Wales, Mrs. Shipman, and Lady Hardinge; while of the Japanese, which were a fair average lot of good deep colouring, Mrs. F. Jameson, Sunflower, Mr. Burnett, Mons. Bernard, Mrs. Wheeler, Boule d'Or, and Maiden's Blush were among the best. Mr. J. Lambert, gr. to Colonel Kingfield, Onslow, Shrewsbury, who was

placed 4th, had a specially fine Lord Alcester; and among others Violet Tomlin, Alfred Salter, Refulgens, Miss Haggas and Mrs. Heale may be named. Of Japanese, which were smaller but very bright and fresh, Etoile de Lyon, Mrs. Wheeler, Mrs. F. Jameson, Belle Paule, E. Molyneux, and Val d'Andorre were the chief. The 5th prize fell to Mr. J. Meyers, gr. to the Earl of Sandwich, Huntingdon, who had large incurved flowers, but some was weak in the centre; Novelty, Mrs. N. Davis, Miss Haggas, Violet Tomlin, John Lambert, and Mrs. Coleman, being the best, while the Japanese were of average merit in all respects. It should be stated that every competitor in this class was presented with a Bronze Centenary Medal.

The Societies' Competition.

This is a class provided for horticultural and Chrysanthemum societies, and each society's exhibit is a selection of blooms grown by its members, whose names are also stated. Forty-eight blooms are asked for in twenty-four, and fewer than eighteen varieties, and twenty-four Japanese, distinct, for which the 1st prize consists of £10 cash for division among the growers, and a Challenge Trophy to be held by the President of the Society for one year. As might be expected, first-rate flowers are entered in this competition, and although the display was not so fine or so large as it was last year, the flowers included were among the finest in the whole show. The St. Neots Society won the leading honours this year, blooms being contributed by Messrs. Myers & Petfield. Among the incurved flowers were solid and large specimens of Violet Tomlin, Mrs. Coleman, Jeanne d'Arc, Emily Dale, Miss M. A. Haggas, and Mrs. Shipman, some of which were duplicated. The Japanese included solid and fresh blooms of Madame C. Audiguier, Sarah Owen (a trifle past its best), Etoile de Lyon, Sunflower, Lady T. Lawrence, Madame Baco, and Maiden's Blush. The Wimbledon Society (Messrs. Gibson, Faulkener, and Beckett), was 2nd, with another fine lot, the Japanese including large flowers of Grandiflorum, Etoile de Lyon, Criterion, Mrs. F. Jameson, Val d'Andorre, Maiden's Blush, and E. Molyneux; while of incurved, some, although smallish, were very fine such as Princess Beatrice, Cherub, Princess Teck, Mrs. Shipman, Barbara, Mrs. Coleman, Empress, &c. The Cheshunt Society came 3rd, but no names of the members were given on the card; the incurved flowers here were not very satisfactory, as in many the centres were not up—Queen of the Dales and Lord Alcester being the best. Of the Japanese, the same remark may also be made; Souvenir d'Amiel, Carew Underwood, Fimbriatum, and Mrs. Wheeler were, however, satisfactory samples.

Cut Blooms.

Incurved.—The leading class was for forty-eight, in not less than twenty-four varieties, or more than three of one variety, and the Bronze Centenary Medal was presented to all the competitors. The chief prize was won by Mr. W. G. Ray, Mount Pleasant Nursery, Tenham, near Sittingbourne, with a very fine lot of remarkably regular blooms. All were meritorious, but the leading specimens were to be seen in Empress of India, Lord Alcester, Emily Dale, Princess of Wales, Empress Eugénie, Alfred Salter, Hero of Stoke Newington, Golden Empress, Lady Hardinge, Lady Dorothy, Mrs. Shipman, Princess Teck, and Mrs. Heale. Mr. R. Parker was 2nd, following closely, and having fine flowers of Lord Alcester, Empress of India, Golden Empress of India, Queen of England, Princess Teck, Hero of Stoke Newington, Charles Gibson, Violet Tomlin, and Mrs. Heale; some of the others were weak in the centre. Mr. H. Shoesmith, gr. to M. Hodgson, Esq., Shirley Cottage, Croydon, was 3rd, having small blooms and a few a trifle ragged, Hero of Stoke Newington, Golden Empress, John Salter, Miss Haggas, Queen of England, and Mrs. Heale being the best represented.

The best stand of twenty-four was sent by Mr. M. Sullivan, gr. to D. B. Chapman, Esq., Downshire House, Roehampton, and a very neat, regular lot they were, the varieties Golden Empress, Empress, Refulgens, Princess of Wales, Violet Tomlin, Prince Alfred, Nil Desperandum, Mrs. N. Davis, and Emily Dale being very well represented. The 2nd honours fell to E. Saunderson, Esq., St. Mary's Road, Harlesden, and his lot ran the 1st prize collection very closely, and was specially neat, Barbara, Violet Tomlin, Alfred Salter, Jeane d'Arc, Emily Dale, Jardin des Plantes, Lord Alcester, and Princess of Wales—all being excellent. Mr. M. A. Ives, gr. to C. E. Jukes, Esq., Hadley Lodge, Barnet, was 3rd, having as his best Lord Alcester, Golden Empress, Hero of Stoke Newington, Miss Haggas, Refulgens, Mrs. Heale, and Jeane d'Arc.

In the class for eighteen blooms, distinct, from which the larger flowered sorts, as The Queens, Empresses, Lord Alcester, &c., were excluded, there was a capital lot staged by Messrs. W. & G. Drover, which included Mr. Shipman, Nonpareil, Beauty, Lady Carey, A. Lyne, Mrs. Heale, Miss Haggas, and Mrs. N. Davis. Mr. Sullivan came 2nd, with smaller flowers, but a bit neater; Lord Eversley, Hero of Stoke Newington, Nil Desperandum, Refulgens, and Barbara being good; 3rd, Mr. N. Russell, gr. to Dr. C. F. Lewis, Henfield, Sussex, following closely, whose Empress Eugénie was very fine; Barbara and Lady Hardinge were very good.

The best twelve blooms, distinct, came from Mr. W. H. Lees, gr. to the Duchess of Montrose, Sefton Lodge, Newmarket. A capital lot of large specimens, Queen of England, Lord Alcester, A. Salter, Empress and Golden Empress; Lord Wolseley and Princess of Wales being fine. 2nd, Mr. C. Cox, gr. to J. Trotter, Esq., Buckenden Grange, Hertford, with a lot in a very slight degree inferior, Violet Tomlin, Golden Empress, Lord Alcester, and Princess of Wales being good.

In another class for twelve blooms, from which exhibitors in some of the foregoing classes were excluded, Mr. H. Brown, gr. to E. C. Barclay, Esq., Roydon Lodge, Roydon, Essex, was 1st, with a very pretty lot, of fairly large dimensions, Barbara, Mr. Brunlees, Jardin des Plantes, and Lord Wolseley being the best; 2nd, Mr. H. A. Page, gr. to F. Crisp, Esq., White House, New Southgate, N., with smaller but still neat blooms, in which the leading varieties were Mr. Brunlees, Miss Haggas, and Nil Desperandum.

The best stand of six, one variety, was Miss Haggas, from Mr. C. Cox, who had really grand blooms; Mr. B. Calvert, gr. to J. Archer Houblen, Esq., Great Hallingbury, Bishop's Stortford, following well with Princess of Wales.

Mr. J. Lambert, gr. to Colonel Wingfield, Onslow, Shrewsbury, had six superb flowers of John Lambert, which won for him the 1st in their class; while Mr. Russell had the best stand of Mrs. Coleman, in well-coloured blooms.

Japanese.—There were as many as thirteen exhibitors in the leading class for forty-eight Japanese blooms, not less than twenty-four varieties, to all of whom a Centenary Medal was presented. The competition was naturally close, and Mr. G. Hawkins, gr. to W. H. Fowler, Esq., Claremont, Taunton, who was awarded 1st, justly deserved the honour. His flowers were very fresh and bright, and well-coloured, the leading varieties including E. Molyneux, Stanstead White, Etoile de Lyon, Avalanche, Mrs. J. Laing, Sunflower, Japonais, Madame C. Audiguier, Puritan, Baronne de Prailly, Sarah Owen, La Vanité, Madame Baco, Soleil Levant, Lady T. Lawrence, Mrs. F. Jameson, and Val d'Andorre. A word of praise should also be given to this exhibitor for the manner in which he names his blooms. The names are printed on cards, and are held up on a frame at the back of each line. Messrs. W. and G. Drover came 2nd, with a very fine lot in colour, and generally of good quality, the blooms being also large. Mrs. Wheeler was very fine, and of others Stanstead White, Sunflower, Etoile de Lyon, Mrs. J. Laing, Pelican, Sarah Owen, Souvenir d'A. Amiel, Japonais, Ralph Brocklebank, Comte de Germiny, Jeanne Delaux, Madame Baco, and Stanstead Surprise were fine samples. Mr. G. King, gr. to W. Farlane, Glenchees, was awarded 3rd for a very even bright lot of uniform size, in which were Stanstead Surprise, Madame J. Laing, Album fimbriatum, W. W. Cowles, Japonais, Sarah Owen, Madame Baco, Mr. Cannell, Mons. Bernard, Etoile de Lyon, and Mdlle. Lacroix.

Mr. Hawkins also showed the best twenty-four, having another fresh and bright collection, the most conspicuous including Soleil Levant, Sarah Owen, Sunflower, Madame C. Audiguier, Japonais, Jeanne Delaux, and Baronne de Prailly. Mr. C. J. Waite, Glenhurst Gardens, Esher, was 2nd, with a fair sized lot of very finely coloured flowers, Madame C. Audiguier was perhaps his best, other good specimens being Etoile de Lyon, Avalanche, E. Molyneux, Stanstead White, Baronne de Prailly, Val d'Andorre, Lady T. Lawrence, and Gloriosum. A good lot from Mr. B. Calvert were placed 3rd, and Madame C. Audiguier, Thunberg, Mrs. Wheeler, S. Owen, and Maiden's Blush were fine.

The class for a collection of twelve blooms was well sustained, and competition was close throughout, richly-coloured and large flowers from Mr. H. Brown winning the 1st place, Pelican, Etoile de Lyon, Ed. Molyneux, Mrs. H. Cannell, Avalanche, Belle Paule, and Mrs. Wheeler being the best. They were rather crowded on the board. With smaller flowers, Mr. T. Bettesworth, gr. to R Ewing, Esq., Burton Grange, Cheshunt, was 2nd, showing as his best, Etoile de Lyon, Stanstead White, Avalanche, Meg. Merrilies, and Ralph Brocklebank.

In the class for twelve blooms (exhibitors in the foregoing classes excluded), Mr. J. Doughty, gr. to Mr. Tomlin, Angley Park, Cranbrook, Kent, led with capital examples, Mrs. E. W. Clark, Mons. Bernard, Etoile de Lyon, Grandiflorum, Sunflower, Avalanche, Carew Underwood, and Meg Merrilies, being the best; 2nd, Mr. Lees, with smaller blooms, in which Lady Lawrence, Sarah Owen, and Etoile de Lyon, were well represented.

The class for six blooms of one variety, white, brought forth some good blooms, Mr. T. Bettesworth leading with Avalanche, and Mr. J. Hewett, gr. to H. P. Mackeson, Hythe, followed closely; and very fine specimens of Stanstead White, in the class for six blooms of any colour, Mr. J. Myers was 1st, with very finely-grown and coloured Etoile de Lyon; and Mr. C. Cox, with Mrs. Wheeler, was 2nd, the quality of this class being very high.

In a class for twelve blooms, to be selected from a given list, Mr. W. Melville, gr. to F. W. Flight, Esq., Twyford, near Winchester, was the only exhibitor, and was awarded 1st for a very good lot; white varieties were fine, and Stanstead White, Bertha Flight, and Stanstead Surprise, may be named.

Large-flowered Reflexed.—The majority of these varieties have a vigorous yet neat free-branching habit of growth, and flowers of medium size, and next to the Japanese types have the brightest and most effective colours. The best twelve, and a very striking lot of flowers they were, came from Mr. Russell, gr. to D. C. T. Lewes, Esq., Henfield, Sussex, who had Cullingfordi, Chevalier Domage, Pink Christine, with its white and peach coloured forms; King of Crimsons, and Distinction. Some of these being repeated in duplicate. Mr. R. C. Notcut, a young amateur cultivator of Ipswich, was 2nd with some very fine blooms also, having Putney George, Emperor of China, Cloth of Gold, White Christine, etc.

Japanese Reflexed.—Mr. C. E. Shea, Foots Cray, Kent, was 1st with excellent blooms of Criterion, L'Adorable, Jeanne Delaux, Mons. Astorg, and Maiden's Blush; some of these being in duplicate. Mr. D. Hill, gr. to T. D. Brockman, Esq., Hythe Kent, was 2nd with very good flowers of Triomphe du Nord, Mons. Paul Dutour, and Val d'Andorre, as the leading varieties.

Large-flowered Anemones.—Great refinement of character was seen in well-developed blooms of this section, which possess high neatly-formed centres.

Mr. E. C. Jukes led with a superbly finished stand of blooms, having Miss Annie Lowe, a charming primrose sport from the white Lady Margaret, Laing's Anemone, Acquisition, Mrs. Judge Benedict, Cincinnati, Georges Sand, Mrs. Taylor, La Marguerite, and Thorpe Junior. Mr. C. J. Salter, gr. to T. B. Haywood, Esq., Wood Hatch, Reigate, was 2nd, having a very good stand of blooms also, and distinct from the foregoing, Mrs. Pethers, Fleur de Marie, and Prince of Anemones.

Large-flowered Japanese Anemones.—With twelve blooms, Mr. M. Sullivan, gr. to D. B. Chapman, Esq., Roehampton, was first with Madame Cabiol, Nelson, Madame Lebay, Jeanne Marty, Marguerite Solleville, Madame B. Pigny, Fabian de Mediana, and Sabine—a selection of the finest varieties. Mr. E. C. Jukes was 2nd with La Deuil, Nelson, Jeannie Marty, Mons. Charles Leboscqz, M. Pancoucke, and Madame R. Owen.

Japanese Incurved.—This is quite a new section, and it appears for the first time in the Society's catalogue. In this section the incurving, whether regular or irregular, must be sufficiently curved to form blooms more or less globular in outline. Mr. C. E. Shea, of Foots Cray, was 1st with twelve blooms, having Mrs. Wheeler, Golden Dragon, Boule d'Or, E. Molyneux, Henry Cannell, Pelican, &c. Mr. H. Turner, gr. to P. Monckton, Esq., Stanford, was 2nd, also with forms of similar character.

Anemone Pompons and Pompons.—Mr. W. B. Carpenter was 1st with twelve bunches, three blooms on each, and Mr. C. J. Salter was 2nd. Regulus Antonius, Madame Montels, Rose Margaret, Sidonia, and some others were very pretty made Pompons of the usual type—were very fine and bright. Mr. Russell, Henfield, Sussex, was 1st with twelve, and Mr. Heary, Hornsey, 2nd.

Amateurs' Classes.

Two classes were set apart for this class of growers, the various types being shown in excellent character. The most successful prize-winners were Mr. Briscoe-Ironside, Sidcup; Mr. Batten, Wimbledon; Mr. H. Fincham, Cranbrook; and Mr. F. Glascock, Bishop's Stortford. The varieties found here were similar to those which have already been named.

A group of classes for amateur and single-handed gardeners were also arranged, and here the leading prize winners were Mr. T. J. Broughton, Wimbledon, the Rev. A. H. Berners, Ipswich, Mr. W. Hooper, of Sutton, and Mr. E. Mawley, Berkhampstead. The blooms were all highly creditable to those exhibiting them.

Metropolitan Classes.

These are for flowers grown within a radius of four and a half miles of Shoreditch Church! and the leading prize for twenty-four blooms, twelve Japanese and twelve incurved, was a challenge trophy. This was won by Mr. Easy with a very good lot of blooms. There were four other classes, and a bronzed centenary medal was given in addition to the first prize in each class.

Table Decoration and Bouquets.

A class for a table of bouquets, wreaths, &c., proved a most attractive feature, and several of the leading floral decorators competed. Messrs. Perkins & Sons, Coventry, were 1st; and W. J. W. Chard, Stoke Newington, 2nd, both having exhibits, such as wreaths, crosses, bouquets, &c. in great variety of a very high order of excellence. Mr. D. B. Crane, of Highgate, an amateur, had the best three vases, employing trumpet-shaped glasses, which he filled with the best taste; and Mr. J. W. Chard, was 2nd; Mr. Chard had the best single vase; Mr. E. Chadwick, Ealing, was 2nd.

Veitch Memorial Prizes.

The Trustees of the Veitch Memorial offered the 1st prizes in four classes as follows, nurserymen excluded. For twenty-four incurved blooms to be staged with not less than 8 inches of stem and foliage as grown, and in another class for Japanese to be shown similarly. The entries were numerous in the latter class, but there were only two lots of incurved staged, and they certainly look more handsome when so exhibited than did the Japanese varieties, perhaps because the Japanese were represented by larger flowers, which did not allow the foliage to be seen. Mr. Blick, gr. to Martin R. Smith, Esq., The Warren, Hayes Common, Kent, was awarded 1st for incurved blooms, and several good flowers were shown—Emily Dale, Lady Dorothy, Princess of Wales, Miss Haggas, and Baron Beust, being the best. Mr. Sullivan was 2nd, and also showed well. Japanese were best from Mr. A. Payne, gr. to Miss Gerald Smith, The Oaks, Emsworth, and good flowers were contributed here, Stanstead White being very fine; Etoile de Lyon, Sunflower, and Jeanne Delaux were other good specimens. Mr. Sullivan was 2nd, with good coloured flowers of average size and quality; and Mr. Blick was placed 3rd. The third class in which the prize was offered by the trustees, was for twelve bush specimen plants, *i.e.*, plants not trained to any formal shape. Mr. E. Easey, gr. to J. W. Jones, Esq., The Grange, 23, Highbury New Park, N., won the honours in this class with very freely-flowered specimens, simply tied in places to regulate the more wandering shoots, W. Robinson, Peter the Great, Fair Maid of Guernsey, and Mdlle. Lacroix being the best of them. Mr. E. Vince, London Cemetery Co., Highgate, was placed 2nd, having lanky plants, Source d'Or, Mons. Lemoine, and Elaine being the best. The remaining prize was for the best six trained specimens, large-flowered varieties and others. Mr. D. Donald, Leyton Green, Essex, won, with very fine examples of large size, and well-flowered, Madame B. Rendatler, Stanstead Surprise, and Chinaman being simply masses of flower; 2nd, Mr. T. Richardson, gr. to Sir J. Ferguson, Bart., Hever Court, Singlewell, Gravesend, who had plants on which the flowers were well carried up, but not so numerous as in the other lot, White and Pink Christine being well represented.

Plants and Groups.

The groups were decidedly good, and in the class for one to be arranged in 100 square feet, Mr. G. Stevens, St. John's Nursery, Putney, was 1st, with a finely-flowered lot of plants, although the form given to the surface was not pleasing; Messrs. J. Laing & Sons, Forest Hill, S.E., were 2nd, with smaller flowers, but better in the incurved varieties; and Mr. J. Townsend, Providence Nursery, Gardeners' Lane, Putney, S.W., who was 3rd, also contributed a good lot of plants.

A class was provided for Japanese, the plants, including pots, not to exceed 5 feet in height.



Fig. 114.—Cone of Pinus ponderosa. (See p. 557.)

Messrs. Reid & Borneman, Trewsbury Road, Sydenham, succeeded in taking the 1st place, with a very finely-flowered lot of dwarf plants of the leading varieties; the arrangement of the group was also tasteful, the colours being massed to a certain extent. The 2nd place was accorded to a group from Mr.

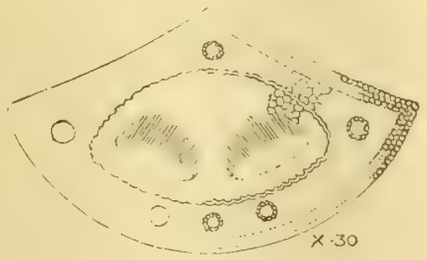


Fig. 115.—Plan of leaf-section of Pinus ponderosa, showing the position of the resin canals in the substance of the leaf. (See p. 557.)

W. Holmes, Frampton Park Nurseries, Hackney, the plants being very satisfactory, but the arrangement was too high in the centre.

Trained plants were very good, the best nine being from Mr. J. Brooks, gr. to W. Reynolds, Esq., The Green, Highgate; they were large specimens, and profusely flowered, Madame Bertier Rendatler, Ed. Audiguier, Miss Gorton, W. Robinson, Madame Baco, and Dr. Sharpe being the leading varieties. Mr. D. Donald, Leyton Green, Essex, was 2nd, Barbara being very finely shown, while White Christine and Dr. Sharpe were good; 3rd, Mr. J. Weston, gr. to D. Martineau, Esq., South Road, Clapham Park, S.W., with plants of Margot, Avalanche, and Madame de Sevin as his best.

The best four trained specimens were sent by Mr. W. Clarke, gr. to W. H. Lile, Esq., Devon House, Brixton Hill, S.W.; they were of good size, and well-flowered. A specimen of Etoile de Lyon was very fine, the large flowers of this variety looking very showy, L'Ile des Plaisirs, L'Adorable may also be named. These plants measured between 4 and 5 feet through, and were low trained. Mr. W. Davey, gr. to C. C. Paine, Esq., Cedar House, Stamford Hill, N., was 2nd, with higher plants of smaller size, and Mr. Donald was 3rd. Mr. Clarke again led in the class for six, showing another grand lot full of flower, Dr. Mackey, Source d'Or, Jupiter, and La Triomphante, being the finest; 2nd, Mr. Wesker gr. to A. Heaver, Esq., Upper Tooting, with Florence Piercy, Maiden's Blush, and Mrs. Dixon, in good specimens; Mr. Davey was 3rd.

Mr. Donald was leading in the class for four standard-trained specimens, with very satisfactory specimens of La Triomphante, Chinaman, and Fernand Féral. Mr. Richardson was 2nd, with plants similar to those shown in the Veitch Memorial class. For Pompons, Mr. J. Weston was 2nd, with lightly-trained specimens, the Cedo Nulli being very fine; and Mr. Clarke came 3rd. the 1st being withheld and Mr. Richardson showed some very fine pompon. Anemones not for competition.

Miscellaneous.

Messrs. Pitcher & Manda," Hextable Nurseries, Swanley, showed a comprehensive collection of fair quality, and also a plant of Louis Bœhmer, a novelty like a pink Mrs. Alpheus Hardy. Messrs. J. Carter & Co., High Holborn, W.C., had several novelties, including Holborn Rosette, a rough incurved variety, of a rosy-pink colour; James Carter, reflexed, rich yellow; and Holborn Violet, like a deep-coloured Etoile de Lyon, with smaller petals. Messrs. W. Cutbush & Sons, Highgate, sent Pernettyas in berry. Messrs. W. Clibran & Sons, Altrincham, had an extensive collection of Chrysanthemums, embracing Annie Clibran, Thos. Stephenson, Ada, Spaulding, Jean Marty, and W. H. Lincoln. Messrs. H. Cannell & Sons, Swanley, Kent, contributed a fine collection of zonal Pelargoniums, and a large lot of fine Chrysanthemum blooms, including most of the favourites, and the newer Robert Cannell, Eynsford White, M. Leo Delibes, carmine Japanese, with broad, rather short petals and paler reverse; Albenc London, dull crimson Japanese; Arthur Wood, Volunteer, Grandiflorum superbum, and Mr. W. Walters like Ed. Audiguier, but more dull, with a tinge of brown in it. Mr. Owen, Floral Nurseries, Maidenhead, sent a large lot of fine flowers, including a delightful little Pompon Marion, it has flowers of brownish-old-gold colour and flat, short petals; Camille Flammarion, rose-purple, incurved; Mr. A. H. Neve, Japanese, wide, revolute-edged petals, faint pink; Lilian Bird, thread petalled Japanese, soft, rose-pink; Ada Spaulding, Eugénie Giat, Violet Rose, Ch. Leboscqz, &c. Messrs. B. S. Williams & Son, Upper Holloway, N., sent a large collection of miscellaneous plants; and Mr. G. Wythes, Syon Gardens, Brentford, contributed a collection of cut blooms of Chrysanthemums arranged with Ferns, &c. Messrs. Peed & Son had Chrysanthemum blooms arranged with Ferns. Mr. Taylor sent Cyclamen; and Chinese Primulas were shown by Messrs. Sutton & Sons. Horticulture Buildings was contributed by a few exhibitors, Messrs. Newton, of Hitchin, Peele & Son, of Wood Green, and Foster & Pearson, of Beeston, having good structures.

Fruit and Vegetables.

Fruits were not numerous, but what appeared was of good quality. Mr. C. Ross, gr. to C. Eyre, Esq., Welford Park, Newbury, was 1st, with six dishes of dessert Apples. Mr. Davis, gr. to Lady Howard de Walden, Maidstone, had the best six dishes of culinary Apples. Mr. Davis also had the best six dishes of dessert Pears, staging excellent fruits.

Mr. C. Griffin, gr. to Messrs. Christy, Combe Bank, Kingston, had the best three bunches of white Grapes, and also of black, staging well-finished specimens. Mr. F. Davis, gr. to E. Tautz, Esq., Ealing, had the best three bunches of Gros Colmar.

Mr. J. Clarke, Albion Nursery, Fareham, had a col-

lection of Grapes grown in the open air, which were highly commended.

Potatos were a leading feature. Some excellent examples were staged by Messrs. H. Ridgwell, Historn Road, Cambridge; Mr. J. Hughes, The Gardens, Eydon Hall, Byfield; Mr. E. S. Wills, The Gardens, Edgcote Park, Banbury; and Mr. Tom Tooley, Banbury.

The special prizes given by Messrs. Sutton & Sons and Mr. C. Fidler, of Reading, brought admirable examples of Potatos and vegetables.

Messrs. Sutton & Sons and Mr. C. Fidler had extensive collections of Potatos, chiefly varieties they have distributed, the tubers throughout being of high quality.

ROYAL HORTICULTURAL.

November 11.—The meeting held at the Drill Hall, on the above date, was, as may naturally be supposed, a small one, the interest of it centering chiefly on some few rare and choice Orchids, a quantity of varieties of Chinese Primulas, and the flower of the day and season was not quite ignored, several novelties in Chrysanthemums, if no improvement on existing varieties, being observed. Some good specimens of Apples and Pears were likewise shown. At the afternoon meeting, which was fairly attended, Mr. Arthur Sutton read a paper on the "Chinese Primrose," which is alluded to in our leading article.

Orchid Committee.

Present: Mr. H. J. Veitch, in the chair; and Messrs. J. O'Brien, S. Courtauld, H. M. Pollett, H. Ballantine, M. T. Masters, F. Sander, and A. H. Smee.

From Messrs. F. Sander & Co.'s Nursery, St. Albans, came two plants of Cattleya O'Brieniana of much beauty and value by reason of its flowering at this season. It has light purple petals and sepals, and a lip with crimson splashings. The flowers seen were 4 inches in diameter when stretched out, but being rather limp they appeared to be less. Several Cypripediums came from the same exhibitor, viz., C. Laucheana, a flower with a coppery tinted lip, drooping petals, and dorsal sepal green, white tipped. The foliage is light green, marbled with a darker tint; C. Ashburtoniæ; C. Eyermanniana, with a dull crimson lip, and petals of brownish green with a purple middle nerve, and white dorsal sepal which is thrice twisted, a pretty and distinct looking flower.

Messrs. J. Veitch & Sons, Chelsea, showed Cypripedium Cleola, a hybrid between C. Boissierianum reticulatum and C. Schlimi albiflorum, a beautiful flower, with white sepals, petals, and lip, the latter having a rosy suffusion all over it; C. Antigone, a hybrid from C. niveum and C. Lawrenceanum, a fine bold flower, large in all its parts, the lip creamy-white at the back and purplish in front, rosy-carmine stripes, and a lighter suffusion on the petals; the dorsal sepal erect, with lines and netting of green on a ground of white; the foliage is that of C. Lawrenceanum.

J. Statter, Esq., Stand Hall, Whitfield, Manchester, exhibited one plant and some cut blooms of Cattleya Bowringiana, the plant showing two spikes of three flowers each. It is a showy plant. Dendrobium Statterianum is a species with flowers of warm or crimson-purple generally, the colour being greatly intensified in the lip and throat; Vanda Sanderiana, shown by Mr. Statter, was a cut spike of eight blooms, which received a Cultural Certificate; a large-flowered and well-marked V. cœrulea, with six flowers on a spike; and Dendrobium Phalænopsis, a species of which, D. Statterianum, may be a variety.

A. J. Hollington, Esq., Forty Hill, Enfield, showed several Cypripediums, including C. polystigmaticum, C. Muriel Hollington, a flower with sepals and petals of creamy white, slightly suffused with green; dorsal sepal white, with a faint green patch, carmine veins in the petals and lip, a pretty hybrid whose parentage was not stated.

Baron Schroder, The Dell, Egham, had ×Lælio-Cattleya Euterpe, of beautiful dark purple, the lip which is not lobed was prettily frilled at the edge. It is a Veitchian hybrid. Odontoglossum crispum Sanderianum, a splendid flower, on massive proportions, set on a long and robust spike. It is a flower richly spotted with brown.

Norman Cookson, Esq., Oak Wood, Wylam-on-Tyne, showed Cypripedium Doris, a hybrid between venustum and Stonei, which has a port-wine-coloured lip, with just a faint suffusion of green, petals that are green in colour, and furnished with hairs on the edges, and spotted sparingly with black-brown, and a dorsal sepal that is pale green, striped with fawn.

M. Linden, Société Anonyme, Parc Leopold, Brussels, showed Cattleya Warocqueana (four plants). The flowers are 6 inches in diameter; the lip is a rich purple; the sepals and petals rosy-crimson. Odontoglossum Duvivierianum has acutely-pointed narrow petals and sepals, the ground-colour of which is lemon-yellow, and over which brown spots are thickly distributed; the lip, which is rounded, and bluntly three-lobed, is brownish at the base, the rest being white, with light brown spots. Odontoglossum Noezlianum is a dwarf, delicate-growing novelty, with small circular bright scarlet flowers.

Messrs. Pitcher & Manda, Hextable, Swanley, showed Cypripedium Masereellianum, a greenish-coloured flower, and distinct.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. G. Paul, T. Ross, W. C. Leach, H. B. May, J. Walker, T. Baines, H. H. D'Ombrain, and J. Fraser.

A number of select strains of Primula sinensis were shown by Messrs. Sutton & Sons, Reading, of which a variety with double rose-coloured blooms was rather nice. There were lilac, white, crimson, red, and spotted, but nothing that could be said to differ from what has been seen before.

A boxful of Violets in bunches was sent by Mr. Leach gr., Albury Park, very nice for the season. Mr. A. Waterer, Knap Hill, showed a scarlet-leaved Oak, and Vaccinium pennsylvanicum with crimson-coloured foliage, of a neat character, very suitable for the bouquet maker's art.

A few Chrysanthemums were shown by Messrs. H. Cannell, Swanley. These consisted of the Japanese Ada Spaulding, flesh-coloured with a yellow centre—a sport from Baronne de Prailly, rosy-purple in colour, is a nice flower; Marguerite De Cazis has thread-like florets, and is flesh-coloured; William Wood is a red-brown Japanese, with yellow tips to the florets; Robert Cannell is a new incurved, flat in shape, and of the colour of the well-known Barbara.

Fruit Committee.

Present: T. Francis Rivers, in the chair; and Messrs. R. D. Blackmore, C. Ross, G. Bunyard, G. W. Cummins, J. Smith, F. Q. Lane, W. Balderson, R. Hogg, A. Sutton, and P. Crowley.

A novelty in Pears was exhibited in Beurré Fonqueray. Mr. C. Ross showed some of his seedling Apples, Mr. A. H. Smee showed Apple Remborough, and Messrs. Rivers & Son, Sawbridgeworth, showed fifty popular varieties in excellent order; and a smaller number of dishes of large dessert Pears, including several of recent introduction.

Mr. T. Laxton, Bedford, had the nice-looking white-skinned Jerusalem Artichoke, and a hybrid Cabbage raised between the tender Couve Tronchuda and Chou de Burghley.

CRYSTAL PALACE.

November 7 and 8.—On Friday and Saturday last an exhibition of Chrysanthemums was held at this place, and, although the display was not so large as in some previous years, yet there was a very creditable lot of blooms staged, and good quality was a general characteristic; competition, too, was close in the leading classes.

In the class for twelve incurved and twelve Japanese, the number of entries was very great, and the quality of the prize collections was naturally of a high order. The 1st place was accorded to Mr. C. J. Salter, gr. to T. B. Haywood, Esq., Woodhatch, Reigate; all were richly coloured, and the incurved varieties were exceedingly good, A. Salter, Violet Tomlin, Golden Empress, Jardin des Plantes, and Queen of England, being the best of the Japanese. Mention may be made of E. Molyneux, Val d'Andorre, Marea, Stanstead White, Etoile de Lyon, and Sarah Owen. Mr. C. Gibson, gr. to J. Wormald, Esq., Morden Park, Surrey, who came 2nd, was weak in the incurved varieties, but the Japanese were finely developed and brightly coloured, E. Molyneux, Stanstead White and Lady Lawrence being good.

Incurved blooms, shown by Mr. J. Salter in the class for eighteen, were again fine, and to those already mentioned, John Doughty (deep colour) and Jeanne d'Arc may be added. Mr. G. Carpenter, gr. to Major Browne, Byfleet, had the best twelve in creditable samples.

Japanese blooms were generally good, and the eighteen of Mr. Glen, Crawley, who won 1st in the class, were no exception, although the stand was somewhat uneven, the varieties E. Molyneux, Martha Harding, Etoile de Lyon, F. Jameson, Stanstead White and Stanstead Surprise being fine. Mr. Harker had the best twelve Japanese, including a fine bloom of Stanstead White. The best six in one variety being from Mr. Glen, who sent Avalanche. Mr. Howe, gr. to H. Tate, Esq., Streatham Common, being 2nd with superb examples of E. Molyneux.

Reflexed flowers were best from Mr. Carpenter, who showed perfect balls, the Christines and Cloth of Gold being conspicuous. Anemones were well represented by Mr. Sullivan, Roehampton, who had fine sized examples. The best Pompons and also single, were from Mr. Chadwick, Hanger Hill Gardens, Ealing; while from Mr. Slade, gr. to Lady Bowater, Richmond Park, Surrey, had the best stand of Pompon Anemones.

Plants were good generally. Messrs. J. Laing & Sons, Forest Hill, S E., having the best groups in the open classes, while Mr. J. Gravett, gr. to Dr. Hetley, Upper Norwood, led in the amateur section of trained specimens, the Pompons were perhaps the best; a collection of six from Mr. Hughes, gr. to Mrs. Longsdon, South Norwood, being very elegant and well flowered, and Messrs. Clarke and Cherry both had good examples of Japanese.

Miscellaneous exhibits were sent by Messrs. Salter & Son, Peed & Sons, R. Smith & Co., and Cheal & Sons.

IPSWICH AND EAST OF ENGLAND CHRYSANTHEMUM.

This society held its annual meeting on the 4th, 5th, and 6th, inst. in the Public Hall, Ipswich, when fine displays of Chrysanthemums and fruit were made, by noted growers and gardeners, the competitions being close in most classes.

On entering the large and lofty hall, the effect was exceedingly striking and fine, as down the centre ran a table, and side tables filled with small decorative plants and cut blooms, the further end having a raised platform, in front of which, on the level, groups of Chrysanthemums in pots were arranged; and on the top, in the foreground, beautiful groups of stove and greenhouse plants were formed, all of which were put up with much taste. These groups were backed up by large Palms, and Coniferæ and space for the band was found between them. The fruit was put into another part of the building and the vegetables in a corridor, the exhibits being more numerous than was expected.

The chief competitors in the large classes of cut blooms were Mr. Lees, gr. to the Duchess of Montrose, and Mr. Lester, gr. to Lord Brooke, M.P., both of whom had very fine blooms, the first-named being a young and new exhibitor, and a pupil of the late Mr. Wildsmith. Mr. Lees was 1st for the twenty-four, twelve incurved and twelve Japanese; 1st, for twelve incurved, also for six white reflexed, and 2nd for twelve Japanese, six crimson reflexed, and six Japanese, one variety. Mr. Lees also won the silver medal of the National Chrysanthemum Society for the best blooms in the show, the variety being Alfred Salter. Etoile de Lyon was shown in his other stands, but it is too big and coarse to be likely to come much into favour. Mr. Lester was 1st in the class of twenty-four, the same in the twelve incurved, and all very fine flowers.

The premier prizes for the bridal and ball-room bouquets were both won by Mr. Rogers, gr. to Lord Rendlesham, and Messrs. Gilbert took 2nd in close order of merit.

The groups of Chrysanthemums in pots were half circular, and in area 50 square feet, the shape which best suited their positions. The 1st prize fell to Mr. Jordan, gr. to the Rev. H. Berners, and the 2nd to Mr. Andrews, gr. to the Hon. W. Lowther, M.P., of Campsea Ash, whose plants were remarkably well grown, and had very fine blooms.

In the class for twenty, in a space of 40 feet, Mr. Adams, gr. to Miss Oxborrow, was 1st. For the four trained, Mr. Chinnery, gr. to J. Limmer, Esq., was 1st; and Mr. Pollard took that position for the best single specimen. In the class for four reflexed, Mr. Chinery and Mr. Pooley again took 1st and 2nd.

The area of the groups of stove and greenhouse

or miscellaneous plants, was 50 feet, and here Mr. Marshall, gr. to J. D. Cobbold, Esq., came out strong, and was deservedly placed 1st; Mr. Gilbert, of St. Margaret's Nursery, coming in 2nd; a special award being made to Mr. Whitfield King, who deserved a better place, as he had some good things, well arranged.

In the fruit department, Mr. J. Sheppard, gr. to Captain Berners, of Woolverstone Park, was 1st, for a collection consisting of six dishes, showing Alicante and Golden Queen Grapes, The Favourite Melon, Brown Turkey Figs, Doyenné du Comice Pears, and Blenheim Pippin Apples; and Mr. Andrews, gr. to the Hon. W. Lowther, was 2nd.

In the class for three bunches of Alicante, Mr. Sheppard was again 1st, and Mr. King, gr. at Melton Lodge, 2nd. For Muscats, Mr. Scales, gr. to Mrs. Phillips, of Sproughton, was 1st, and Mr. Tebbenham 2nd. In the class for any other white Grape, Mr. Sheppard was 1st, with well-coloured Golden Queen; and in the open class, for black, with Gros Colmar; Mr. King and Mr. Tebbenham coming in 2nd.

Although it is said that the season is a bad one for Apples and Pears, the show seemed to belie this assertion, as fine fruit in quantity was displayed, and quite filled up the tables. The vegetables, too, were exceedingly good. *A Correspondent.*

EALING HORTICULTURAL.

The annual exhibition of Chrysanthemums took place in the Victoria Hall, on the 5th inst. Groups and cut flowers were very effective; and some of them were excellent, especially the incurved and Japanese varieties. The Ealing growers seem to be alive to the importance of keeping pace with the times, for several excellent specimens of the newer varieties in the foregoing classes of blooms were observed. The leading prizetakers in the class for groups were Mr. R. Dawes, Mr. F. Hicks, Mr. E. P. Oakshott, and Mr. T. Curryer. In the cut bloom classes, Mr. W. Owen, Mr. E. P. Oakshott, Mr. Murrell, Mr. R. Dawes, and Mrs. Scott-Turner, were the principal prize-winners. The general averages was above the average throughout, and the competition in many of the classes exceedingly keen.

In fruit, Grapes, and dessert and culinary Apples, which were shown as well as flowers, were good; whilst Mr. Reynolds contributed from Gunnersbury Park Gardens, a collection of the leading varieties.

Vegetables were shown in considerable quantity, the class for six dishes, bringing good competition; and Potatos found numerous exhibitors, and whose tubers were of fine quality.

Table decorations, consisting of Chrysanthemums, were good—especially some that were shown by Mr. Hudson's gardener, Gunnersbury House Gardens, and Mr. H. B. Smith, Court Florist, Ealing. Mr. T. A. Gledstanes, of Gunnersbury, sent some excellent flowering plants of Orchids, and others in a cut state. A large and attractiue group of plants was also furnished from Gunnersbury Park.

PORTSMOUTH.

November 5, 6, and 7.—A capital exhibition was held in the Drill Hall, and was largely attended. The exhibits, if not quite so numerous as last year, were of superior quality in most instances. Specimen plants receive ample encouragement here, as much as £10 being offered as 1st prize for eight plants, which Mr. Busby, gr. to Captain Long, Blendworth Lodge, Horndean, succeeded in winning with freely-flowered and not too formally-trained examples. Mr. Penford, gr. to Sir F. FitzWygram, Leigh Park, Havant, was 2nd.

Pompons in eight varieties were well shown by Mr. Hawkins, gr. to E. Lapthorne, Esq., Gosport, the plants, loosely-trained and freely-flowered, making quite a feature in the plant classes.

Groups of Chrysanthemums in pots, in a space not exceeding 50 square feet, were best shown by Mr. H. Gate, gr. to G. Cooke, Esq., Langton House, Gosport; and Mr. Hatch, gr. to the Victoria Park Committee, Portsmouth.

Cut blooms were staged in immense numbers, and were of good quality generally, the most important class being that for forty-eight blooms, in thirty-six varieties, half to be incurved, and the remainder Japanese, and for which the splendid prize of an elegant silver epergne, value £25, and £8 in cash, was offered. Messrs. W. & E. Drover, The Nurseries, Fareham, secured this, with a collection remarkable for the large-sized blooms of splendid colour; Mrs. Alpheus Hardy, Stanstead White, E. Molyneux, and Mons. Bernard, were specially noticeable. Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Wickham, was a good 2nd, the incurved blooms showing superior finish.

For twelve each of incurved and Japanese varieties, distinct, Mr. N. Molyneux leading rather easily, with grandly-formed incurved and good Japanese varieties, of leading sorts.

For twelve incurved and twelve Japanese, in separate classes, the last named exhibitor succeeded in carrying off 1st in each case. Reflexed varieties in not less than eight sorts were well shown by Mr. Russell, gr. to Dr. C. Lewis, Henfield, Sussex. Large Anemone and Japanese Anemone varieties being best staged by Mr. Penford in substantial, well-arranged blooms. For six of any variety of incurved and the same number of Japanese, any one kind, Mr. N. Molyneux easily led with substantial flowers of Miss M. A. Haggas and E. Molyneux.

Strong competition was evinced in the class for twelve bunches of Pompons, and out of ten competitors Mr. Agate was a good 1st with a neat lot. Fimbriated varieties made an interesting display, such sorts as Crœsus, Chardoneret and Massange being well shown in the stand which won for Mr. G. Hawkins the 1st prize. Single varieties in twelve bunches were numerously staged, Mr. Hatch had he best—a neat lot. The premier incurved bloom was a good example of Empress of India, belonging to Messrs. Drover; Mr. Renford in the Japanese section, led with a fully developed flower of the pure white Avalanche.

Fruit was contributed largely. For fifty dishes of Apples and Pears, Messrs. G. Bunyard & Co., Maidstone, led. Mr. T. Hall gr. to S. Montague, Esq., South Stoneham House, Southampton, also staged capital fruits. Messrs. Quertier & Co., The Nurseries, Fordingbridge, Hants, carried off premier honours for black and white Grapes.

Vegetables were shown; also largely contributed, Mr. Ingfield leading.

CHISWICK HORTICULTURAL.

November 6.—The autumn exhibition of this Society was held in the Vestry Hall, when a capital display of Chrysanthemums was made, and the competition was keen in all classes. Mr. C. J. Waite, Glenhurst Gardens, Esher, was a very successful exhibitor, leading in the mixed class for incurved and Japanese. For twelve Japanese and six reflexed, Mr. Palmer, gr. to W. Hume Dick, Esq., Thames Ditton, led. For twelve incurved blooms, Mr. Oakshott, gr. to C. Long, Esq., Ealing, had a fine lot of Avalanche; and Mr. Head, gr. to W. Daniels, Esq., Kew, showed a very fine stand of Golden Empress. Groups were of fair quality, Mr. A. Wright, gr. to H. Watts, Esq., and Messrs. W. Fromow & Sons being respectively 1st and 2nd. Other groups came from Mr. M. T. May, gr. to the Marquis of Bute, Chiswick House; and from the Gardens of the Royal Horticultural Society, the latter having a very pretty lot of Pompons.

ASCOT.

November 6 and 7.—The show was, as usual held in the Grand Stand. Groups of Chrysanthemums are here always remarkable for the high quality attained, and there was no exception to the rule this year. Cut blooms were staged in large numbers, and were of unusually good quality.

For the best group not to exceed a radius of 6 feet, there were six competitors, and there was but little difference in quality. Mr. Cowie, gr. to Vere Oliver, Esq., Sunningdale, was awarded premier position on account of the excellence of his incurved blooms; Mr. W. Lane, gr. to Miss Dunning Smith, Ascot, following.

For the most effective group of miscellaneous plants, Mr. Hughes, gr. to H. F. de Paravicini, Esq., Bracknell, led with a good arrangement.

An interesting class was that for six plants, Chrysanthemums distinct, grown as bushes, and not formally trained; with Pompons, freely flowered, Mr. Richards, gr. to the Rev. P. Macdonald, Ascot, was successful in securing principal honours.

Cut blooms made an imposing display, the greatest interest being centred in the class for eighteen Japanese, and the same number of incurved varieties. For these a Silver Cup was offered, and it had been won the last twice by Mr. Page, gr. to H. P. Leschallas, Esq., Windlesham; but on this occasion he had to give place to Mr. W. Lane for the superiority of his incurved blooms, which were particularly well-finished, and of good quality, the Japanese blooms in both stands being nearly equal.

Six competitors entered in the class for twenty-four incurved blooms, Mr. Page leading, and Mr. Hughes following closely. In the class for the same number of Japanese, there was a capital lot staged. Mr. Page again secured premier award, closely followed by Mr. H. Tomlinson, gr. to F. Ricardo, Esq., Old Windsor.

Another Silver Cup was offered for twelve distinct reflexed varieties, which, as was expected, produced a fine show. Mr. Page was again successful, with a capital lot, showing high culture.

For six incurved, one variety, Mr. Lane was 1st, with Queen of England; and for any Japanese variety, Mr. Godfrey, gr. to Mrs. Rokery, Bagshot, led easily, with magnificent examples of Avalanche.

The premier incurved bloom was Princess of Wales, belonging to Mr. Bullimore, gr. to A. Southard, Esq., Bracknell; and Mr. Godfrey, in Avalanche, had the best Japanese. The best Anemone-flowered varieties were contributed by Mr. Richards.

Some good fruit was staged. Black Grapes were best, from Mr. C. Cooper, Sunninghill; white by Mr. Page. Mr. Godfrey had the best Apples. Mr. W. Lane staged the best vegetables.

DEVON AND EXETER HORTICULTURAL.

November 7.—The annual show of Chrysanthemums and Fruit was held in the Victoria Hall, Exeter, on the above date, and as far as Chrysanthemums were concerned, was the best that has been held by the Society. Cut blooms of Chrysanthemums were the principal feature, and in the leading class for twenty-four Japanese and twenty-four incurved, distinct, for which Messrs. R. T. Veitch & Son offered a Five Guinea Silver Cup; there were eleven competitors. Mr. C. Cooper, gr. to C. L. Collard, lard, Esq., was the successful winner of the Cup, having both Japanese and incurved flowers in fine condition. The 2nd prize fell to Mr. G. Foster, gr. to Mr. H. Spencer, his collection including the finest stand of incurved blooms in the show, and he was only excelled by a very points.

Mr. Cooper took the 1st prize also for twelve Japanese, distinct, and for the best Japanese bloom in the show with Etoile Aubyn; and also for twelve Japanese Anemone Chrysanthemums.

Mr. J. Lloyd, gr. to V. Stuckey, Esq., was awarded 1st prize for twenty-four Japanese in distinct varieties and twenty-four of incurved blooms.

For six Japanese, white, Mr. J. Cocks, gr. to Wyndham Fitzherbert, Esq., took 1st with Avalanche; and for six Japanese, yellow, Mr. Dolley with Sunflower.

Groups of Chrysanthemums, in pots.—Mr. W. Counter, gr. to Mark Farrant, Esq., and Mr. Rowland, gr. to W. Brock, Esq., was 1st, each in their respective classes. Mr. Rowland also taking 1st for miscellaneous group of plants arranged for effect.

Many of the local nurserymen staged capital collections of Chrysanthemums, fruit, and others.

BRIGHTON AND HOVE CHRYSANTHEMUM.

November 11 and 12.—This exhibition was a remarkably fine one—extra inducements were offered in the shape of 4th prizes in nearly all the classes (!). There were four classes of groups, and the chief or cup class brought eight entries, Mr. John Miles being placed 1st, with a first-rate group, in which quality and variety were alike good. In a smaller class, Mr. Fairs, gr. to R. Clowes, Esq., Hassocks, was 1st; and in a class of Chrysanthemums, arranged with Ferns as a groundwork to the flowers, Mr. Spottiswood, gr. to Mrs. Duddell, Queen's Park, was a good 1st.

Trained plants of Chrysanthemums were present in strong force, and Mr. Hill, gr. to M. Wallis, Esq., Withdean, was 1st, with four grand standards and a single specimen; and Mr. Scutt, gr. to Mrs. Jenkins, Burgess Hill, was 1st, with four fine dwarf plants and six Pompons; Mr. Meachen taking 1st for pyramids. Plants in small pots were shown in good style by Mr. John Miles and Mr. Scutt; Primulas were shown in first-rate style by Mr. Wickham, gr. to J. Humphrey, Esq., Keymer; and Mr. Spottiswood, both taking 1st prizes for twelves in two classes. Cyclamen, Mignonette, and table plants were in abundance. The former were best shown by

Mr. W. Miles, West Brighton Nurseries; and the latter by Mr. Nutting, gr. to Blundell Maple, Esq. St. Albans.

Chrysanthemums by amateurs formed a highly creditable exhibit, especially in the case of two groups. Cut blooms were not shown in quite such large numbers as usual. The class for forty-eight, Japanese and incurved, to be shown in equal numbers, found Mr. F. W. Flight, Cornstiles, Winchester, the 1st, and he having now won the cup twice, it becomes his property.

In the class for twenty-four Japanese, Mr. Glen, gr. to Mrs. Montefiore, Worth Park, was very strong, and also in that for six blooms of one kind, with fine examples of Stanstead White, he being placed 1st in both instances. Mr. Phillips, gr. to Dr. Baber, Meopham, Kent, was 1st for twenty-four incurveds; and Mr. Jupp, gr. to G. Boulton, Esq., Eastbourne, for twelve. The 1st prize for twelve Japanese blooms, a class where there was strong competition, going to Mr. Hodges, gr. to S. C. Gibbons, Esq., Lindfield.

For Anemone-flowered, Mr. Phillips was 1st with fine examples. With Pompons put up in bunches of three, Mr. Russell was 1st. Some very fine flowers of Thunberg were shown by Mr. Hopkins. The best bouquet amongst about a dozen was one from Mr. George Mills, Victoria Nurseries, who also stood 1st for a decorated stand of bloom.

Fruit.—Grapes were in first rate condition, with black, Mr. Phillips won with finely coloured Gros Colmar, and Mr. Glen was 1st with excellent Muscat of Alexandria. Mr. Goldsmith, gr. to Sir E. G. Loder, Bart., Leonardslee, Horsham, was strong with Apples, taking 1st prizes for both dessert and culinary kinds. Mr. Glen had the best Pears (dessert), and Mr. Bunney, gr. to W. C. Campion, Esq., some fine Catillacs.

Vegetables were shown largely in collections and otherwise. Messrs. Sutton's special prizes for collections were well contested, Mr. Manton, gr. to Mrs. Clifford, Brown Bolney, being 1st, and Mr. Phillips 2nd. Mr. Bunney took 1st for those offered by Messrs. Wood & Son, Maresfield Nurseries. Tomatos, Potatos, and other vegetables were of excellent quality in the classes.

The special Centenary Medal of the National Chrysanthemum Society was awarded to Mr. Scutt, for his dwarf-grown plants, and the Certificates (National Chrysanthemum Society) to Mr. Glen's blooms of Stanstead White Chrysanthemum, and Mr. John Miles' group, which took the cup.

A large collection of highly-coloured Apples were staged by Messrs. W. Balchin & Son, in all over seventy dishes. A fine lot also came from Messrs. Cheal & Son and others. *J. Hudson.*

IPOMŒAS.

The flowers of Ipomœas though transitory, expanding when the sun shines on them, or by the aid of artificial heat and closing the house at sunset, are very numerous, and a long succession of them appears from day to day. An exception to this method of flowering is met with in I. Horsfalliæ, introduced from Eastern India. More than three score species have been recorded, though the number obtainable at the nurseries is very limited; these, however, consist of desirable and beautiful forms.

Stove Annuals, &c.

Ipomœa bona nox, moon-flower, is a strong-growing species, producing very large white flowers, with four distinct bars springing from the bottom of the throat, and running to the margin, has the peculiarity of opening its flowers at night only, between 8 and 9 o'clock, and these close again early the following day, opening no more. The flowers are fragrant, and prove charming surprise bouquets in the evening. The seeds, which are large, germinate freely, and the plants quickly reach the blooming stage. Calonyction speciosum is another name for this plant.

Ipomœa coccinea, although its flowers are very small in comparison with others of the family, they are nevertheless very pretty and showy, owing to the fact of their being of an intense scarlet colour, and carried in profusion above the pretty foliage. Treated as a hothouse annual, this species grows admirably. I. cœlestina, as the name implies, produces flowers of a sky-blue colour, the blooms being large and delicately formed, in keeping with its pretty colour. It succeeds admirably under similar treatment to the above. I. rubro cœrulea and I. hederacea superba, the latter the Ivy-leaved form, being somewhat hardier than the above, are suitable for the greenhouse, and for planting out to grow against lattice-work or verandahs in the manner in which many half-hardy plants are grown. The colour of the latter variety is blue and white. I. grandiflora, a Mexican species, with very large pale purple blooms; I. digitata, purple flowers; I. althæoides, rosy-purple; I. ficifolia, fine purple. The erect-growing bushy I. lachnosperma, &c., are all worthy of culture. Owing to the light demand for seeds, the latter are difficult to obtain new and fresh from nurserymen. They are well worth the trouble of procuring from India. What are known as Convolvulus major and C. minor, though not precisely Ipomœas, have merits which should not be overlooked.

Perennial Stove Twiners.

I. Horsfalliæ is the best of the evergreen section. Its leaves are smooth and digitate, and large flattened panicles of shining rich rose-coloured flowers, make it a grand plant for growing under rafters and on pillars in the warm-house. Like strong-growers generally, it requires a great deal of sunlight; therefore it will not do in houses on which much shading is placed.

I. Learii, from Ceylon, has many large flowers, of the Convolvulus type, and of a colour between dark red and bluish-purple. It is a deciduous plant, and a gem of the first water; yet it is much neglected by gardeners. Planted in the stove in a warm border that is thoroughly drained, and trained up the rafters, where the aged stems are tied out thinly in pendent or screen form, they push forth numerous young growths, which, during the months of August and September, are laden with masses of bloom. After these pass away and the plant goes into a state of rest, the shoots should be pruned back to the old wood, and the plant then throws no shade on the other plants during winter; being different in this respect to some other evergreen climbing plants, not nearly so beautiful, which, nevertheless, are in greater favour.

I. Gerrardi and I. albivenia, species having respectively white flowers with purple tube, and white with yellow tube, and much alike, are desirable, owing to their handsome leaves, and the freedom with which they flower. *William Earley.*

NURSERY NOTES.

CYCLAMENS AT MR. W. TAYLOR'S NURSERY, ISLEWORTH.

Although established as a market grower of these popular and beautiful decorative plants for some years, yet it was not until the meeting of the Royal Horticultural Society at the Drill Hall, Westminster, on October 28 last, that Mr. Taylor appeared as an exhibitor of them, then showing a good group, which secured the Society's Silver Banksian Medal. A recent inspection of the plants at home-quarters revealed a very satisfactory state of affairs from a cultural point of view. Some 8000 plants were noted in various stages of development. Seen *en masse*, with their various and pleasing shades of colour, a brilliant effect was produced. The collection is particularly strong in whites, exhibiting some fine examples; and so great is the demand for these latter, that another structure of good length is being erected, in order to supply the want. The roses, reds, and purples (the latter containing some richly-coloured flowers) were well represented. The roses are found to look specially bright and attractive when subjected to artificial light—as for dinner-table decorations and similar uses. In the giganteum section—a highly decorative strain—we noted that an endeavour (and a successful one) is being made to secure an early-flowering race; the foliage, too, has been considered and improved upon, indeed some of the plants out of flower presented quite an ornamental appearance, reminding one somewhat of the beautiful-foliaged Begonias.

The practice as to culture here is to sow the seed about July, when ripe. For potting is used a mixture of loam and leaf-mould. Good drainage is an essential to success, and in the last potting (that into the 48-sized), the plants are potted firmly. A free circulation of air is allowed the plants, and at this time of the year judgment is required in watering operations, or the plants are liable to damp. Another essential, too, to success is that strict attention be paid as to the perfect cleanliness of the plants, so that they shall exhibit a perfect freedom from insect pests.

Mr. F. Jackson, Mr. Taylor's courteous grower, is to be complimented on the satisfactory condition of the plants under his charge. Amongst miscellaneous subjects we noted good batches of those two good market Pelargoniums, Raspail and West Brighton Gem—the latter always sells well, and is esteemed on account of its free-blooming qualities, and the compact habit of the plant. A good quarter is devoted to the culture of one of the flag Irises—an early sort, flowers of a Cambridge blue, sells well in the market; indeed, Mr. Taylor asserts that he has never seen another variety like it in the market. A white one is also grown, but for this there is not so great a demand. *B.*

TREES AND SHRUBS.

THE COMMON LAUREL.

When attending a committee meeting at the Chiswick Gardens the other day, I, with others then present, was struck with the fine appearance presented by a hedge of the variety of Laurel named rotundifolia. This variety is more compact and sturdy in its habit than others, and has deep green colour and very glossy foliage; the leaves are shorter and less pointed than those of the common Laurel. It is in all respects superior to others for hedges. Mr. Barron said that it does not make a second growth; and it was in this instance clearly to be seen this season, when no additional growth had been made, although the season was favourable to its doing so. This is an advantage, the late growth of the other Laurels making them liable to harm from frost. The common Laurel does not resist fog and smoke any too well, but I feel convinced that in rotundifolia we have a more useful and trustworthy variety. I was struck with this o-day at the Drill Hall, when looking at the specimen of the old variety of the Laurel, amongst other cut shrubs there exhibited to illlustrate Dr. Masters' paper on "Town Planting."

Another Laurel not often met with in gardens is the Myrtle-leaved Portugal Laurel, found in lists under the name of lusitanica myrtifolia. I consider this to be a useful and distinct variety; the leaf is smaller than in the type, habit of growth more upright, and very sturdy. For hedges it should prove a valuable plant. For variety, we have none too many suitable plants for hedges, and anything as distinct as these two Laurels are useful additions to this class of plants; they are more easily kept clean, and always look better than Quick or such like plants. *J. H. G., October* 28.

Trees in London.

In continuation of our remarks on the above subject, we found the trees in Finsbury Circus to be much older than in Finsbury Square, and the larger ones have been planted thirty, and some, forty years. Planes and black Poplar are the largest, and of lesser height are Ailantus dulosus, Catalpa bignonioides (syringæfolia), of which there are several growing satisfactorily, and the red-fruited Mulberry, a capital town tree of slow growth certainly, but one that retains its leaves till late in October, and which does not get spindly. Some species of the Ash grow well, but not the common one, which

loses its leaves very early, and eventually dies. On the contrary, the Weeping Ash does well, and there are two very large ones in the Circus garden. These stand clear of other trees so that we are led to suppose that starvation may have something to answer for in causing the deaths among the others. Limes lose their foliage soon, and do not flower. They also, similarly with White Thorn, become unsightly early in the summer from insect ravages. Ligustrum lucidum the shining-leaved Privet, Colutea arborescens, Irish Ivy, some varieties of the Fig, and various species of Holly grow very well here, amongst them being recurva, silver variegated, hedgehog and others; Viburnum opulus forms low spreading bushes under trees, but does not flower in such positions, although it might do so in better sites. Aralia spinosa grows fast and flowers abundantly where the sun is allowed to reach the plants. Of the Lilacs, those common London shrubs, it may be remarked, that the Persian variety flowers if it have space and light; but the white and puce-flowered varieties of Syringa vulgaris flower but little, or not at all. Ribes sanguinea blooms very well where it is not much shaded, as does the Stag's-horn Sumach (Rhus typhina), Evergreens, beyond those we have mentioned, and some Aucubas, are but few, but that is no reason that they should not be more generally planted, as the number of species known to succeed in the City is by no means small. The Circus Garden stands greatly in need of light and air, it being much over-grown, ten trees and shrubs standing where there is space for only one. And the root starvation and deprivation of air brought about by this thick planting are answerable for the greater part of the losses which have to be deplored yearly. Summer flowers, consisting of some ancient varieties of bedding Pelargoniums which we had imagined had long since been discarded for better ones, single and double-flowered Dahlias, ornamental-leaved Tobacco plants, Persicaria (Polygonum persicaria), an old-fashioned flowering plant; Coltsfoot, Rudbeckia gigantea, planted as undergrowth to trees; and Gunnera scabra.—*A. Y. E.*

The London Plane.

Some misapprehension continues to exist, even among those who should be better informed, as to the species to which this belongs. In the first place, it is not the American or Occidental Plane, which is too tender for our climate; nor is it the true Orientalis, but a form of it named Acerifolia, as determined a quarter of a century ago by the late Mr. Rivers and Dr. Lindley, and repeated annually. Mr. Nicholson, in the *Dictionary of Gardening*, is of the same opinion. The question is important, as out of the same batch of seedlings as may be seen at any tree nursery, some are much hardier or less spring-tender than others, and for town planting it is specially necessary to select the right variety.

Arbutus Menziesii.

Our excellent and authoritative American contemporary, *Garden and Forest*, speaks with enthusiasm of the beauty of this Arbutus, a native of the coast region of California and Oregon. "In Europe it will probably develop its greatest beauty only in such exceptionally warm and moist regions as Devonshire, the South of Ireland, the Channel Isles, and some parts of Western France."

Book Notice.

The World of Science. By R. Elliot Steel (Methuen & Co. 1891.)

Mr. Elliot Steel's, of Bradford, *World of Science*, will be found a most useful book. It is written for two classes of readers. For those who have learnt some science at school, and wish to refurbish their knowledge, and to give an idea of the whole subject to young readers. Both these objects have been fulfilled, and the succinct and plain accounts of the commonly studied sciences ought to create an intelligent interest in many minds. The style is, what would be called, popular; but in no case has accuracy of statement been sacrificed. The chapter on geology is perhaps the best in the book. The action of natural forces is adequately explained, and there is a capital introduction to the palæontological side of the science. The section on botany is too small, and many important facts are omitted. What there is, however, is well stated. The distinction between gluten, albumen, and cellulose is clearly drawn, and the different modes of cell-growth are well described. Other subjects well treated are chemistry and zoology. A book which gives in the course of 250 pages an interesting and accurate account of the physical world, has long been wanted by those who have not the time, owing to other occupations, to devote to science. This book seems to us to satisfy that want.

GRAPES, &c., AT HURST SIDE, WEST MOLESEY.

Visitors to the late "Grape Conference" at Chiswick will, doubtless, remember the examples staged there by Mr. A. G. Hookings, gr. to S. W. Graystone, Esq., at this pretty place, fruit which gained the distinction of a Silver Banksian Medal. A few notes on the varieties seen at their home quarters recently may not be out of place here. Several houses are devoted to Vine culture, and at the time of our visit we saw in fine form Gros Colmar, noble in bunch and berry—some of the bunches weighing 7 lb.; Alicante, Gros Maroc, Black Hamburgh, Mrs. Pearson, Foster's Seedling, and Madresfield Court. With respect to the last-mentioned fine Grape, and the cracking to which it is sometimes (through mismanagement) subject. Mr. Hockings' panacea for this evil is not to use fire-heat until the Grapes begin to colour.

To turn to other subjects well done here, we noted a fine Elruge Nectarine that had produced 600 fruits this season, and 500 fruits each year for the four preceding years—not bad work—thanks (as the gardener says) to "Clay's Fertiliser." Chrysanthemums are well done here, some 700 plants in admirable condition being grown in a structure some 60 by 30 feet. Mr. Hockings has exhibited very successfully at all the great "mum" exhibitions, taking the Veitch Memorial Medal and cash prize at the Aquarium show in 1888 for twenty-four reflexed blooms, also twenty first prizes in the same year. Very interesting was the sight of a batch of Tomatos, being prepared for winter work. Perfection is found to be a very free "setter," and nothing here is found to beat that named Little Cluster for salad work. We noted a seedling of Mr. Hockings' that looked promising. Strawberry forcing (in season) is well done here. La Grosse Sucrée is the favourite sort for this purpose—1600 fruits were cut on April 14, the smallest fruit weighing 1½ oz. The kitchen garden—a somewhat extensive one—is well kept. Onions have been a great crop this year. Reading Improved having turned out wonderfully well. *B.*

Law Notes.

A BEE-SWARMING CASE.

In the Small-debt Court, Stonehaven, near Aberdeen, on Wednesday, the 29th ult., Alexander Kerr, Stonehaven, sought to recover £1 5*s.* from James Lindsay, Howieshill, Muchalls, being the value of a swarm of bees, which it was alleged, had left a skep belonging to pursuer at Backhill of Cowie on July 28. Proof was led. Mrs. McPherson, tenant of Backhill, said she had kept bees belonging to Kerr for several years. On July 28 her attention was directed by a neighbour farmer to a swarm of bees which she supposed were Kerr's, which had escaped from a skep, and she followed the bees to Howieshill. She was a short distance behind them, but saw them flying in the air, and at Howieshill she saw a swarm, which she thought was Kerr's, settling on a skep, and entering it. She did not see them leave the place, but on her return the skep was empty into which a swarm which had come from Kerr's on the previous day was put. Defender did not deny that a swarm might have gone on his hive; indeed, he thought such had happened, and that, after seeing a number of dead bees, he was of opinion that the new swarm had killed his bees, and taken possession of the hive. The case was argued at some length by Mr. Crockett, solicitor, on behalf of pursuer, and Mr. Falconer for defender. The Sheriff assoilzied defender with expenses.

Obituary.

Richard D. Catchpool.—We regret to learn of the death of this gentleman, the hon. secretary and superintendent of the Reading Chrysanthemum show, which took place at Reading on the 7th inst. A few years since he instituted, upon a larger scale than had been before attempted, the annual Chrysanthemum show, putting it on a broader basis, and making it in every way a gratifying success. Mr. Catchpool was taken ill on Thursday, the 6th inst., and died on the following day. The annual show at Reading took place on Thursday, the 13th inst., and he who had worked so hard to make it successful, died almost on the eve of its taking place, at the age of sixty-eight. The superintendence of the show devolved upon Mr. William Smith, the assistant-secretary, and was carried out by him in an admirable manner.

The Alpine Garden.

ANEMONE FANNINI.

Has anyone yet persuaded this plant to flower in England? Seed was distributed by Dr. Masters four years ago. Mine came up well, and grew rapidly. I have tried it in pots in the greenhouse, and in several situations out-of-doors. It has hitherto seemed quite hardy, and makes healthy leaves 8 or 9 inches across, but has never attempted to flower. The plants have now several crowns. *C. Wolley Dod, Edge Hall, Malpas.*

A VEGETABLE CONDUCTOR OF ELECTRICITY.

Some very interesting letters and notes have recently been appearing in *Reis and Rayyet*, a very smartly-conducted Calcutta paper, in reference to an old and curious custom of the Hindus of Bengal. It seems that from time immemorial it has been the custom of the Hindoos to place on the roofs of their houses a plant, the identity of which appears to be disputed among Indian botanists, some calling it a Cactus, whilst others declare it to be a Euphorbia. One of the correspondents is quite mistaken when he says that the Cactus—which we will assume the plant to be—helps to draw the electric fluid into the house by the attraction of the electricity in the cloud above, whether there be a Cactus plant or not. The Cactus only serves to scatter the electricity of the house into space, and thereby to neutralise that of the clouds, for these two electricities are of two kinds. The Bengalee name of the plant grown on the roof is *bâj-bâran*, *i.e.*, a preventative of lightning—a fact which conclusively proves that the Hindoos are acquainted with the useful property of this sort of plant. It is not at all improbable that the ancient Hindoos, who displayed so much learning in other matters, should have been acquainted with the principles of electricity; the explanation is now lost, but the custom remains. An absurd, an idiotic reason is given in Hunter's *Dictionary*, in which it is seriously stated that because the Cactus protects their grounds from stray cows and goats, it will also similarly protect their houses from lightning: the idea is preposterous.

The custom of placing a Cactus on the roof is based on a highly scientific principle, viz., that of the "power of points." Electricity escapes far more easily through a pointed conductor than through a round one. For this reason the end of the brass conductors in an electric machine are mounted with brass knobs. The principle of saving a house from lightning with a metallic-pointed conductor and with a prickly Cactus is the same. When a cloud highly charged with electricity passes over a house, the house becomes charged with electricity of an opposite kind through induction, and these two electricities attract each other. Lightning is only the result of this mutual attraction, when a portion of the electricity of the cloud attracted by that of the earth below strikes the house. But if the house is provided with something having points, the electricity of the earth escapes into the air through these points, and neutralises the electricity of the cloud, and thus the discharge cannot take place. The plant which the Bengalee and other Hindoos grow on the roofs of their houses has hundreds of sharp-pointed prickles. The more the number of points a conductor charged with electricity has, the more easily the electrical fluid escapes from it. Therefore, in this respect, the plant in question is far better than an ordinary conductor which has only one point. Now-a-days, the conductor of a house is provided with four or five points. The great drawback in the use of the Cactus is that it cannot have proper connection with the earth; the connection is chiefly through bad conductors. Still, something is better than nothing.

The subject is one of considerable general interest, and deserves careful investigation and enquiry. The custom does not appear to be observed in Upper India, but in Bengal it is a very common thing to see this plant in a tub placed on the house-top. This plant is not only held sacred, but is reputed to possess important medicinal properties.

The editor of *Reis and Rayyat* states that the plant used on the housetops is not the Indian Cactus so suggestive of the hooded serpent, and appropriately called Nagphani, in Bengal, and Nagkali, on the Coromandel coast. That plant, though common enough, is neither sacred, nor, so far as we know, used as a medicine against snakes in this province. The plant prized as a protection from lightning is the Tekáṭá sij. It is not a Cactus but a Euphorbia. The subject is certainly one in which more light is needed. *A Travelling Botanist.*

THE APIARY.

WIRING FRAMES FOR FOUNDATION.

Edey's method of fastening foundation is gradually making way. The reason it has not become universal is surprising, when its advantages over the split top-bar are apparent. The various tedious methods were in use by us until about five years ago, when a few frames roughly wired were tried, and the result was so satisfactory that the next season these wired frames obtained the exclusive use in our apiary.

From that time they were offered for sale, the wire being strung through holes in the top and bottom bar; but, finding the wire had an inclination to "kink" when drawn through, our present method was arrived at. Three half-inch wire nails are driven through top and bottom bars of frame, one in centre, and one each an inch from ends (inside); these are partially hooked, so as to hold wire, by the use of a split key, or turning-tool (a small pair of round-nosed plyers will do); the wire is then hooked over the bent nail, the diagonal braces being first put in, starting from centre of top bar; the nails are then driven down, tightening up wire, and the frame is ready to receive foundation. The sheets are best cut so as to touch the frame nearly all round, and are laid on a half-inch board with ledges projecting; the wired frame is then placed upon the sheet of foundation, and embedded by the Worblett Spur. This is all that is necessary, although melted wax may be poured from a smelter on the edges, if desired.

Probably fewer wires would be sufficient to keep the foundation straight and even, but when it is desired to strengthen it sufficiently to extract from soon after giving to bees, six wires (including diagonal braces) are not too much, and as thinner foundation may with economy be used, this number will really effect a saving in first cost, not taking into consideration the comb will, when built out, withstand any ordinary usage.

The objection of bees to raise brood in cells through which wires pass, is theory rather than practice. We have not noticed half-a-dozen such combs out of some hundreds we have in use, or stored; and if it were so, pollen or honey could be placed in them readily. *Agnes.*

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending Nov. 8.	Accumulated. Above 42° for the Week.	Accumulated. Below 42° for the Week.	Accumulated. Above 42°, difference from Mean since Jan. 1, 1890.	Accumulated. Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1890.	Rainfall. Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1890.
		Day-deg	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 —	14	24	+ 187	— 85	12 +	229	49.6	19	24
2	0 av.	15	28	+ 38	— 69	10 +	188	28 8	16	30
3	1 —	26	13	+ 151	— 109	3 +	160	21.7	23	30
4	0 av.	32	10	+ 53	— 47	2 +	158	20.4	36	38
5	0 av.	33	15	+ 39	— 46	8 +	155	20.0	28	33
6	0 av.	39	8	+ 39	— 78	3 +	154	23.0	34	36
7	1 +	30	12	+ 87	— 93	13 +	194	45.8	21	31
8	0 av.	36	6	+ 133	— 96	13 +	182	30.8	20	30
9	1 +	40	0	— 20	+ 1	10 +	185	32.2	31	36
10	1 +	33	7	+ 116	— 80	11 +	212	32.1	25	29
11	1 +	43	0	+ 129	— 40	13 +	196	34.9	32	32
12	2 +	67	0	+ 73	— 22	10 +	178	27.8	18	43

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending November 8, is furnished from the Meteorological Office:—

"The *weather* has been rough, unsettled and wet. Severe gales have occurred in most districts. Snow has fallen on the Welsh and Scotch mountains, and heavy rains have been experienced in all the more western and northern parts of the country. Lightning and bright aurora were seen in the north of Scotland on the night of the 7th.

"The *temperature* has not differed much from the normal. In most of the wheat producing districts it has been slightly in excess of the mean, but in the grazing districts it has been either equal to or a little below the normal. The highest readings were observed as a rule on the first day of the period, but in some of the southern districts they were recorded at the close of the week. On one or other of these days the thermometer rose to 55° or above in nearly all districts, the highest readings of all being 60° in 'Ireland, S.,' and 58° in 'England, S.W.,' and the 'Channel Islands.' The lowest readings, which were recorded on irregular dates, ranged from 28° in 'Scotland, E.,' 'England, N.E.,' and the 'Midland Counties,' to 34° in 'Ireland, S.,' and 46° in the 'Channel Islands.'

"The *rainfall* has been more than the mean in all districts, the excess being very considerable in the west and north. In 'Ireland,' the southwest of 'England,' the 'Channel Islands,' and the north of 'Scotland' rain fell every day.

"*Bright sunshine* has been less prevalent than it was last week, excepting in 'Ireland,' where the values show a decided excess. The percentage of the possible amount has ranged from 16 in 'Scotland, E.,' to 18 in the 'Channel Islands,' and 19 in 'Scotland, N.,' to 34 in 'England, S.,' and 36 in 'England, E.'"

MARKETS.

COVENT GARDEN, November 13.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

No alteration. Market quiet. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples, ½-sieve	3 6- 7 0	Melons, each	0 6 2 0
Cobs, Kent, 100 lb.	65 0-70 0	Pine-apples, St. Michael, each	2 0 6 0
Grapes, lb.	0 9- 2 9		
Lemons, per case	20 0 40 0		

Vegetables.—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, each	0 4 0 6	Lettuces, per dozen	1 6- ...
Beans, French, lb.	1 0- ...	Mushrooms, punnet	2 0- ...
Beet, red, per dozen	1 0- 2 0	Mustard and Cress, punnet	0 4- ...
Carrots, per bunch	0 6- ...	Parsley, per bunch	0 4- ...
Cauliflowers, each	0 4- 0 6	Shallots, per lb.	0 6- ...
Celery, per bundle	1 6- 2 0	Spinach, per bushel	3 0- ...
Cucumbers, each	0 4- 0 6	Tomatos, per lb.	0 9- 1 0
Endive, per dozen	2 0- ...	Turnips, per bunch	0 4- ...
Herbs, per bunch	0 4- ...		

Potatos.—Supplies at our Station Dépôts, Midland and Great Northern Railways, have been short during the last week, and for best samples demand has far exceeded arrivals, which has caused a decided rise:—Best Magnums, 90s. to 100s.; do Imperators, 80s. to 90s.; Snowdrops, 90s. to 110s.; Reading Giants, 90s. to 100; Hebrons, 80s. to 90s.; medium quality (various), 65s. to 75s.; dark soil, do., 55s. to 65s. per ton. *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Ericas, various, doz.	8 0-18 0
Aspidistra, doz.	18 0 42 0	Ferns, in var., doz	4 0-18 0
— speci. plants, each	7 6-10 6	Ficus elastica, each	1 6- 7 0
Begonias, per doz.	4 0- 6 0	Foliage plants, various, each	2 0-10 0
Bouvardias, p. doz.	9 0-18 0	Heliotrope, per doz.	4 0- 6 0
Chrsanthem., p. doz.	4 0 18 0	Hydrangeas, doz.	9 0-18 0
— specimen plants, each	2 6- 5 0	Liliums, various, per dozen	9 0-18 0
Cyperus, per dozen	4 0-12 0	Marguerites, doz.	6 0-12 0
Dracæna terminalis, per dozen	30 0-60 0	Mignonette, per doz.	4 0- 6 0
— viridis, per doz.	12 0 24 0	Palms in variety, each	2 6-21 0
Euonymus, in var., per dozen	6 0-18 0	Pelargoniums, scarlet, per dozen	3 0- 6 0
Evergreens, in var., per dozen	6 0-24 0	Solanums, per doz.	9 0-'5 0

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun.	2 0- 4 0	Narcissus (paper white), 12 sprays	1 0- 2 0
Bouvardias, per bun.	0 6- 1 0	— French, 12 bun.	4 0- 9 0
Calla æthiopica, 12 blooms	4 0- 8 0	Pelargoniums, scarlet, 12 spr.	0 4- 0 6
Carnations, 12 blms.	1 0- 2 0	— dozen sprays	0 6- 1 0
Chrysanth., 12 bun.	3 0 12 0	Primulas, double, 12 sprays	0 6- 1 0
— 12 blooms	1 0- 3 0	Pyrethrum, 12 bun.	2 0- 4 0
Eucharis, per dozen	3 0- 6 0	Roses, Tea, per doz.	0 6- 2 0
Gardenias, 12 blooms	2 0- 4 0	— coloured, dozen	3 0- 5 0
Heliotropes, 12 spr.	0 6- 1 0	— red, per dozen	1 0- 2 0
Hyacinths, Rom., 12 sprays	1 6- 2 0	— Safrano, per 100	4 0-12 0
Japanese Roses, 100	4 0-12 0	Stephanotis, per 12 sprays	4 0- 6 0
Lilium, var., 12 bl.	2 0- 6 0	Tuberoses, 12 blms.	0 4- 0 6
Maiden Hair Fern, 12 blooms	4 0- 9 0	Violets, 12 bun.	1 0 2 0
Marguerites, 12 bun.	3 0- 6 0	— Parme, Fr., bun.	2 6- 3 6
Mignonette, 12 bun.	2 0- 4 0	— dark, Fr., bun.	1 0- 1 0

Orchid-bloom in variety.

SEEDS.

London: *Nov.* 12.—Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, London, E.C.,

write that, as is often the case at this season, Clover and Grass seeds are now quiet. Values all round, meantime, keep fairly steady. In Linseed the tendency is upwards. Winter Tares show no alteration. Blue Peas are firm, large sound parcels being inquired for. Haricot Beans are in good request at the low rates now ruling. The recent advance in Rapeseed is well sustained. Mustard is dull. Bird-seeds unchanged. Last month's imports of Clover and Grass seeds were 36 883 cwts., value £64,082, against 19,362 cwts., value £33,476, for October, 1889.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending November 8, and for the corresponding period in 1889:—Wheat, 32*s.* 1*d.*; Barley, 29*s.* 5*d.*; Oats, 17*s.* 5*d.* 1889, Wheat, 30*s.* 3*d.*; Barley, 31*s.* 0*d.*; Oats, 17*s.* 1*d.*

FRUIT AND VEGETABLES.

Spitalfields: *November* 12.—Good supplies of all kinds of field and market garden produce. Fruit trade good for an indifferent supply. Prices:—American Apples, 16*s.* to 22*s.* per barrel; English Apples, 4*s.* to 10*s.* per bushel; Pears, 2*s.* to 4*s.* per half-sieve; English Tomatos, 4*s.* to 6*s.* per peck; Savoys, 2*s.* to 4*s.* per tally; Cabbages, 1*s.* 6*d.* to 3*s.* 6*d.* per tally; Cauliflowers, 3*s.* to 7*s.* per tally; Sea-kale, 1*s.* to 1*s.* 6*d.* per punnet; Brussels Sprouts, 1*s.* 3*d.* to 1*s.* 9*d.* per half-sieve; Spinach, 1*s.* to 2*s.* per bushel; Greens, 9*d* to 1*s.* 6*d.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Carrots, 1*s.* 6*d.* to 3*s.* do.; Parsley, 1*s.* to 2*s.* do.; Horseradish, 1*s.* 2*d.* to 1*s.* 4*d.* per bun.; Celery, 4*d.* to 10*d.* do.; frame Cucumbers, 2*s.* to 3*s.* 6*d.* per dozen; Parsnips, 4*d.* to 8*d.* per score of 22; Beetroots, 3*d.* to 6*d.* per dozen; Endive, 1*s.* to 1*s.* 6*d.* do.; Cabbage Lettuces, 1*s.* to 1*s.* 6*d.* do.; Leeks, 2*s.* do.; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; English Onions, 5*s.* to 5*s.* 6*d.* per cwt.; Spanish do., 6*s.* to 8*s.* per case; Dutch do., 2*s.* 6*d.* to 2*s.* 9*d.* per bag of 110 lb.; Belgian do., 2*s.* 6*d.* to 2*s.* 9*d.* do.; Carrots, 20*s.* to 60*s.* per ton.

Stratford: *November* 11.—There has been an excellent supply of all kinds of produce at this market, and a brisk trade was done at the under mentioned quotations:—Cabbages, 2*s.* 6*d.* to 4*s.* per tally; Savoys, 2*s.* 6*d.* to 4*s.* 9*d.* do.; Cauliflowers, 3*s.* 6*d.* to 6*s.* do.; Turnips, 3*s.* to 3*s.* 6*d.* per dozen bunches; do. 35*s.* to 40*s.* per ton; Carrots, household, 45*s.* to 50*s.* do.; do., cattle feeding, 25*s.* to 35*s.* do.; Mangels, 17*s.* to 18*s.* do.; Swedes, 18*s.* to 20*s.* do.; Onions, English, 90*s.* to 100*s.* do.; Dutch, 4*s.* to 4*s.* 9*d.* per bag; Apples, English, 3*s.* to 7*s.* per bushel; Watercress, 7*d.* per dozen.; Carrots, 2*s.* to 3*s.* per dozen bunches; Celery, 6*s.* to 9*s.* per dozen rolls; Dutch Apples, 14*s.* 6*d.* to 15*s.* 6*d.* per barrel.

POTATOS.

Borough and Spitalfields: *Nov.* 11.—Quotations:—Hebrons, 60*s.* to 90*s.*; Regents, 50*s.* to 75*s.*; Best, 90*s.* to 100*s.*; Magnums, 55*s.* to 85*s.*; Scotch, 80*s.* to 100*s.*; Imperators, 60*s.* to 75*s.* per ton.

Spitalfields: *Nov.* 12.—Quotations:—Victorias, 60*s.* to 70*s.*; Hebrons, 55*s.* to 80*s.* Imperators, 60*s.* to 90*s.*; Champions, 60*s.* to 70*s.*; Regents, 55*s.* to 90*s.*; Magnums, 50*s.* to 80*s.* per ton.

Stratford: *Nov.* 11.—Quotations:—Magnums, light, 55*s.* to 75*s.*; do., dark, 45*s.* to 50*s.*; Imperators, 55*s.* to 70*s.*; Hebrons, 55*s.* to 60*s.* per ton.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80*s.* to 102*s.* 6*d.*; inferior, 40*s.* to 75*s.*; hay, best, 60*s.* to 87*s.*; inferior do., 26*s.* to 57*s.*; and straw, 24*s.* to 39*s.* per load.

Notices to Correspondents.

*** **Owing to the pressure on our space, many articles are postpned. Some fifty reports of Chrysanthemum Societies clamour for admission, but we think our readers would scarcely thank us if we inserted them all, even if we could do so.**

Antiquity of Glasshouses for Plants: *P. E.* The Romans employed them 1800 years ago. The glass was of a thick rough description.

Cedars: *Coniferæ.* The planting had better be deferred to the end of the month of March. To get the leader to go away, prune off the tips of the branches which have an erect, or partially erect, growth, but do not touch the lowest, or horizontal branches. The bleeding of the shoots will not do any harm, but you may stop it by means of styptic, or the application of a piece of red-hot iron.

Coning of the Deodar Cedar: *E. W. G.* It has formed occasionally.

Cyclamens: *R. S.* The grubs you send are those of a weevil often figured and described in these columns. Trap them at night with slices of Carrot.

Dwarf Apple Stocks: *G. W.* Malus paradisiaca, or Bush-Apple, is one. It is known as the Paradise Apple, a native of the Caucasus, Southern Russia, and Tartary. The leaves are elliptic, woolly on the underside; petal-stalks very short; stigma not hairy, and equal in length to the anthers; fruit red, or yellowish. The St. John's Apple is another dwarfing Apple-stock. It is much less woolly than the former; the twigs have a shining brown rind, and differs also in having very brittle roots. The Sweet Apple, the Doucin of the French, has woolly hair on the summer shoots and leaves; the latter are rounded at the base. It makes much fewer suckers than the former. Our common Codlin appears to be a bushy form of this species.

Hollyhock: *G. S.* There was a book published on the culture of this plant by Mr. Paul, but it is probably out of print. Try in an old book-shop.

Lilium auratum: *J. D. M.* Nothing unusual. We have seen as many as 150 flowers on fasciated stems.

Names of Plants: *C. H. J.* 1, Leaves only—apparently Stachys betonica; 2, Achillea ptarmica; 3, Origanum vulgare, marjoram; 4, Gout-weed (Aegopodium podagraria); 5, Tarragon (Artemisia Dracunculus); 6, Mentha Pulegium (Penny-royal; 7, Nepeta Mussini. — *M. F.* Cestrum aurantiacum.—*J. W. & S.* Rhamnus hybridus. — *A. Sim.* Aster ericoides.—*C. W. C.* 1, Pteris geranioides; 2, Anemidictyon Phythlides; 3, Pteris hastata macrophylla; 4, Pellea? Send fertile frond; 5, Cheilanthes leudigera; 6, Adiantum cuneatum var.; 7, Adiantum intermedium: 8, number lost, send again; 9, Pteris argyræa; 10, Lastrea aristata variegata; 11, number lost; 12, Oxychinum japonicum, if not full grown.—*T. P.* 1, Physalis Alkekengi, Bladder Cherry; 2, Aster dumosus; 3, Doryopteris palmata.

Strawberry Growing in the Midlands: *J. C.*—The net profits per acre may range from £20 to £25, the gross returns sometimes being £100 per acre. Your coals are too dear, small coal sufficiently good for heating purposes should be purchasable at 8*s.* to 10*s.* per ton. Coke is cheap at 5*s.* per ton. The weight of Strawberries from a plant in a 32-pot might be from 4 to 8 oz., according to season and variety. No regular supply can be expected in the autumn and early winter.

CATALOGUES RECEIVED.

Thos. Methven & Sons, 15, Princes Street, Edinburgh—Forest Trees, Shrubs, &c.

Little & Ballantyne, Carlisle—Trees.

Thos. Kennedy & Co., 106 and 108, High Street, Dumfries—Forest, Fruit, and Ornamental Trees.

Alexander Regnier, 44, Avenue Marigny, Fontenay-sous-Boise, Seine — Orchids and Carnations.

Ryder & Son, Sale, Manchester — Bulbs, Japanese Primulas, Roses, Fruits, &c.

W. Hetherington, Swanscombe, Kent—Chrysanthemums.

Gilbert Davidson, Ammanford, R.S.O., South Wales—Fancy Pansies.

W. Smith & Son, 18, Market Street, Aberdeen—Nursery Stock, Roses, &c.

Communications Received:—Reeve, Margate.—One Who Wants to Know (your leaves are under examination).—H. E.—J. D. S., Baltimore.—J. K. B., Haarlem (*félicitations empressées.*—P. C.—A. D.—W. S.—H. C., Geneva.—C. de B., Lierre.—Price & Co.—T. H.—E. E.—Gusmus.—M. A. C.—J. D.—A. D.—T. Woodford.—Newport.—W. R.—F. R.—E. J.—W. D —W. C.—G. W.—F. C. Heinemann.—G. G.—J. G.—W. S. S.—Lyminton.—D. M. S. Castle.—E. C.—R. D.—J. J. W.—J. Kent.—J. D.—J. C. W.

Photographs, &c, Received with Thanks.—Pitcher & Manda.—H. E., Jersey.—T. H., La Mortola.—F. C. Heinemann, Erfurt.—C. P. C.

CHRYSANTHEMUM SEASON.

STANDEN'S

Established Nearly 30 Years. **MANURE.**

It is now generally acknowledged that this highly concentrated Manure exceeds all others in general fertilizing properties and staying powers, thus rendering its money value at least double that of other Manures.

More prizes have been obtained through the use of this Manure by Chrysanthemum exhibitors than by any other Fertilizer.

It promotes a rapid, healthy, and robust growth to plants generally.

It is a clean and dry Powder, with very little smell.

It is consequently particularly adaptable for Amateurs, equally with Nurserymen.

VOLUNTARY TESTIMONIALS,
the originals of which can be seen if desired:-

MESSRS. CORRY, SOPER, FOWLER & CO.,

"Fareham.

"Sirs,—We have used Standen's Manure for Chrysanthemums, mixed with the mould, when potting their last shift, and an occasional sprinkle over the top of the pots during their growth, especially just before the bud shows. We took last season thirty-one First Prizes, Silver Cup at Portsmouth, £25 Silver Cup, Devizes, and £10. We can highly recommend it for plants, especially Roses Pelargoniums, Azaleas, Gardenias, and Stephanotis. Our Stephanotis this season we can pick by the gallon, from six to eight pips on each spray."

(Signed) W. & G. DROVER.

"We have used Standen's Manure for some years, and have never found any fertilizer so safe and valuable. Its action is literally 'magical.' We have tried it on unhealthy plants which seemed past recovery, and it has restored them to their natural vigour. However valuable other fertilizers may be, none can be compared to this. Camellias grown in the same pots *for ten years* are as healthy as if just repotted."

C. M. HOVEY, Boston, U.S.A.

Sold in Tins of increased sizes—6d., 1s., 2s. 6d., and 5s. 6d. each.

And in Kegs (free), at the following greatly reduced prices:—28 lb., 10s. 6d.; 56 lb., 18s.; 112 lb., 32s.

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PRICES — For Frames, &c., of 50 cubic feet, 6*d.*; 100 feet, 9*d.*; 500 feet, 1*s.*; 1000 feet, 1*s.* 6*d.*; 4000 feet, 5*s.* each.

Owing to the enormous demand, intending users should give their Seedsmen Early Orders to secure a supply.

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BULBS.— Special Cheap Offer.— Polyanthus Narcissi floribundus, the popular variety from the Scilly Isles, a grand trusser, and forces well, fine bulbs, 8s. 6d. 100, 1s. 6d. doz.; Grand Monarques, ditto, fine bulbs, and true, 10s. 6d. 100, 2s. doz.; Grand Soliel d'Or, ditto, very early, 8s. 6d. 100, 1s. 6d. doz.; Narcissi poeticus, Pheasant's Eye, 1st size, 13s. 1000, 2s. 100; unsorted sizes, 10s. 1000, 1s. 6d. 100; Narcissi biflorus, Twin Narcissi, 1st size, 12s. 6d. 1000, 1s. 6d. 100; Narcissi Double White Gardenia-flowered, 30s. 1000, 3s. 6d. 100; Double Daffodils, Telamonius plenus, 30s. 1000, 3s. 6d. 100; Ixias, beautiful bright scarlet, 30s. per 1000, 3s. 6d. per 100.
Shallots, good sample, sound English, per cwt., 15s.
PONTEY'S Wholesale and Retail Bulb and Seed Establishment, Plymouth. (Established nearly a century).

A LIST of SPECIALTIES on SALE, which includes VIOLETS, in large clumps, by the dozen or hundred; Border CARNATIONS, which include Gloire de Nancy, Dr. Waggott, and others, by the dozen or hundred. ROSE TREES, Standard and Half-Standard; Teas and Perpetuals.
Veitch's Telegraph CUCUMBER, warranted true, by packet or ounce.
Also Gilbert's Royal family of the BRASSICA TRIBE, including new seed of Chou de Burghley, Universal SAVOY, Late White Victoria BROCCOLI; and lastly, but not lastly, Gilbert's King of the BRUSSELS SPROUTS. Send for particulars to—
R. GILBERT, High Park Gardens, Stamford.

SEAKALE for Forcing.—Superior Selected Crowns, 75s. per 1000; under 500, 8s. 6d. per 100. Cash with Orders. RHUBARB ROOTS and RHUBARB SEED of all varieties. Price on application.
ALFRED ATWOOD, Grower, 21, Shillington Street, Battersea, S.W.

RASPBERRY CANES. — 250,000 of the famous Fastolf variety for Sale. Price 25s. per 1000. In lots of 20,000 at 20s. per 1000, free on rail, Wisbech. Also 50,000 "Semper Fidelis," at 30s. per 1090.
MANAGER, Osborne House Farm, Wisbech.

NARCISSUS, Double White, price £1 per bushel; sample 50, post-free, for 2s. Cash with order.
J. J. CLARK, Goldstone Farm, Brighton.

CHEAP OFFER.
Strong standard English ELMS, 10 to 20 feet, 50s. to 100s. per 100.
Strong standard ASH, 12 feet, 30s. per 100.
,, Balsam POPLAR, 12 feet, 30s. per 100.
,, Eating CHESTNUT, 8 feet, 12s. per dozen.
,, ACACIA, 10 feet, 40s. per 100.
,, Standard PEARS, all the leading sorts, 80s. to 100s. per 100.
,, Horizontal-trained APPLES, extra-strong, best sorts, 18s. to 24s. per dozen.
,, Victoria PLUMS, dwarf-trained, 18s. per dozen.
,, Standard ROSES, H.P., 100s. per 100.
,, Dwarf do., 25s. per 100.
Extra-strong Dwarf GLOIRES, several branches, 7s. per dozen, 50s. per 100.
,, ,, MARÉCHAL NIEL, do., 9s. per dozen, 70s. per 100.
,, ,, Black CURRANTS, 3-yr., Red and White do., 10s. per 100, 90s. per 1000.
,, ,, GOOSEBERRIES, best Lancashire sorts, 12s. per 100.
HOPWOOD'S, Belle Vue Nursery, Cheltenham.

SHRUBS and CONIFERÆ. — American Arborvitæ, 2½ feet, 20s. per 100; Berberis aquifolia, 1½ foot, 12s. per 100; B. Jamesonii, 20s. per 100; Box Trees, 1½ to 2 feet, 16s. per 100; Cotoneaster Simonsii, 2 feet, 12s. per 100; Escallonia macrantha, pots, fine, 30s. per 100; Pampas Grass, strong, 6s. per dozen; Hyponium calycinum, strong, 12s. per 100; Laurels, common, 2 feet, 10s. per 100, 3 to 4 feet, 16s. per 100; Caucasnum, 4 feet, 24s. per 100; Colchie, 1½ to 2 feet, 12s. per 100, 4 feet, 24s. per 100; L. rotundifolia, 2 feet, 14s. per 100; Lilies, white and purple, 4s. per dozen; English Yews, 1½ to 2 feet, 24s. per 100, 2 to 2½ feet, 30s. per 100; Araucaria imbricata, 3 to 3½ feet, 36s. per dozen, 4 feet, 48s per dozen; Cupressus Lawsonii, 2½ feet, 25s. per 100, 3 to 4 feet, fine, 35s. per 100; Stricta, 2 to 2½ feet, 30s. per 100, 3 to 3½ feet, 50s. per 100, 6 to 7 feet, 18s. per dozen; C. erecta, 2 to 2½ feet, 30s. per 100, 3 to 3½ feet, 50s. per 100; extra, Picea nobilis, 9 to 12 inches, 30s. per 100, 2 to 3 feet 2s. to 3s. each; Nordmannia, 2 to 2½ feet, 60s. per 100, 3 feet, 12s. per dozen; Retinospera plumosa, 1½ to 2 feet, 25s. per 100, 2½ feet, 35s. per 100, 4 feet, 60s. per 100; R. squarrosa, 2½ feet, 35s. per 100, 4 feet, 12s. per dozen; Thuia Lobbii, 3 feet, 30s. per 100, 4 to 5 feet, 50s. per 100, 6 to 7 feet, 75s. per 100; Thuiopsis dolobrata, 1½ to 2 feet, 30s. per 100, 2½ to 3 feet, 24s. per dozen, 4 feet, 36s. per dozen, extra.
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RUSSIA MATS—New Archangel, 9 ft. 4 ins. by 4 ft. 6 ins., 22s. doz.; Heavy Petersburg, 7 ft. by 3 ft. 8 ins., 12s. doz. SPÉCIALITE TOBACCO PAPER, 10d. per lb., 28 lb. for 21s. TOBACCO CLOTH, 1s. per lb., 28 lb. for 26s. ORCHID PEAT, 8s. per sack. PEAT, LOAM, SAND, MANURES, and SUNDRIES. Price List free. — W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

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GENUINE ORCHID PEAT, 8s. 6d. per sack; 5 sacks, 40s.;
BEST BROWN FIBROUS PEAT, 5s. per sack; 5 for 22s. 6d.
BLACK FIBROUS PEAT, 4s. 6d. per sack; 5 for 20s.
COARSE SILVER SAND, 1s. 6d. per bushel; 14s. half ton; 24s. per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1s. per bushel. Chrysanthemum Compost, 1s. 6d. per bushel; 4s. per sack. Tobacco Cloth or Paper, 1s. per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, &c., &c.

RUSSIA MATS:—	Per bund. of 10.	Per bund. of 25.	Per bund. of 100.
ARCHANGEL	16/-	40/-	140/-
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,, 2, ,, ...	7/6	17/-	65/-
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OCTOBER IS THE BEST MONTH TO APPLY IT.


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"Cherry Gardens, Lenham Heath, Maidstone, "January 20, 1890.
"DEAR SIR,—I am pleased to tell you your Tree Dressing gave me great satisfaction in sticking the Winter Moth. I found a great many on the dressing in November.
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"W. Horne."
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4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, 22s.; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 26s. per ton, in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
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RHODODENDRON PEAT, of fine quality; COCOA-NUT FIBRE REFUSE; BONE MANURES, the finest quality ground, Meal, ¼ to ½ inch; MUSHROOM SPAWN, TOBACCO-PAPER, RAFFIA and NEW ARCHANGEL MATS, CAMPBELL'S NEW FUMIGATING INSECTICIDE, and all other Garden Requisites of the best quality.
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SPECIAL for Orchids, Choice Plants, Hard wooded and Fern do., and Rhododendrons. Excellent LEAF-MOULD, SAND, Rich LOAM, PEAT-MOULD, CHARCOAL, COCOA FIBRE, SPHAGNUM, and all GARDEN SUNDRIES. PEAT MOSS LITTER.—**EPPS & CO.**, The Peat Dépôt, Ringwood, Hants.

ORCHID PEAT, PEAT MOULD, &c.

QUALITY THE VERY FINEST. (All sacks included.)	Per sack.	5 sacks for	Truck loads of 10 yds. and upwards loose, free on rail, per yard.
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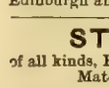
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These Frames are made of good red wood deal, well seasoned, 1½ inch thick, with our improved corners. The Lights are 2 inches thick, with iron cross-bar and handle. Painted three times, glazed, ready for use, with 21-oz. English glass. Stocked in the following useful sizes:—
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1-Light Frame,	6 feet by 4 feet	...	£2	0	0
2 ,, ,,	6 feet by 4 feet	...	2	0	0
2 ,, ,,	8 feet by 5 feet	...	2	15	0
2 ,, ,,	8 feet by 6 feet	...	3	0	0
3 ,, ,,	12 feet by 6 feet	...	4	4	0
4 ,, ,,	16 feet by 6 feet	...	5	8	0
PIT LIGHTS.	6 feet by 4 feet, painted and glazed ...		0	14	0
	Ditto ditto unglazed ...		0	5	6


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B. S. WILLIAMS MEMORIAL FUND.

TREASURER'S REPORT OF SECOND LIST OF SUBSCRIPTIONS RECEIVED :—

Sept.	£	s.	d.
25—Mr. JAMES WALTERS, Mount Radford Nursery, Exeter	1	1	0
JOSEPH BROOME, Esq., 6, St. Peter's Square, Manchester	10	10	0
Mr. W. C. CHAPMAN, Hawkesyard Gardens, Rugeley, Staffs.	1	0	0
26—Mr. RICHARD BUTLER, The Gardens, St. Dunstan's, Regent's Park	1	1	0
W. H. MILNER, Esq., Boothroyd, Brooklands, near Manchester	3	3	0
Oct.			
2—HENRY BODDINGTON, Esq., J.P., Pownall Hall, Wilmslow, Manchester	5	5	0
3—Messrs. PUTZ AND ROES, Erfurt, Germany	1	1	0
6—Messrs. THOMAS HOWES AND SON, Highbury Nursery, Blackstock Road, Finsbury Park	2	2	0
Mons. L. DELARUYE CARDON, Nurseryman, Ledeberg, Ghent	1	1	0
7—Mr. GEORGE THORPE, Shepperton House, Lee Road, Kent, S.E.	0	10	6
9—*Per* Mr. JAMES MOIR, The Gardens, Clement Park, Lochee, N.B. :—			
Mr. JAMES MOIR	0	10	6
Collected by Mr. MOIR, various small sums, amounting to	2	13	6
11—Mons. MASSANGE DE LOUVREX, au Château de Baillonville, près Marche, Belgique	1	1	0
13—ROBERT WARNER, Esq., Chelmsford	10	10	0
14—*Per* Mr. OSBORN, The Gardens, East Sheen Lodge, S.W. :—			
Mr. OSBORN, East Sheen	1	1	0
Mr. F. R. KINGHORN, Sheen Nursery, Richmond	2	2	0
Mr. BROWN, Florist, Richmond	0	10	6
Messrs. DICKSON AND ROBINSON, 12, Old Mill Gate, Manchester	3	3	0
Mr. WYTHES, The Gardens, Syon House, Brentford	1	1	0
16—*Messrs. DICKSON, BROWN, AND TAIT, 45, Corporation Street, Manchester	5	5	0
*ROBT. TAIT, Esq.	5	5	0
*BRUCE FINDLAY, Esq., Royal Botanic Gardens, Manchester	5	5	0
Mr. E. BENARY, Erfurt, Germany	2	2	0
Mr. E. G. HUGHES, Victoria Street, Manchester	1	1	0
Mr. W. H. GOOD, Wonham Manor, Betchworth	0	10	6
H. M. POLLET, Esq., 42, Fann Street, E.C.	5	5	0
21—Mr. A. INGRAM, care of Messrs. Sander & Co., St. Albans	3	3	0
Mr. J. BELL, The Gardens, Strathfieldsaye	0	10	0
Per Messrs. JOHN LAING AND SONS :—			
Messrs. J. LAING AND SONS, Forest Hill	5	5	0
J. MILLER, Ruxley Lodge, Esher	1	1	0
A. J. ELPHINSTONE, Packington Hall Gardens, Coventry	0	10	6
T. CRIPPS AND SON, Nurserymen, Tunbridge Wells	1	1	0
W. WILLETT, Bishopshaw Gardens, Warminster	0	5	0
MOSES JENKINSON, Newcastle, Staffs	0	5	0
W. W. CHRISTIE, Rugley Gardens, Alcester	0	5	0
E. SAWYER, Hyde Nursery, Edmonton	1	1	0
J. BARNARD, Mostyn Hall Gardens, Mostyn	0	5	0
J. HOUSEGO, Woodcote Park Gardens, Epsom	0	5	0
W. C. SLOCOCK, Goldsworth Nursery, Woking	1	1	0
Per SHIRLEY HIBBERD :—			
Dr. ROBT. HOGG, 171, Fleet Street	5	0	0
Mr. A. COLE, Llandudno	0	5	0
W. SOWERBY, Esq., Botanical Gardens, Regent's Park	1	1	0
Mr. THOS. BAINES, Southgate	1	1	0
Mr. H. A. TRACY, Orchid Nursery, Twickenham	1	1	0
Mr. JAMES O'BRIEN, Harrow-on-the-Hill	1	1	0
Per Mr. ALFRED OUTRAM :—			
Mr. E. EASEY, The Grange Gardens, Highbury New Park, N.	0	5	0
Mr. J. STEVENS, The Gardens, Codicote Lodge, Welwyn	0	5	0
Mr. R. GLENDENNING, Victoria Parade, Upper Holloway	2	0	0
Mr. P. M. BINOT, Petropolis, Brazil	2	2	0
Mr NORMAN, The Gardens, Hatfield House, Hatfield	0	5	0

* Special Donations to Orphan Fund.

Oct.	£	s.	d.
21—*Per* Mr. ALFRED OUTRAM—*continued.*			
Mr. P. BRENER, Schloss Commende, Bonn, Germany	0	10	0
Mr. JOS. FINLAY, The Gardens, Lynton House, Gravesend	0	5	6
Mr. J. McDONALD, The Gardens, Exton Park, Oakham	0	10	0
Mr. A. G. CATT, Parkfield Gardens, Worcester	1	1	0
Mr. W. T. PARSONS, Owthrope Gardens, Bournemouth	1	1	0
Mr. F. MOORE, The Gardens, Blendon Hall, Bexley	0	10	6
W. J. PALMER, Esq., Hillside, Reading	1	0	0
Mr. T. JONES, The Gardens, Elvetham Park, Winchfield	0	10	6
Mr. MALCOLM DUNN, Dalkeith Gardens, Dalkeith	1	1	0
Mr. G. W. CUMMINS, The Grange Gardens, Hackbridge	0	10	6
Mr. J. CONDIE, The Grange Gardens, Stanmore	0	10	0
Mr. JAS. DON, Seed Merchant, Nottingham	1	1	0
Mr. WM. ARCHER, Hill House Gardens, Saffron Walden	0	5	0
Mr. MILLINGHAM, Pine Apple Nurseries, Maida Vale	0	2	6
Mr. BROADY, 45, Avenue Road, St. John's Wood, N.W.	0	2	6
Mr. SKELTON, Zoological Gardens, Regent's Park	0	2	6
Mr. THOS. WINTER, Chapel Ground, St. John's Wood	0	5	0
Mr. JAMES PHILPOT, Foxbury Manor, Hungerford	0	5	0
Mr. ROSEWEAR, Victoria and Paradise Nursery, Holloway	1	1	0
Mr. ROBERT SAWFORD, The Gardens, Danesbury, Welwyn	0	10	0
Mr. CUTLER, Hill House Gardens, Elstree, Herts	0	5	0
Mr. W. TUBB, 28, Hadley Street, Kentish Town, N.W.	0	5	0
Mr. J. POLING, Hall Place, West Meon	0	5	0
Mr. H. BROWN, The Gardens, Roydon Lodge, Roydon	0	5	0
G. SMITH, Esq., The Mansion, Wood Green, N.	3	3	0
Mr. W. DOUGLAS, The Gardens, Chilham Castle, Canterbury	1	1	0
Mr. A. CHAPMAN, The Gardens, Weston Birt, Tetbury	1	1	0
Mr. J. BAILEY, The Gardens, Lypiatt Park, Stroud	5	0	0
Mr. J. CHILD, Houndswood, St. Albans	1	1	0
Mr. T. THOMSON, The Gardens, Kemnal Manor, Chislehurst	0	10	6
Mr. W. YOUNG, The Gardens, Barton Court, Kintbury	1	1	0
Mr. T. WHEELER, The Gardens, Jesmond, Lower Newcastle	0	5	0
Messrs. EPPS AND CO., Horticultural Dépôt, Ringwood	2	2	0
Mr. W. WOOD, The Gardens, Bishopstowe, Torquay	0	5	0
Mr. C. BROOKS, The Gardens, Red Rice, Andover	0	5	0
Mr. J. HOWES, The Gardens, Ashwell Hall, Oakham	0	5	0
Mr. F. LENG, The Gardens, Barford Hill, Warwick	0	7	6
Mr. JOHN MAY, Gordon Nursery, St. Margaret's, Twickenham	1	10	0
Mr. JAS. MALCOLM, The Gardens, Green Bank, Sheffield	0	12	6
Mr. THOS. BALLIMORE, The Gardens, Fern Lodge, Bracknell	0	5	0
Mr. JOHN KINGAN, The Gardens, Stonefield, Lincoln	0	5	0
Mr. G. ALLEN, Berry Hill, Taplow	0	10	6
HY. SHAW, Esq., Buxton	1	1	0
Messrs. HARRISON AND SONS, Leicester	1	1	0
Mr. ALFRED SHARP, The Gardens, Holly Court, Ardleigh	0	10	6
Mr. THOS. POYNTZ, Fringilla Gardens, Linnet Lane, Liverpool	0	5	0
Mr. W. SMYTH, The Gardens, Basing Park, Alton	0	10	0
Mr. JOHN ROBSON, Bowdon Nurseries, Altrincham	1	1	0

Oct.	£	s.	d.
21—*Per* Mr. ALFRED OUTRAM—*continued.*			
Mr. J. BENNETT, The Gardens, Stapleford Park, Melton Mowbray	0	10	0
Mr. JOHN GILBY, The Gardens, Norton Lindsey, Warwick	0	10	0
Mr. THEOBALD, The Gardens, West Hill, Highgate	0	5	0
Mr. ROBT. BROWN, The Gardens, Elmslie Court Road, Eltham, Kent	1	1	0
Mr. T. COOPER, The Gardens, Crany Hall, Holmes Chapel	0	5	0
Mr. JAS. FOWLER, The Gardens, Harewood, Leeds	0	10	6
Mr. F. W. RUSSELL, The Gardens, Woodgreen Park, Cheshunt, Herts	0	10	6
Mr. HY. MOUNT, The Gardens, Trengwainton, Penzance	0	10	6
Mr. G. H. RICHARDS, 1, Belvedere Crescent, Lambeth	0	10	6
JOHN WATSON, Esq., Earnock, Hamilton, N.B.	5	0	0
Mr. T. PRITCHARD, The Gardens, Umberslade, Birmingham	0	10	0
Messrs. CAULL AND MURDY, The Gardens, Lenton Firs, Nottingham	0	4	0
Mr. J. HAWTON, West Hill House, Lenton, Nottingham	0	2	0
Mr. T. D. MYLES, Appley Towers, Ryde	0	10	0
Mr. W. ELPHINSTONE, The Gardens, Shipley Hall, Derby	0	10	0
Mr. C. TERRY, The Gardens, Tatton Park, Knutsford	0	5	0
Mr. M. GLESSON	0	10	0
Mr. ROBERT TODD, Woolton Wood, Liverpool	1	1	0
Mr. W. COOMBER, Royal Botanic Gardens, Regent's Park	1	1	0
Mr. EDWARD WILSON, The Gardens, Uffington, Stamford	0	5	0
Mr. JOSEPH HEARD, The Gardens, Manor House, Chiselhurst	0	5	0
Mr. G. FORD, The Gardens, Wrest Park, Beds	1	1	0
Mr. SAMUEL LOMAS, The Gardens, Heysham Hall, Lancaster	0	10	0
Mr. ALEXANDER REID, The Gardens, Possingworth, Hawkhust	0	10	0
Mr. T. YOUDS, The Gardens, Parkmount, Belfast	0	10	6
Mr. JINKS, The Gardens, Wydrington, Birmingham	0	10	6
Mr. T. SELWOOD, The Gardens, Eaton Hall, Chester	0	10	6
Mr. T. CHALLIS, The Gardens, Wilton House, Salisbury	1	1	0
T. W. MOORE, Esq., Botanic Gardens, Dublin	1	1	0
Per Mr. JAMES O'BRIEN :—			
R. A. TODD, Esq., Honeyden, North Cray, Kent	1	1	0
Per Mr. SHIRLEY HIBBERD :—			
Mr. DUNCAN McLELLAN, Public Parks, Glasgow	1	1	0
Mr. ROBERT McLELLAN, Partick	0	5	0
Collected by Mr. R. BULLEN, Botanic Gardens, Glasgow	1	0	0
Mr. HENRY CANNELL, Swanley, Kent	5	5	0
Mr. JAMES COOMBES, Englefield Gardens, Reading	0	10	6
Mr. GEORGE PAUL, Cheshunt	3	3	0
Dr. M. T. MASTERS, F.R.S., 41, Wellington Street, Covent Garden	3	3	0
Mr. WILLIAM EARLEY, Ilford	1	0	0
Mr. G. WYTHES, The Gardens, Sion House, Brentford	0	10	6
30—Messrs. JAMES COCKER AND SON, Sunny Park, Aberdeen	1	1	0
J. BROUGHTON DUGDALE, Esq., Wroxall Abbey, Warwick	2	2	0
Mr. G. T. SILVER, Wroxall Gardens, Warwick	0	10	6
Messrs. DICK RADCLYFFE AND CO., 129, High Holborn	1	1	0
Messrs. CHARLESWORTH, SHUTTLEWORTH AND CO., 213, Park Road, Clapham	2	2	0

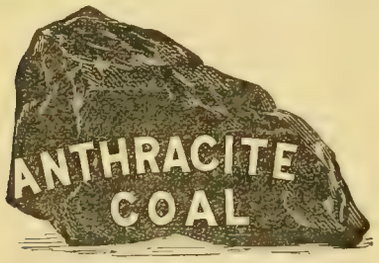
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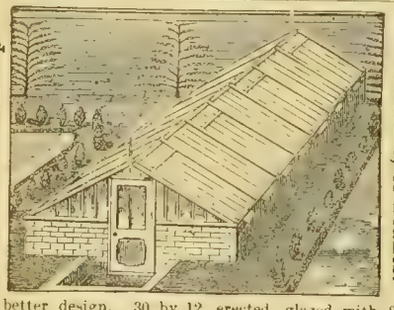


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Quotations for London delivery can be obtained for the Northern, Western, and South-Western districts, from Messrs. G. R. CARTER AND SON, Coal Exchange, E.C.; and for the South-Eastern district, from Messrs. W. DOWELL AND CO., Coal Merchants, Greenwich, S.E.

Only Best Materials Used. Sound Workmanship.



For Tomatos, Cucumbers, Mushrooms, or Plants.

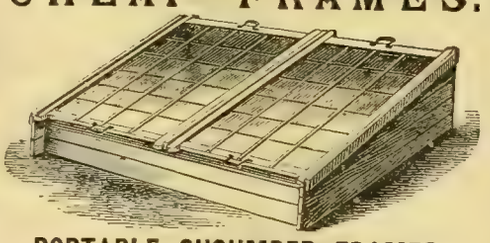
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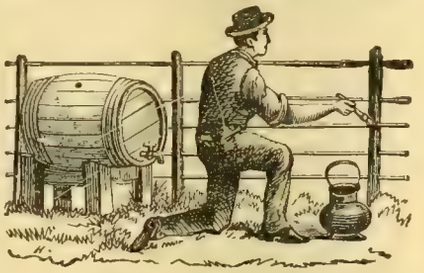
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CAUTION.—Every Cask bears the above Registered Trade Mark. Beware of cheap imitations.

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THE Improved TREE PRUNER.—Coppin's Patent, specially mentioned in Mr G. Bunyard's Lecture, see *Gardeners' Chronicle*, p. 440, Oct. 18, 1890. Lists and Testimonials free, from Patentees, G. COPPIN AND SONS, Addington, Surrey.



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For Greenhouses, Bedrooms, &c.
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(a scientific remedy free from poison), by its tonic antiseptic action on the disordered membrane quickly stops a harassing cough, protects from cold, repels disease germs, and maintains the vocal organs in perfect condition for speaking and singing.
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EPPS'S
GRATEFUL—COMFORTING.
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J. SMITH thanks the numerous Applicants, and begs to inform them that the VACANCY HERE IS NOW FILLED UP.—Mentmore, November 11.

WANTED, on December 1, a HEAD WORKING GARDENER for Essex, 21 miles from London. Married, no children; must thoroughly understand Kitchen and Flower Gardens, also Vines and Orchard House. Wife, if possible, to undertake Laundry Work.—Apply, stating age, how long in last situation, and wages required, to J. L. NEWALL, Esq., Forest Hall, Ongar, Essex.

WANTED, a GROOM and GARDENER.—Respectable, steady, married man, without family preferred. Cottage provided. Good wages.—Application, by letter only, E W D, HEELIS, Handsworth Wood, near Birmingham.

WANTED, a FOREMAN, married. Must thoroughly understand the Culture of Fruit, Flowers, and Mushrooms.—Apply, with particulars, to T. CARTER, The Gardens, Ilam Hall, Ashbourne, Staff.

WANTED AT ONCE, a young MAN, for General Plant Growing, and Cut Flower in Nursery under Foreman. Willing and active Wages 18s.—Send copies of last testimonials to C. H. GORRINGE, Roselands Nursery, Eastbourne.

WANTED, a MAN, about 20 years of age, for the Houses. Must have had some experience amongst Vine, Peaches, and attending Fires. Wages 14s. and bothy.—TODDINGTON ORCHARD CO., Winchcombe.

WANTED AT ONCE, a good GARDEN LABOURER, age 35 to 40, married man without family. Wife to attend Lodge Gate. Wages 16s. per week and cottage.—H. PARRISH, Gardener, Goodrest, Reading.

GARDENING APPOINTMENTS.

Mr. John McLeod, late Gardener to Robert Smith, Esq., Brentham Park, Stirling, has been appointed Gardener to Earl Temple, Newton Park, near Bristol.

Mr. James S. Harris, Gardener to Sheriff Robertson, Burnside House, Forfar, as Gardener to H. W. Hope, Esq., at Luffness, East Lothian.

Mr. James Alexander, from Dalkeith Gardens, N.B., to be Gardener and Forester to the Right Hon. Edward Stanhope, Revesley Abbey, Boston, Lincolnshire.

Mr. William Rushton, Gardener to Robert Tod, Esq., Clerwood, Midlothian, as Gardener to N. A. Donaldson, Esq., Cochna House, Dumbartonshire.

Mr. S. Campbell, from Messrs. Dicksons & Co.'s Nurseries, Edinburgh, to be Gardener to Forbest Leith, Esq., Fyvie Castle, Aberdeenshire.

Mr. John McLean, Gardener to Lady Pearce, at Cardell House, Wemyss Bay, N.B., has gone with Sir William G. Pearce, Bart., to take charge of the Gardens at Chilton Lodge, Hungerford, Berkshire; and Mr. Alexander McLean, his brother, and for many years Gardener to De Trafford, Esq., Croston Hall, Preston, as Gardener to Lady Pearce, Cardell House, Wemyss Bay, N.B.

Mr. John Smith, as Head Gardener to Bernard Beer, Esq., Elmwood, Bickley, Kent.

Mr. W. Roberts, late Gardener at the Red House, Keswick, as Head Gardener to Lady Cust, Leasower Castle, Birkenhead.

Mr. J. C. Smith, formerly Head Gardener, Barton Hall, Yorks, as Head Gardener to C. L. Stanley, Esq., Oakwood Hall, Rotherham.

Mr. W. Kneller, formerly Gardener to H. Faviell, Esq., Down Place, Guildford, as Head Gardener to Major Hadaway, Shackleford, Godalming.

WANT PLACES.

Letters addressed "Poste Restante" to initials or to fictitious names are not forwarded, but are at once returned to the writers.

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N.B.—The best and safest means of Remitting is by POST-OFFICE MONEY ORDER.

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DICKSONS, Royal Nurseries, Chester, (*Limited*), are always in a position to RECOMMEND MEN of the *highest* respectability, and *thoroughly practical* at their business. All particulars on application.
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RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, Liverpool, are in a position to recommend a first-rate man as HEAD GARDENER, or GARDENER and BAILIFF; also a thoroughly competent man as HEAD GARDENER, who has a good knowledge of Orchids; unexceptional references in each case.

B. S. WILLIAMS AND SON beg to intimate that they have at present in their Nursery and upon their Register some excellent Men, competent either to fill the situation of HEAD GARDENER, BAILIFF, FOREMAN, or JOURNEYMAN. Ladies and Gentlemen requiring any of the above will please send full particulars, when the best selections for the different capacities will be made.—Victoria and Paradise Nurseries, Upper Holloway, N.

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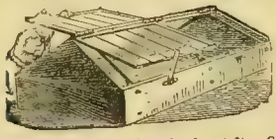
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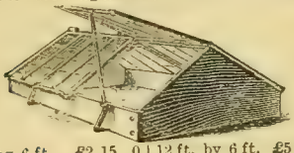
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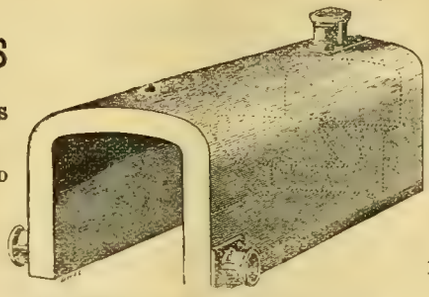
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Cash Prices. Carriage Paid on Orders of 40*s.* value.

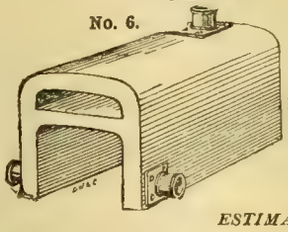
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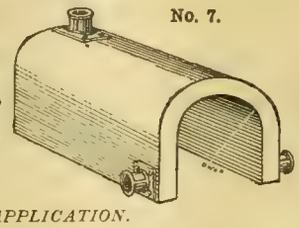
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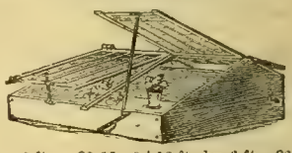
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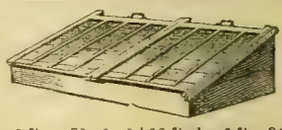
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8 ft. by 6 ft. 4 7 6 | 16 ft. by 6 ft. 7 12 6

No. 75.—MELON and CUCUMBER FRAME.

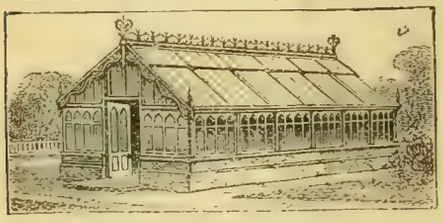


4 ft. by 6 ft. £2 0 0 | 12 ft. by 6 ft. £4 5 0
8 ft. by 6 ft. 3 0 0 | 16 ft. by 6 ft. 5 10 0

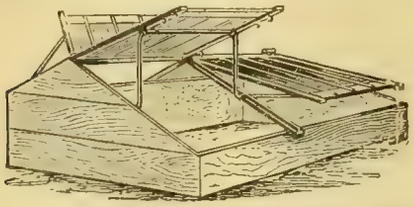
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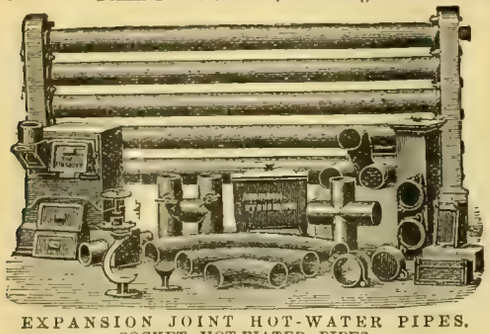
	Length.	Width.		
1 Light Frame,	4 feet by 6 feet ...	Cash Prices, Carriage Free. Cases extra, allowed if returned.	£3	15 0
2 ,, ,,	8 feet by 6 feet ...		4	7 6
3 ,, ,,	12 feet by 6 feet ...		6	0 0
4 ,, ,,	16 feet by 6 feet ...		7	12 6
5 ,, ,,	20 feet by 6 feet ...		9	5 0
6 ,, ,,	24 feet by 6 feet ...		10	17 6

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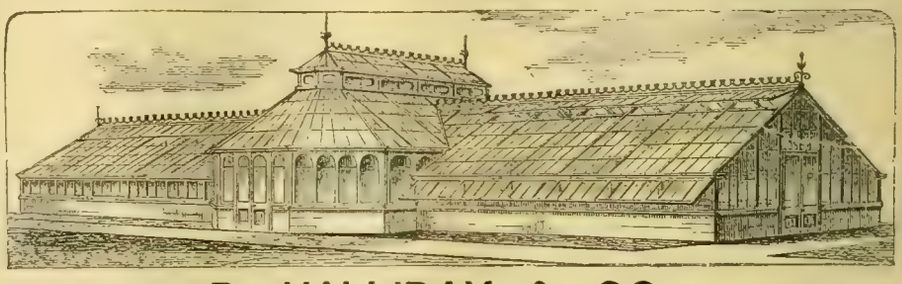
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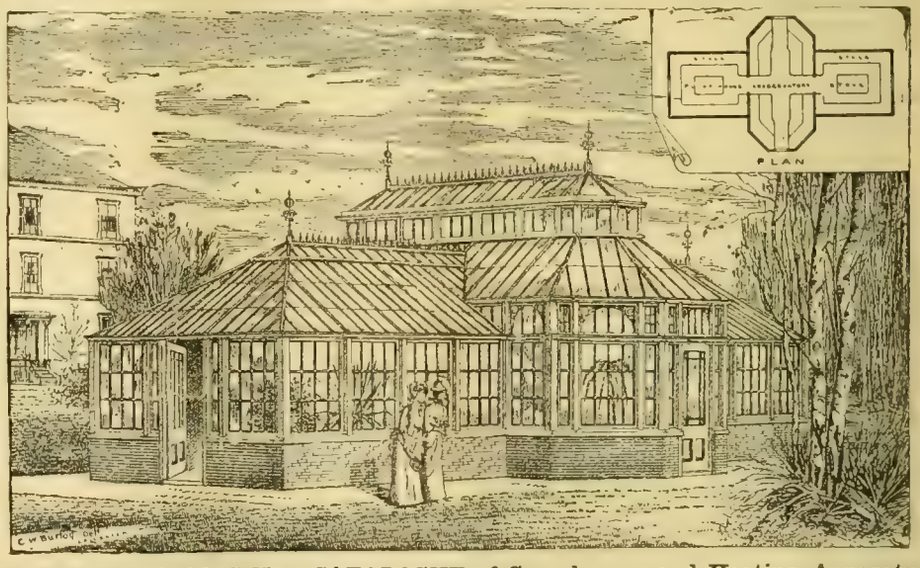
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THE GARDENERS' CHRONICLE IN AMERICA.

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Important to Gentlemen, Builders, Nurserymen, and Others.
Sale, MONDAY NEXT.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Cooksbridge, Sussex, on MONDAY NEXT, November 24, at 12 o'Clock, by order of Mr. Woollard, the Second Portion of the well-grown NURSERY STOCK, comprising thousands of Specimen and Border Shrubs, in great variety; 1000 Ornamental Trees, 500 large and bushy Aucubas, 3 to 5 feet; 1500 Common and Portugal Laurels, 1500 Fruit Trees, Currants, Gooseberries, 5000 Standard, Dwarf, and Climbing Roses, Herbaceous Plants, &c.

Now on view. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Merton Abbey.
CLEARANCE SALE of GLASS ERECTIONS, HOT-WATER PIPING, and BRICKWORK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Merton Abbey Abbey Nursery, Merton Abbey, Surrey, close to Merton Station, on MONDAY NEXT, November 24, at 12 o'Clock precisely, in consequence of the land being required immediately for building. The erections of 10 Large GREENHOUSES, 5000 feet of HOT-WATER PIPING, principally 4-inch, BOILERS, and many thousands of OLD BRICKS.

May be viewed. Catalogues had at The Grove Hotel, Merton; and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—The Sale of the Freehold Estate, announced to take place at the Auction Mart on November 28, IS POSTPONED.

Tuesday Next.
3000 LILIUM AURATUM, 1500 LILIUM LONGIFLORUM FORMOSUM, from Japan; a large assortment of NARCISSUS and DAFFODILS, and various Hardy BULBS, SCILLAS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, November 25, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Leamington.
SALE OF WELL-GROWN NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Leamington Nursery, Leamington, on TUESDAY and WEDNESDAY NEXT, November 25 and 26, at 12 o'Clock precisely each day, by order of Mr. E. Perkins, a portion of the beautifully-grown NURSERY STOCK, comprising 2000 Coniferæ and other Shrubs, 2000 Hollies, 2000 Aucubas, 3000 Thuia Lobbi and Golden Yews, 1000 well-grown Cupressus Fraserii, a large quantity of Laurels, Yews, &c., and numerous other Stock.

On view any day prior to the Sale. Catalogues had on the Premises, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.; and Leytonstone, E.

Wednesday Next.
300 AZALEA INDICA and A. MOLLIS, from Belgium, 40 large PALMS, and a fine Collection of well-grown FERNS and GREENHOUSE PLANTS, from an English Nursery. A large variety of various HARDY BULBS, HERBACEOUS PLANTS, 8000 African TUBEROSES, to be offered in cases as received, SPIRÆAS, and about 450 lots of HYACINTHS, TULIPS, CROCUS, and other BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above, by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, November 26, at half-past 11 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Friday Next.
LÆLIA ELEGANS.
ZYGOPETALUM GAUTHIERI.
CATTLEYA LEOPOLDI.
ODONTOGLOSSUM CRISPUM.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, and 213, Park Road, Clapham, S.W., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 28, at 12 o'Clock precisely, a fine and large importation of LÆLIA PURPURATA, from St. Catharina, received some little time ago in the best possible condition and health. All the plants have been specially selected for good shape, and look almost like cultivated plants. The consignment embraces specimens of gigantic proportions, with as many as 250 fine stout bulbs; and the plants have been specially lotted to suit large Buyers and the Trade. Also LÆLIA ELEGANS, extra fine plants in splendid condition. We are sorry to say this choice Orchid is getting very scarce in its native habitat, and our collector had the greatest difficulty to get the plants. Every one received is offered. The Sale will include a few extra large specimens of CATTLEYA INTERMEDIA, a handsome variety, easily cultivated, the flowers being always welcome when cut. CATTLEYA LEOPOLDI, fine and large plants; ZYGOPETALUM GAUTHIERI, on Fern-stems; ONCIDIUM MICROPOGON, and a choice consignment of ODONTOGLOSSUM CRISPUM, just received, the first this season, all the plants being in splendid condition.

On view morning of Sale, and Catalogues had.

Friday Next.
CATTLEYA WAROCQUEANA, R. A. Rolfe.
By order of M. M. Linden, of Brussels.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, November 28, 120 lots of CATTLEYA WAROCQUEANA. Two First-class Certificates were granted at the Meeting of the Royal Horticultural Society on October 14 last, to this grand Cattleya. The Silver Floral Medal was awarded for a group of C. Warocqueana, at the Meeting of the Royal Horticultural Society on October 28 last. The *Gardeners' Chronicle*, November 15 last, p. 560, states: "Among recent introductions, Cattleya Warocqueana is one of the most extraordinary, &c." All the plants offered are unflowered in splendid health and condition. A number of plants in flower or bud will be included as well as some fine and large specimens. Orchid lovers should avail themselves of this exceptional opportunity. It is well known that some grand and magnificent varieties have lately been flowered from our importation in England, as well as on the Continent.

For particulars see Catalogue, to be had on application to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

Friday Next.
CALANTHE ROSEA (hybrid).
SEEDLING CATTLEYAS.

MESSRS. PROTHEROE AND MORRIS will include in their ORCHID SALE, on FRIDAY NEXT, November 28:—

CALANTHE ROSEA (hybrid). The entire stock of this beautiful hybrid CALANTHE, raised at Burford Lodge, and believed to exist in the collection there only. The stock consists of seven or eight pots, the Vendor retaining only what he requires for his own collection. The plants are nearly all in flower, and the species is a fine and free grower.

SEEDLING CATTLEYAS.—These are another property, and are from the collection of a well-known Amateur. Four of the plants are CATTLEYA MOSSIÆ × C. LAWRENCEANA, and two plants LÆLIA PURPURATA × C. MOSSIÆ—the parentage being guaranteed.

On view morning of Sale, and Catalogues had.

Bedford Nurseries, Haverstock Hill, N.W.
Preliminary Notice of important Clearance Sale of GREENHOUSES, PLANTS, and General NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Wood, who is relinquishing the Business, to SELL by AUCTION, on the Premises, The Bedford Nurseries, Haverstock Hill, N.W., near Chalk Farm Station, on WEDNESDAY and THURSDAY, December 3 and 4, at 12 o'Clock each day, the whole of the GREENHOUSE PLANTS, comprising the contents of 13 Greenhouses, 200 Specimen CAMELLIAS and AZALEAS, grown specially for cut bloom, the majority being white, and nearly all in pots and tubs. Also about 2 acres of general NURSERY STOCK. Fuller particulars will appear next week.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67, and 68, Cheapside, E.C.

N.B.—The compact NURSERY, comprising about 3 acres of Land, 13 Greenhouses, Pits, Stabling, and large Show Conservatory, TO BE LET, on long Lease. Particulars of the Auctioneers.

Dutch Bulbs.—Dutch Bulbs.
SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots to suit all buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY, and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS, arriving weekly from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Wednesday Next.
Pyramid and Dwarf-trained FRUIT TREES, Standard and Dwarf ROSES, Ornamental SHRUBS and CONIFERS, BORDER PLANTS in variety, SPIRÆA JAPONICA, LILY OF THE VALLEY Crowns and Clumps; LILIUMS, in good variety; choice Collection of NARCISSUS, and many other BULBS and ROOTS.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 26, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Thursday Next.
IMMENSE IMPORTATIONS of LILIES from JAPAN.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 27, at half-past 12 o'Clock precisely, immense importations from Japan, received direct, in splendid condition, comprising 20,000 extra-fine Bulbs of LILIUM AURATUM, 2000 L. LONGIFLORUM, L. SPECIOSUM ALBUM and RUBRUM L. LEITCHLINI, L. KRAMERII, L. TIGRINUM, L. AURATUM MACRANTHUM, &c.; 5000 South African TUBEROSES and AMARYLLIS, Home-grown LILIES, GLADIOLI in good sorts, ANEMONES and RANUNCULUS, DAFFODILS and NARCISSUS SPIRÆAS, DIELYTRAS, 20,000 Roman HYACINTHS, Berlin LILY OF THE VALLEY Crowns, &c.

On view morning of Sale, and Catalogues had.

WANTED, Established SEED BUSINESS, with or without Small Nursery attached, in a good Market Town.
P. B. KENT, Elmbank, Darlington.

WANTED, TO RENT, Small NURSERY, in thriving Provincial Town. Chiefly Glass; local trade preferred
Rev. T. JAMES, 3, Beacontree Terrace, Mornington Road, Leytonstone.

WANTED, TO RENT, Small NURSERY, with several good Greenhouses, suitable for growing Plants, &c., for market; or would Work Glass for Gentleman by mutual agreement.—Address, H. J. S., Herbert Stores, Abbey Wood, Kent.

Seed, Implement, and Manure Trade.
VERY IMPORTANT.

FOR SALE, in Provincial Town, in West of Ireland, a Going Concern in above Trade. Small but complete Stock. Very Select Garden Seed Trade, and fine Turnover in Farm Seeds and Artificial Manures. Good premises, situate in principal street, with twenty-one years' Lease. Will transfer Stock at 20 per cent. under cost. Fine opening for young man with small capital. Immediate possession. Want of capital only reason for disposing.
For further particulars, apply to AURATUM, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE, NURSERYMAN and FLORIST'S Business. Six Greenhouses, Dwelling-house, &c. Seventeen years lease. Rent £52. Stock, fixtures, and goodwill. No reasonable offer refused.
R. M., Grove Road Nurs ery, Woodford, Essex.

FOR SALE, as a going concern, FLORIST'S and NURSERYMAN'S BUSINESS, on South Coast. Capital opportunity for an energetic man.
For further particulars, apply to F. C. GOODCHILD, Secretary, Nursery and Seed Trade Association, 25, Old Jewry, E.C.

FOR SALE, as a going concern, NURSERY and SEED BUSINESS (old-established).—For full particulars, apply, W. BENNETT, Accountant, Burton-on-Trent.

LAND for HORTICULTURISTS.
TO BE LET, on specially favourable long leases.
TO BE SOLD, on liberal system of deferred payments.
TO BE SOLD forthwith, 3-4ths price remaining at 4 per cent.
Excellent for soil, water, and railway.
Apply to Mr. F. J. CULLIS, F.G.S., Marling Park Estate, Hampton-on-Thames.

Landscape Gardening.

MR. ARTHUR M. KETTLEWELL, LANDSCAPE GARDENER, having great experience in all matters pertaining to the artistic arrangement or re-arrangement of Grounds, IS READY TO UNDERTAKE the Designing and Laying-out of Private or Public Gardens, Parks, Cemeteries, &c. Send for his Manual on the "Art of Landscape Gardening," excellently reviewed by nearly all the leading Gardening Papers, post-free, 7*d*.
Address, Titley House, Titley (R.S.O.), Herefordshire.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

NEW DESCRIPTIVE PRICED CATALOGUE

Post-free on application to

THE VINEYARD AND NURSERIES,
GARSTON, near LIVERPOOL.

ORCHIDS.

BRAZILIAN ORCHIDS supplied to the Trade in large or small quantities.

CATALOGUES and particulars on application.

A. H. GRIMSDITCH (Importer), 5, Clayton Square, Liverpool.

Sole Agent for CARLOS TRAVASSOS, Rio de Janeiro.

FOREST TREES, and COVERT PLANTS.
BEECH, extra strong, transplanted, 3 to 4 feet, and 4 to 5 feet.
HORNBEAM, strong for hedges, 3 to 4 feet, and 4 to 6 feet.
LAUREL, common bushy, 1½ to 2 feet, 2 to 3 feet, and 3 to 5 feet.
OAK, English, extra strong, 3 to 4 feet, and 4 to 5 feet.
PINE, Austrian, specimens, 3 to 4 feet, and 4 to 5 feet.
PRIVET, evergreen, bushy, 2 to 3 feet, 3 to 4 feet, and 4 to 5 feet.
THORN, Quick, extra strong, transplanted, 1½ to 2 feet, and 2 to 3 feet.
CHESTNUT, Horse, fine specimen Avenue trees, 10 to 16 feet.
Large quantities of the above, and other Nursery Stock, well-rooted and cheap, of which a priced CATALOGUE may be had, post free.
R. TUCKER, The Nurseries, Faringdon, Berks.

AGENCE GÉNÉRALE HORTICOLE BELGE
DE HERDT & STRECKER, Antwerp.
Cable Address:—"STRECKER, ANTWERP."

SPECIAL TRADE OFFER:—

ARECA LUTESCENS.

Splendid Seedlings for Potting—very large size.
Price, 10s. per 100.
(Samples sent free on application.)

CHARMING CHRISTMAS FLOWERS.—JAMES CARTER AND CO. have a magnificent stock of CHRISTMAS ROSES, now showing from ten to twenty grand buds, for immediate blooming. They are grown by one of the best cultivators in the kingdom, and are sure to give unqualified satisfaction. Finest clumps, price 2*s.* 6*d.* each, 24*s.* per dozen. Good clumps, price 1*s.* each, 10*s.* 6*d.* per dozen. Sent carriage free by rail or parcel post at our option.

CARTERS', Seedsmen by Royal Warrant to H.M. the Queen and H R.H. the Prince of Wales, 237 and 238, High Holborn, London, W.C.

SMALL SHRUBS.—Sweet Bays, 3-yrs, 4*s.* per 100; C. macrocarpa, 8 to 10 inch. 60*s.* per 1000; Erecta vividis, 6 to 8 inch, 50*s.* per 1000; do, 8 to 12 inch, 80*s.* per 1000; C. Allionii, 1 foot, 12*s.* per 100; Cotoneaster Simonsii, 1 foot, 40*s.* per 1000; Cedrus atlantica, 2-yrs., 6*s.* per 100; C. deodara, 1-yr., 7*s.* per 100; Escallonea macrantha, 9 to 12 inch, 10*s.* per 100; Pinus cembra, 3-yrs., 30*s.* per 1000; P. insignis, transplanted, 9 to 10 inch, 60*s.* per 1000; P. excelsa, 2-yrs., 4*s.* per 100; P. Nordmannia, 2-yrs., 4*s.* per 100; P. nobilis, 2-yrs., 6*s.* per 100; Oaks, evergreen, 2-yrs., 9 inch, 60*s.* per 1000; Oaks, scarlet, 2-yrs., 2*s.* per 100; Retinospera plumosa, 6 inch, 40*s.* per 1000; 2 years transplanted, 8 inch, 80*s.* per 1000; R. squarrosa, 6 inch, 40*s.* per 1000; 8-inch, 80*s.* per 1000; Rhododendron ponticum, 3-yrs., 25*s.* per 1000; 4 to 6 inch, 40*s.* per 1000; 6 to 9 inch, 60*s.* per 1000. Stocks, clean, 90*s.* per 1000; Thuia Lobbii, 10 inch, 45*s.* per 1000; 15 inch, 60*s.* per 1000. English Yew, 1-yr., 25*s.* per 1000; 6 to 8 inch, 80*s.* per 1000. Spanish Whin, 6 inch, 6*s.* per 100.

GARLIES MITCHELL, Nurseryman, Stranraer.

LARGE BUYERS (also Agents) WANTED for 100 to 200 KG. German Large-flowered, Summer Stock, GILLIFLOWER SEED, this year's crop. Most superior quality. Any desired quantity given.—Apply to B. 204, care of Haasenstein & Vogler, A-G., Hamburg.

Standard Trees! Standard Trees!
For Avenue and Street Planting.

JOHN PERKINS AND SON beg to offer fine
LIMES, 8 to 10, and 10 to 12 feet.
SYCAMORE, 8 to 10, and 10 to 12 feet.
BIRCH, 8 to 10, and 10 to 12 feet.

The above are stout, well-grown Trees, with straight stems, and good roots. An inspection invited.

The Old-established Nursery and Seed Business, 52, Market Square, Northampton. Nurseries—Billing Road.
Telegraphic address—"QUICK, Northampton."

ORCHIDS a SPECIALTY.—A rare chance to those forming collections. Having bought a private collection of 3000 plants, beg to offer at about half their value. Write for List. 500 Odontoglossum Alexandræ in thumbs, 12*s.* per doz.; 650 ditto, in large 60's, strong growths, 30*s.* per doz.; 250 Masdevallias, 30*s.* per dozen, including M. Harryanum, M. Wagneri, M. amabilis, M. triangularis, and M. Lindeni; Lycaste Skinneri, fine plants, 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* Six distinct Cattleyas for 21*s.*, including C. Mossiæ, C. Trianæ, C. gigas, and C. Gaskelliana. Our specialty—an amateur's collection of Orchids, 12 distinct plants, 20*s.*, 30*s.*, 40*s.*, and 50*s.* Specimen, carriage paid, 2*s.*, 3*s.*, 4*s.*, and 5*s.* Cash with order.
W. L. LEWIS, Chase-side, Southgate, London, N.

The Best Present for a Gardener.
VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5*s.*, post-free 5*s.* 6*d.*
A. F. BARRON, Royal Horticultural Society, Chiswick.

SCARLET CARNATION "Al. Alegatière."—A most handsome free-flowering Tree Carnation, of sturdy compact habit, and bearing in great profusion well-formed brilliant scarlet flowers of great substance.

FINE STRONG PLANTS, covered with buds, in different stages, now ready to pot up for Winter-flowering in Greenhouse. Special cheap offer. 50*s.* per 100, 7*s.* 6*d.* per dozen.
Samples may be seen at 12, King Street.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

To Nurserymen, Builders, Local Boards, Vestries, and others who intend planting Trees and Shrubs this season.

ROBERT NEAL, The Nurseries, Trinity Road, Wandsworth, S.W., begs to offer an extensive stock of FOREST and ORNAMENTAL TREES, SHRUBS, ROSES, GRAPE VINES, FRUIT TREES, CLIMBING PLANTS, &c., which being grown in the neighbourhood of London, are especially suitable for town planting. Also a large stock of extra fine SEAKALE and RHUBARB for forcing, sample and price of Seakale sent by post if desired; descriptive CATALOGUE free.

QUICK, for Hedges, strong transplanted, 15*s.*, 20*s.*, 25*s.*, and 30*s.* per 1000.
ELMS, English, fine trees for avenues, or singly in parks, 2*s.* 6*d.* each.
EVERGREEN HEDGES.—The best are formed of American Arbor-vitæ, 3 to 4 feet, 12*s.* per dozen; Thuia Lobbii, 12*s.* per dozen; English Yew, 2 to 2½ feet, 9*s.* per dozen.
SEASIDE EVERGREENS.—Austrian Pine, 3 to 3½ feet, 9*s.* per dozen; Arbutus, nice plants, 2½ feet, 12*s.* per doz.; Bays, 12*s.* and 18*s.* per dozen; Euonymus, best green, 4*s.* and 6*s.* per dozen; Evergreen Oaks, in pots, 3 feet, 18*s.* per doz.; Escallonia macrantha, in pots, 9*s.* per doz.
GARAWAY AND CO., Durdham Down Nurseries, Clifton, Bristol.

Rhododendrons cheaper than ever.
Over 30 Acres for Sale.

ISAAC MATTHEWS AND SON have to offer over 100,000 White, 100,000 Scarlet, in variety. Plants fit for immediate forcing. The above are all freely set with bloom buds, and are in the most healthy condition. We also have a very extensive stock of HYBRID and PONTACOMS from Seed, and can be had in all sizes, varying from 6 inches up to 4 feet, in any quantity, HOLLIES, AUCUBAS, YEWS, CONIFERS, THORN QUICK, Scotch SPRUCE, LARCH, ELM, ASH, ALDER, BIRCH, and all other General Nursery Stock in abundance. For Price LIST, &c., apply to—
ISAAC MATTHEWS AND SON, The Nurseries, Milton, Stoke-on-Trent. Our Nursery is very extensive, and the Stock good.





THE VERY BEST **BULBS** AT LOWEST RATES.

LARGE & VARIED COLLECTIONS OF
HYACINTHS, TULIPS, CROCUSES, SNOWDROPS, NARCISSI, LILLIES, &c.
All thoroughly ripened and in excellent condition for planting.

Illustrated Descriptive Catalogue, No. 384.
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DICKSONS Bulb Growers **CHESTER**

CANT'S
NEW ROSE
CATALOGUE
The best and most reliable Descriptive List ever published.
Post-free on application to BENJAMIN R. CANT, COLCHESTER.

THE GARDENERS' ORPHAN FUND.

NOTICE TO SUBSCRIBERS.

A SPECIAL GENERAL MEETING of the Subscribers to the above Fund, will be held at the "Cannon Street Hotel," on TUESDAY, December 9th prox., at 6 o'Clock P.M., to transact the following business:—

(1) To change the date of the commencement of the financial year from July 1st to January 1st; (2) to change the date of the Annual Meeting from the month of July to February; and (3) to place on the Fund the following children—the unsuccessful candidates at the last election—as a Memorial to the late Mr. George Deal, Chairman of the Executive Committee:

ALFRED HENRY BUDD	MARY GRIEVE
WINIFRED JONES	EVAN EVANS KINCH
SYDNEY ALFRED OFFER	FRANCIS THOS. PRAGNELL
ARTHUR HENRY ROWLAND.	

Resolutions will be proposed for adoption embodying the following alterations in the Rules:—
In Rule III., to substitute "31st December" for "30th of June."
In Rule IX., fourth line, to substitute "December" for "June."
In Rule X., second line, to substitute "February" for "July."

(By order of the Executive Committee),
A. F. BARRON, Hon. Secretary.
Nov. 18, 1890.

ANTHONY WATERER invites an inspection from intending Planters to the following well-grown TREES, having stout, straight stems, fine heads, and splendid roots, all having been transplanted within two years:—
ACACIA BESSONIANA, 12 to 14 feet.
ACER DASYCARPUM, 12 to 20 feet.
,, ,, WIERII LACINIATA, 10 to 14 feet.
,, NEGUNDO VARIEGATA, Standards, 8 to 10 feet.
,, REITENBACHII, 12 to 14 feet.
,, SCHWEDLERII, 12 to 16 feet.
,, WORLEYII, 12 to 14 feet.
ASH, Mountain, 12 to 14 feet.
BEECH, Common, 10 to 12 feet.
,, Purple, Pyramids, and Standards, 10 to 20 feet.
BIRCH, Silver, 12 to 14 feet.
CERASUS SEROTINA, 12 to 14 feet.
CHESTNUTS, Horse, 14 to 16 feet.
,, ,, Double White, 10 to 16 feet.
,, ,, Scarlet, 12 to 18 feet.
,, Spanish, 12 feet.
ELMS, English, 10 to 12 feet.
,, Guernsey, 10 to 12 feet.
LIMES, 12 to 16, and 20 feet.
,, EUCHLORA, 12 to 14 feet.
,, Silver-leaved, 10 to 14 feet.
LIQUIDAMBER, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 10 to 14 feet.
,, Scarlet American, 12 to 14 feet.
PLANES, 12 to 16 feet.
POPLAR CANADENSIS NOVA (the true variety), 12 to [16 feet.
SYCAMORE, Common, 14 to 16 feet.
,, Purple, 14 to 16 feet.
THORNS, Double Scarlet, 8 to 10 feet.
,, White, 8 to 10 feet.
TULIP TREES, 10 feet.
WALNUTS, Common, 10 to 12 feet.

WEEPING TREES.

BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
,, Weeping, Purple, Pyramids, and Standards, 7 to 12 feet
BIRCH, Young's Weeping, Pyramids, and Standards, 8 to
,, Cut-leaved Weeping, 10 to 12 feet. [14 feet.
ELMS, Weeping, Pyramids, and Standards, 7 to 14 feet.
LARCH, Weeping, Pyramids, 6 to 10 feet.
POPLAR, Weeping, Pyramids, and Standards, 10 to 12 feet.
Knap Hill Nursery, Woking, Surrey.

HARDY AZALEAS.—A selection of the most beautiful, many of which were raised in this Nursery, well furnished plants, covered with buds, from 1½ to 3 feet high.

AZALEA MOLLIS.—Very fine plants up to 2½ feet, well budded.

AZALEA OCCIDENTALIS × MOLLIS.—White, with lemon blotch—very beautiful, offered for the first time.
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

BOX EDGING.—Six hundred yards for sale in prime condition. Write for particulars to W. STACEY, Stanmore, Middlesex.

SHRUBS and CONIFERÆ.—American Arbor-vitæ, 2½ feet, 20*s.* per 100; Berberis aquifolia, 1½ foot, 12*s.* per 100; B. Jamesonii, 20*s.* per 100; Box Trees, 1½ to 2 feet, 16*s.* per 100; Cotoneaster Simonsii, 2 feet, 12*s.* per 100; Escallonia macrantha, pots, fine, 30*s.* per 100; Pampas Grass, strong, 6*s.* per dozen; Hypericum calycinum, strong, 12*s.* per 100; Laurels, common, 2 feet, 10*s.* per 100, 3 to 4 feet, 16*s.* per 100; Caucasnum, 4 feet, 24*s.* per 100; Colchie, 1½ to 2 feet, 12*s.* per 100, 4 feet, 24*s.* per 100; L. rotundifolia, 2 feet, 14*s.* per 100; Lilies, white and purple, 4*s.* per dozen; English Yews, 1½ to 2 feet, 24*s.* per 100, 2 to 2½ feet, 30*s.* per 100; Araucaria imbricata, 3 to 3½ feet, 36*s.* per dozen, 4 feet, 48*s.* per dozen; Cupressus Lawsonii, 2½ feet, 25*s.* per 100, 3 to 4 feet, fine, 35*s.* per 100; C. striata, 2 to 2½ feet, 30*s.* per 100, 3 to 3½ feet, 50*s.* per 100, 6 to 7 feet, 18*s.* per dozen; C. erecta, 2 to 2½ feet, 30*s.* per 100, 3 to 3½ feet, 50*s.* per 100; extra, Picea nobilis, 9 to 12 inches, 30*s.* per 100, 2 to 3 feet 2*s.* to 3*s.* each; P. Nordmannia, 2 to 2½ feet, 60*s.* per 100, 3 feet, 12*s.* per dozen; Retinospera plumosa, 1½ to 2 feet, 25*s.* per 100, 2½ feet, 35*s.* per 100, 4 feet, 60*s.* per 100; R. squarrosa, 2½ feet, 35*s.* per 100, 4 feet, 12*s.* per dozen; Thuia Lobbii, 3 feet, 30*s.* per 100, 4 to 5 feet, 50*s.* per 100, 6 to 7 feet, 75*s.* per 100; Thuiopsis dolabrata, 1½ to 2 feet, 30*s.* per 100, 2½ to 3 feet, 24*s.* per dozen, 4 feet, 36*s.* per dozen, extra.
GARLIES MITCHELL, Nurseryman, Stranraer.

Gentlemen.
MY DWARF ROSES are the finest Plants I have ever grown. Many kinds are bushes 3 to 6 feet high.
CHARLES NOBLE, Bagshot.

NARCISSUS, Double White, price £1 per bushel; sample 50, post-free, for 2s. Cash with order.
J. J. CLARK, Goldstone Farm, Brighton.

For Sale.—Palms!—Palms!

WICETON has still a most extensive stock of all the leading varieties suitable for Winter Gardens, House Decorations, &c., and many thousands fit for Table Work. Prices on application.
Putney Park Lane, S.W.; and Stands 129 and 130, Covent Garden, W.C.

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-yr. old flowering Crowns for forcing, and 2 and 1-yr. old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.
T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

50,000 ROSES—ROSES—ROSES.—Best and Cheapest in the Trade. Strong Dwarfs, 30s. per 100; H.P.'s, in all the leading varieties. Sample dozen, 6s. Cash with order.
CATALOGUE free on application.
C. H. GORRINGE, Roselands Nursery, Eastbourne.

PYRACANTHA LALANDI (Burning Bush), fine plants, 3 to 4 feet, in pots, 12s. per doz.
Irish IVIES, in pots, 5 to 6 feet, 12s. per doz.; 6 to 8 feet, 18s.; 8 to 10 feet, 24s.; 10 to 12 feet, 36s. per doz.
RHODODENDRONS, beautifully set with buds, named hybrids, 18s. and 24s. per doz.; seedlings, 6s. and 9s. per doz.
Descriptive Price LISTS of Plants, Bulbs, Seeds, and all Garden Requisites, free on application.
W. FROMOW AND SONS, Sutton Court Nurseries and Seed Establishment, Chiswick, London, W.

Quick.

W. W. JOHNSON AND SON, Boston, Lincolnshire, offer quarter of a million three years transplanted QUICK, and 50,000 two and three years seedling QUICK, all clean and well grown, with excellent roots.
Samples of 100 charged at 1000 price.

For Sale.—Extra-sized bearing Peach Trees, from Walls.

WICETON has a few very fine well-balanced, fibrously-rooted Trees to offer, reasonable, viz., Royal George, Half-Standards and Dwarf-trained; Noblesse, Alexander Noblesse, Hale's Early, and other varieties, from 6 to 15 feet through. Prices on application.
Putney Park Lane, S.W.

CELERY, McHATTIE'S PRIZETAKER. One of the finest ever introduced, has stood the test for the last twenty years, and been awarded prizes at every Show at which it has been exhibited, and can confidently offer it as unexcelled for solidity, crispness, and flavour.
Wholesale of Messrs. HURST & SON; Retail, 1s. per Packet.
HURST AND SON, Houndsditch, London.

FOR SALE, LARCH, 2 to 3 feet; BEECH, 1½ to 2 feet; OAKS, 1½ to 2 feet; SPRUCE FIR, quartered, fine and bushy, 2 to 3 feet, and 3 to 4 feet; Thorn QUICKS, very strong; Large SYCAMORE, splendid stuff, 6 to 7, and 7 to 8 feet. The above are healthy, and well grown, with splendid roots, and will be sold cheap. Samples and prices upon application to
THOS. HUNTER, Nurseryman, Barnard Castle.

FOREST TREES, &c.—Alder, 2 feet, 16s. per 1000. Ash, 1½ to 2 feet, 14s. per 1000; 2 to 3 feet, 17s. per 1000; 3 to 4 feet, 22s. per 1000. Beech, 2 feet, 16s. per 1000; 2½ to 3 feet, 24s. per 1000; 4 to 5 feet, 4s. per 100. Spanish Chestnuts, 1½ to 2 feet, 16s. per 1000; 3 to 4 feet, 22s. per 1000; 4 to 5 feet, 30s. per 1000. Larch, 1½ to 2 feet, 17s. per 1000; 2 to 2½ feet, 24s. per 1000; 3 to 3½ feet, 28s. per 1000. Spruce Fir, 1 to 1½ feet, 12s. per 1000; 1½ to 2 feet, 14s. per 1000; 2 to 2½ feet, 16s. Scotch Fir, 2 years, 2 years transplanted, 16s. per 1000. Silver Fir, 1 to 1½ feet, 17s. per 1000. Hazels, 2 feet, 20s. per 1000. Hornbeam, 2 feet, 16s. per 1000. Oaks, 2 feet, fine, 16s. per 1000; 2½ to 3 feet, 20s. per 1000. Sycamore, 1 to 2 feet, 12s. per 1000; 2 to 2½ feet, 16s. per 1000; 4 to 5 feet, 30s. per 1000. Thorns, 1 to 1½ feet, 9s. per 1000; 1½ to 2 feet, 11s. per 1000; 2 to 2½ feet, 13s. per 1000; 2 to 3 feet, 15s. per 1000; 3 to 4 feet, 18s. per 1000.
GARLIES MITCHELL, Nurseryman, Stranraer.

Evergreen Hedges.—Evergreen Hedges.

JOHN PERKINS AND SON offer:—
ENGLISH YEWS, 3 to 4 feet, 100s. per 100.
THUJA LOBBII, 3 to 4 feet, 70s. per 100.
Fine bushy stuff, all recently transplanted, good fibrous roots.
The Old Established Nursery and Seed Business, 52, Market Square, Northampton.
Telegraphic Address—"QUICK, Northampton."

To Gentlemen Planting.

SPECIAL OFFER of TREES for Immediate Effect. All prepared for removal. Each plant a Specimen. Root matted, and put free on rail for Cash:—
ABIES DOUGLASSI, 10 to 12 feet, 7s. 6d. each.
CRYPTOMERIA ELEGANS, 5 to 6 feet, 2s. 6d. each.
CUPRESSUS LAWSONIANA, 8 to 10 ft., 5s; 10 to 12 ft., 7s. 6d.
PICEA LANDOCARPA, 5 to 6 feet, 7s. 6d each.
,, NORDMANNIANA, 6 to 8 ft., 5s.; 8 to 12 ft., 7s. 6d. each.
THUIA LOBBI, 8 to 10 feet, 3s. 6d.; 10 to 14 feet, 7s. 6d. each.
,, VERVAEANA, 5 to 6 feet, 5s. each.
,, ELLWANGERIANA, 4 to 6 feet, 3s. 6d. each.
THUIOPSIS BOREALIS, 9 to 12 feet, 7s 6d. each.
WELLINGTONIA, 6 to 8 feet, 7s. 6d. each.
YEWS, 5 to 7 feet, 5 feet through, 5s. each.
YEWS, untrimmed, for hedges, 5 to 6 feet, 3s. 6d. each.
CEDRUS DEODARA, 6 to 8 feet, 5s.; 8 to 10 feet, 7s. 6d. each.
LAURUSTINUS, 3 to 4 feet, bushy, 18s. per dozen.
ALSO
Extra strong HAWTHORN QUICK, 3 to 5 feet, 35s. per 1000.
CHARLES WHITING, White Cross and Cemetery Nursery, Hereford.

HARDILY-GROWN FRUIT TREES

TRUE TO NAME: LARGEST STOCK IN THE KINGDOM, Including all the most Popular and Profitable Kinds in Cultivation.

Descriptive Priced List Free on application.

DICKSONS The Nurseries, CHESTER (Limited).



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.
None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.
WM. CUTBUSH AND SON, Nurserymen and Seed Merchants, Highgate Nurseries, N.

LILIUM HARRISII.

SPECIAL OFFER.

Beautiful large, pure white, trumpet shaped flowers; deliciously fragrant. The finest variety for pot culture or early forcing. Potted now, may be had well in bloom at Easter.
FINE STRONG BULBS, fresh imported, 6s. per dozen, 40s. per 100.
EXTRA FINE BULBS, splendid value, 9s. per dozen, 63s. per 100.
Carriage Free for Cheque or Post-office Order.
DANIELS BROS.,
TOWN CLOSE NURSERIES, NORWICH.

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THE
Gardeners' Chronicle.

SATURDAY, NOVEMBER 22, 1890.

THE CHILE PINE.
(ARAUCARIA IMBRICATA.)

[See Supplementary Sheet.]

THE history, recent and geological, of this tree, has been so often alluded to in these columns, and its botanical characteristics have been so frequently detailed, that it is not necessary to revert to these matters at any length. We avail ourselves, however, of the opportunity afforded us by two of our correspondents to publish an ink-photograph, showing a fine specimen tree, and also a fertile cone one-third of the natural size. The tree represented is described in a letter from a correspondent signing himself "J. A.":—

"Some correspondence has recently been going on in the columns of the *Gardeners' Chronicle, re* the fruiting of Araucaria imbricata. From the number of instances mentioned, it appears that it is by no means uncommon for this tree to produce and ripen its seeds in the South of England, but as yet no one has recorded an instance of its fruiting in Scotland.

"The accompanying photograph represents one of three large Araucarias in the gardens of W. J. Hay, Esq., of Duns Castle, Berwickshire. This tree, which is considered to be one of the finest in Britain, has a height of 43 feet; the girth of the trunk at 1 foot from the ground is 10 feet 8 inches, and the lower branches are over 18 feet in length. It is a female plant, but had not fruited until a year ago, when it bore one cone, from which several young plants have been raised. At the present time it carries thirty-two large cones. The age of the tree is supposed to be about forty-three years. The other two trees are not much inferior in size; they are males, and produce catkins freely."

As will be seen, the tree in question is symmetrically grown, and very handsome, but in point of dimensions it is considerably less than the tree at Dropmore, which in 1886 was recorded to have attained a height of 63 feet.

Mr. Fraser Sim, of Oban, sent us some time since the record of measurements of two Scottish

specimens, one at Keir, the other in the island of Mull:—

	Keir.	Duart.
	Feet ins.	Feet ins.
Height	44 3	32 0
Girth, 1 foot from ground...	5 4½	6 9
,, 3 feet from ground...	4 8	5 10
,, 6 feet from ground...	4 4	5 6

The Duart specimen is a female, and about ten years ago the leader became sluggish, and seemed to make no progress for five or six years, but within the last five or six years it has begun to shoot upwards again. Is there a finer Araucaria in Scotland than this specimen at Duart?

Of south country specimens the tree at Kew is now a venerable relic, gradually dying away. It is a small tree, and we remember to have seen cones upon it in 1851 or 1852. This tree was a seedling brought home by Menzies in 1796. The story goes that Menzies was dining with some official in Chile, when seeds were brought in at the dessert. Some of these were taken by the botanist and sown. They germinated on the way home, and of these seedlings the Kew plant is a representative. For some time it was grown under glass and was not planted out till about 1806. Its growth was from the first very slow, as after having been planted about forty years it was no more than twelve feet high in 1836.

Mr. Frank Willan has also sent us a photograph and particulars of a fine tree growing in his park at Bitterne, Hants, and concerning which he writes:—

"I send you a photograph of an Araucaria in the grounds here. Its dimensions when measured on August 1, were:—height, 45 feet 6 inches; girth at ground, 8 feet 8 inches; girth 3 feet above ground, 6 feet 3 inches; circumference outside branches, 104 feet. The height is correct, having been measured with a rod. The tree is about 40 years old, or perhaps a little more, and is growing very fast. There is not a bad place in it, and the branches are perfect all round. The photograph does not represent the good side of the tree only, indeed it is equally good from every aspect. There may be some few trees which exceed this in height, but I very much doubt if there is a more beautiful specimen in England.

"We have another tree here which is nearly as high but not so well furnished. It bears a crop of large cones every four years, or thereabout, and when (as this year) there is a crop of cones, the leader dies down for about 18 inches. It eventually falls off, and a new leader takes its place, growing however quite straight. This leader will grow perhaps about 2 feet before another crop of cones appears, and then die off again, so that the progress of the tree is very slow."

In the same county (Basing Park Gardens), Mr. W. Smythe recorded not long since the production of cones and ripe seed on the trees under his care. The trees, of which there are 250, have been planted about forty years, and average 25 to 30 feet in height.

In Mitchell's nursery at Piltdown, near Uckfield, is a specimen which, several years since, had attained a height of 50 feet, and of which we trust Messrs. Mitchell will favour us with more recent particulars.

The representation of the female cone is taken from a photograph obligingly communicated to us by Mr. Harcourt Powell. Unfortunately the limits of our space only enable us to show the cone reduced by two-thirds.

The male cones or catkins are borne on separate trees from the female, and are cylindric or conical in shape, yellow in colour, and made up of densely packed anther-scales, the tips of which are sharply pointed and recurved. When, as often happens, male and female trees occur in the same plantation, fertile seeds result from which young plants may be reared, which are said to be hardier than plants grown from imported seed. The cones take nearly two years to ripen. The seeds may be sown in boxes in an unheated propagating pit, and planted out after eighteen months or two years.

Occasionally both male and female catkins occur on the same tree, as happened at Bicton some years since. We repeat our illustration of this specimen (see p. 593) as it illustrates the form of the two kinds of cone in the young state.

We believe the timber has been utilised at Tortworth, and our readers would be under an obligation to Earl Ducie, or his gardener, for any particulars as to its value they may be good enough to furnish. For further particulars as to the history and leaf-structure of this tree, we may refer to an article in our columns, June 23, 1888, p. 774.

New or Noteworthy Plants.

SOPHRO-CATTLEYA × CALYPSO, *Rolfe, n. hyb.**

It was a lucky hit of Mr. Seden to cross Sophronitis grandiflora with the pollen of Cattleya intermedia, quite apart from any question of botanical interest, for it led to the production of a very distinct garden Orchid of exceptional beauty, in the person of Sophro-Cattleya × Batemaniana. Such a success was sure to be followed by other attempts in the same direction. We have now another success to record, and this time Cattleya Loddigesii var. Harrisonæ has been utilised as the pollen parent. Messrs. James Veitch & Sons have now sent the first flower produced to Kew, together with a brief description of the plant, from which this account has been prepared. The flower measures 3¾ inches from tip to tip of the petals, which latter, as well as the sepals, approach those of the mother plant in shape, while the colour is of a uniform brilliant rose-purple. The lip, on the contrary, strongly approaches that of the pollen parent in shape, having ample rounded side lobes and a broad front lobe. The colours are very pleasing, and form an effective contrast with the bright sepals and petals. The disc is light yellow, passing into pale pink on the margins of the side-lobes, and into deep yellow on the basal half of the front-lobe, while the apical half is of a crimson-purple shade. One can hardly compare it at present with its brilliant ally, S. × Batemaniana, because the latter is now fully developed; we may note, however, that our novelty has a larger flower, and much broader sepals, petals, and lip, the last-named organ especially differing widely in character. It is also a taller plant, but whether equally floriferous remains to be proved. The two are more distinct than would *a priori* be expected. In any case, the novelty promises to be a valuable acquisition. *R. A. Rolfe.*

Cattleya granulosa *var.* Buyssoniana, *n. var.*

For all the purposes of the cultivator, the name Buyssoniana will quite clearly indicate the variety of the Cattleya, and happy should he be when he gets it. But we also owe a duty to science, and in order to place the identification of the plant beyond doubt, its specific name should be chronicled, or at least that of its nearest affinity. Fortunately for the gardener, but unfortunately for the botanist, the specific variation in most of our showiest plants is so wide that the specific name indicates a very diversified group rather than the name of a plant which shows no variations; and hence, in their discretion, botanists have at times accorded specific distinction to plants which a better acquaintance with proves to be only varieties of species already well known. Such a departure, perhaps, is Cattleya Schofieldiana, Rchb. f., which if the original plant was distinct, is now represented by C. granulosa pure and simple. C. Buyssoniana (fig. 116, p. 589) seems to me in form to differ from either C. granulosa or the plant called C. Schofieldiana in its oblong-ovate petals being of an uniform outline, and also in not possessing the narrower base; in the equal width of its sepals and petals, and in their having greater substance than either of the allied species we have mentioned. Nevertheless, the deeply-cut acute side-lobes of the labellum, the long and narrow isthmus to which the front lobe is attached, as well as the colouring of that feature of the flower (rose with some yellowish markings up the middle of the lip, obscurely displayed), speaks conclusively of its close affinity. Column whitish on the upper surface, and stained with purple beneath. The flowers are 5 inches wide, measured each way; the sepals and petals 1 inch broad, of an uniform ivory-white, and not exhibiting any trace of colour, which constitutes a most remarkable feature. It is the nearest approach to an albino in the section to which it belongs, and undoubtedly a grand novelty. The spike which bore the flowers shown in our illustration (fig. 116), was sent by its introducer, M. Linden, *l'Horticulture Internationale*, Parc Leopold, Brussels. *J. O'Brien.*

* *Sophro-Cattleya Calypso*, n. hyb.—Pseudobulbs 6 to 7 inches long, ½ inch thick, two-leaved, sheathed nearly to the glossy apex. Leaves 4 to 6 inches long, 1½ inch broad. Flowers from matured growth, 3¾ inches across from tip to tip of the petals. Sepals lanceolate-oblong, subacute, deep rose-purple. Petals obovate, obtuse, 1¼ inch broad, similar in colour. Lip three-lobed; front-lobe short and broad, emarginate, undulate, basal half bright yellow, apical half crimson-purple; side-lobes ample, rounded, light yellow, the nerves passing into pale pink along the sides, a little darker outside; disc bright yellow, with about four shallow keels below, and about eight more obscure ones above. Column short and broad, white, faintly suffused with pink behind, and with yellow in front. Derived from Sophronitis grandiflora ♀, and Cattleya Loddigesii var. Harrisoniæ ♂.

The Effects of Coloured Light on Assimilation.

At the last meeting of the Linnean Society, Mr. Henslow gave an epitome of his experiments of growing plants under red, yellow, blue, and clear glasses, as well as in the open. They were made with Mustard grown from seed for three weeks—*i.e.*, but little beyond the germinating stage; with Virginian Stock for ten weeks, until they were in full blossom in the open; and with Lettuces during one month, from the young to an adult vegetative condition. He ascertained the entire weights of the several plants when first lifted; then, after being thoroughly dried, the total amount of dry substance; this being the best gauge of the assimilative powers. In the two latter cases a marked superiority occurred under yellow and blue, to the results obtained under green and red, though green was not quite so injurious for germinating Mustard. Under clear glass, in all cases, plants were less favourably situated than in the open, which was always the best condition of all. When, however, the percentages were calculated, different results were obtained from those of weights. The following tables (reduced) will illustrate the results, and are for Mustard and Virginian Stock. Weights are in grammes (decimals omitted):—

Mustard.

	Mean Temperature.	Total Weight.	Total Weight of Dry Substance.	Percentage of Dry Substance.
Red	62°	42	2	5
Yellow	63°	49	4	9
Green	54°	38	3	8
Blue	56°	34	3	8
Clear	60°	85	7	8½
Open	56°	93	8	9

Virginian Stock.

	Mean Temperature.	Total Weight.	Total Weight of Dry Substance.	Percentage of Dry Substance.
Red	64°	21	1	7
Yellow	71°	32	2	7
Green	62°	13	½	6
Blue	63°	29	2	7
Clear	65°	117	11	9
Open	61°	279	19	7

An analogous table was given for the Lettuces. It will be readily seen that green glass is more injurious for Virginian Stock, which grew for a longer period than Mustard. It was equally injurious for Lettuces. In both cases the plants actually contained less dry substance at the end of the period than at first! Mr. Baker remarked, that having

tried green glass for the ferneries at Kew, they had to discontinue its use. Yellow and blue are, therefore, decidedly the least injurious of glasses, when tested by the total amount of dry substance obtained, such representing the assimilative energy; but when the percentages are taken, which represent the net results, or what is left between the gains by assimilation and the losses by respiration, it is seen from these tables that there are much closer agreements than between the total amounts. It will be noticed that Virginian Stock has a lower percentage (7) than might be expected. The plants, however, were in full blossom, and as respiration rises to a maximum at this period of growth, the loss of dry substance would be proportionally greater.

Mr. Henslow then endeavoured to explain the results. Thus red and yellow appeared to encourage a greater amount of heat, as the heat-rays are located at the red end of the spectrum. This induces a greater degree of moisture in the air. Consequently, under red, yellow, and, to a less extent, under green, the Lettuces were much "drawn;" as a damp atmosphere causes, in some respects, a similar effect to total darkness, though there was no "blanching" in any case, all the plants being equally green. The reason why blue glass caused a second maximum besides yellow, is accounted for by the fact, that it transmits all the blue end of the spectrum, while the red and yellow glasses transmit the whole of the red end. Now, in these two directions lie the largest "absorption bands" of chlorophyll, the light absorbed by that substance being regarded as the instrument which does the work of assimilation and transpiration; hence is the greater amount of dry substance under red, yellow, and blue accounted for, and that green should be so injurious is equally clear, for the fact that green glass shuts off both ends, and transmits green light only, which includes the weakest of the absorption bands.

In all cases plants grown under clear glass, though it transmits all rays, are at a disadvantage, presumably in consequence of increased heat, which intensifies respiration, and so reduces the amount of dry substance.

The conclusion arrived at is the necessity of observing, not only the total weights of the plants and of the dry substances, but the percentages of the latter, and of water contained in them as well. Secondly, that plants grown in any way, except in the open, are at a disadvantage in various ways. Lastly, another fact brought out is, that the assimilative power increases with age, for while Lettuces contained 10 per cent. of dry substance when young, it rose to 12½ per cent. in the adult stage.

The above are some of the more important conclusions arrived at, though much remains to be done to solve all the problems of this most complicated phenomenon of plant life.

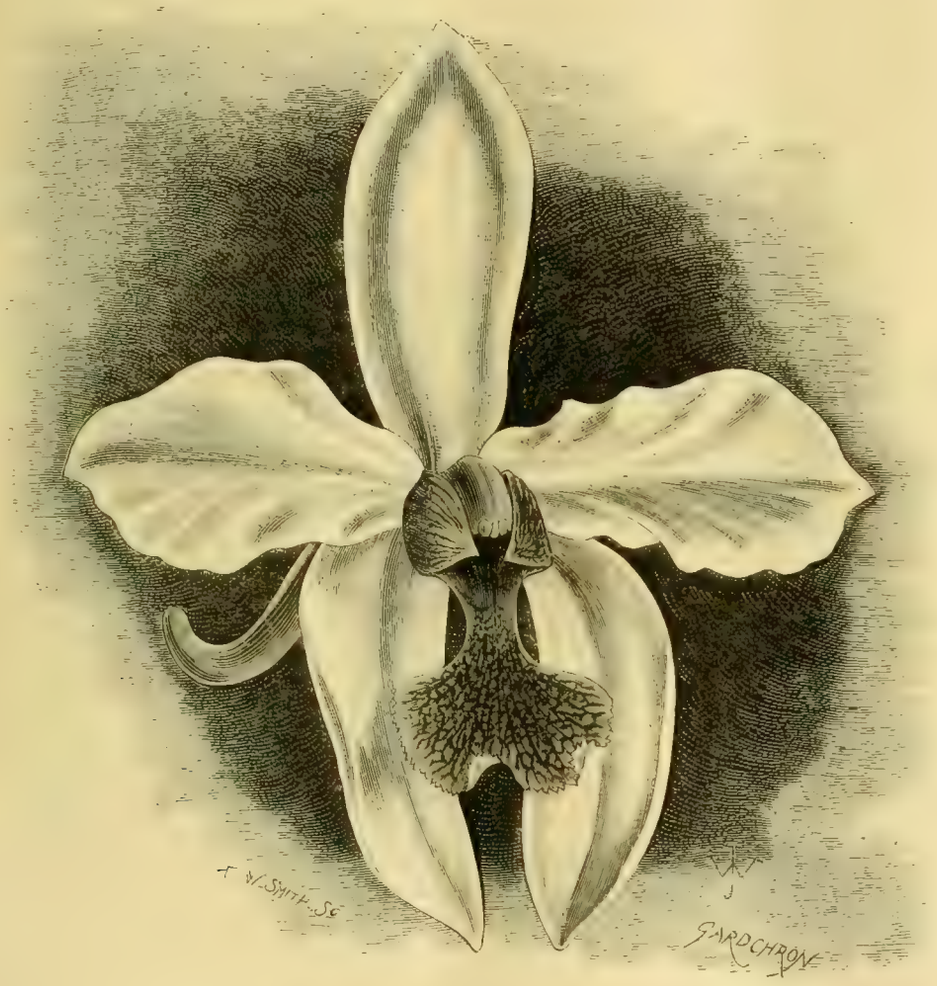


Fig. 116.—Cattleya Buyssoniana; flower ivory-white, lip crimson. (see p. 588.)

Gishurstine.—Winter is on us, with its snow and rain, and saturated soil, its colds and rheumatism for the workers in garden and farm; but Messrs. Price & Co. are at hand also with their capital dubbing to help us to keep our boots watertight and our feet dry during winter's continuance, and that is a boon of much value.

Roses.

A Paradise of Dwarf Teas.

Such were the glowing words in which Mr. Alexander Hill Gray described the garden of my friend the Rev. F. R. Burnside, and as I have lately had the pleasure of visiting it, I think a short notice of the garden from which the Roses have come, that have won for the owner such victories, and carried him triumphant over all competition.

The Vicarage of Much Birch, or Birch, as it is now generally called, is situated about 6 miles from Hereford, on the brow of a hill, and overlooking a very lovely valley, filled with that beautiful foliage for which these western counties are so famous; in front, at some distance, are the Welsh mountains of Brecon, which I had held to be a myth, for in my former visit I had not seen them; however, this time I saw something, in the dim distance, that looked like mountains, but there was so thick a haze that no details of them could be seen. The house stands back from the road, and partly down the sloping bank; it is not large, but well suited to the living, if living it can be called, for, like Goldsmith's parson, Mr. B. is passing rich on £40 a-year, or, at any rate on a sum which is by no means equal to that in the poet's time. The soil of the garden is a good friable loam, not the rich unctuous loam one meets with in Hertfordshire and other Rose-growing localities, and therefore it is not so well suited for the growth of hybrid Perpetuals; and as Mr. Burnside is a Tea fancier, he has set himself out for their growth, and how well he has succeeded the prize-lists of various societies bear witness.

The principal space allotted to the Teas is a sloping bank facing about south-west, well sheltered from the north by a shrubbery and hedges. I need not say there is no attempt to make a pretty garden or a rosery like that figured in the *Gardeners' Chronicle* for October 25 last, but to have Roses that will do good and useful work at exhibitions; hence the beds are made of the usual width, about 4 feet, and I should suppose about 30 feet long. Running up one side is a double fence of Maréchal Niel; the plants are doing well, and I have no doubt they will flower well, although, as I have often said, the Maréchal is not to my mind, suited for outdoor work; the drooping bloom, showing the tarnished outside petals, is not, to my mind, effective; however, they will be well done here, and will afford some good blooms. By-the-by, I had a letter from an unknown correspondent the other day, asking whether the Maréchal could be exhibited amongst Teas. It was strange, after so many years, to ask such a question, but one may say that very often the difference between is not easily marked, and hence Teas and Noisettes are always included in one class — "Teas and Noisettes." I do not exactly know the number of plants, but I believe that when Mr. Burnside has completed his planting he will have about 3000 trees.

At the top of the principal garden there is a border of dwarf Roses—if, indeed, dwarf they can be called, for so wonderful is the growth that the bushes are 6 feet high, and about 4 feet through, Marie van Houtte, being conspicuous by the vigour of its growth in the lower part of the grounds, in a small piece, where the soil is heavier, and there some standards are doing well, and some hybrid Perpetuals are endeavouring to show some front, although they are rather the "Cinderella" of the place.

I have never seen Anna Olivier show such colour as here; and this opens out a question as to whether there are special strains of some Roses, or whether the difference in colour is to be attributed to some difference in the soil. What is the reason that the Comtesse de Nadaillac, shown by Mr. Prince, of Oxford, is always of such wonderful colour?—a colour no one else seems to approach. I have myself two plants of this variety on a wall facing south-west, and the earlier blooms are of a grand colour; but as the season advances, this is lost, owing to the heat of the position in which the trees are. Mr. George Mount, of Canterbury, has a strain of Maréchal

Niel, which he obtained in the neighbourhood, and which certainly bears flowers of a very deep colour. This peculiarity of strain takes place in other flowers, and I do not see why it should not amongst Roses also.

I fear I may be guilty of heresy when I say, that a garden of Tea Roses is somewhat disappointing; as seen at a little distance, the peculiar tints and shades of colour are not distinguishable, and the whole garden looks as if planted with white Roses. It is not, indeed, until you gather the blooms that you discover the exquisite colouring and refinement which gives them so great a charm. Of course, the lover of Teas will say that a garden of hybrid Perpetuals is garish and staring, but it is certainly brilliant in its colouring, and displays a greater variety of hue, from which white is not absent, but where the range is through the various shades of pink, rose-carmine, and crimson, up to the intensest shade of that colour; and much as I love and value Tea Roses, I should not like to be enforced to grow them alone for my garden.

As Mr. Burnside is a keen exhibitor, it is but natural that he should grow exhibition Roses, and since there are several varieties, pretty in themselves, but of no value on the exhibition table, Souvenir de Gabriel Drevet, Comtesse de Frigneuse, Princesse de Sagau, and flowers of that stamp, are excluded. We went through the list of Teas together, and if I recollect right, we could only decide on about twenty-four as being really show varieties; here they are:—Anna Olivier (Ducher, 1872), Catherine Mermet (Guillot, 1869), Cleopatra (Burnett, 1889), Comtesse de Nadaillac (Guillot, 1871), Devoniensis (Foster, 1840), Ernest Metz (Guillot, 1888), Ethel Brownlow (Dickson & Sons, 1887), Francisca Krüger (Nabonne, 1879), Hon. Edith Gifford (Guillot, 1882), Innocente Pirola (Ducher, 1878), Jean Ducher (Ducher, 1874), Princess Beatrice (Burnett, 1882), Rubens (Robert, 1859), Souvenir d'Elise Vardon (Maret, 1854), Souvenir de Paul Neyron (Leach, 1871), Souvenir de Sarah A. Prince (Prince, 1889), Souvenir d'un Ami (Defongère, 1846), The Bride (May, 1885), Madame Cusin (Guillot, 1881); Madame Bravy (Guillot, 1848), Madame de Watteville (Guillot, 1883), Madame Hoste (Guillot, 1887), Madame Lacharme (Lacharme, 1877), Madame Van Houtte (Ducher, 1871); Niphetos (Bougère, 1844).

A good deal has been written lately on the subject of church decoration, and I cannot but think that some lessons might be learned from Mrs. Burnside's tasteful arrangement of the little church for the harvest festival (for there is an Eve in this paradise). I had known of her taste long ago in the arrangement of flowers for the decoration of the table. I saw the same taste in the decoration of the House of God, besides the usual materials. I noticed there was good use made of the flowers of Pyrethrum uliginosum and Pampas grass. *Wild Rose.*

The Bulb Garden.

GLADIOLUS THE BRIDE.

We have scarcely anything among hardy bulbous plants so distinct, and yet so full of value commercially, as this plant. For forcing for early work it stands alone in its class as a flower of great purity, possessing every possible recommendation where lightness and elegance are needed, while the admirable way in which the individual flowers lend themselves to the florist, leaves it, as it undoubtedly is, a most desirable plant—a plant which no conservatory or greenhouse should be without. Those who have not got in their supplies should see to this at once, as it is necessary that plenty of roots be made before they receive any artificial heat whatever. The most suitable sized pots are 6 or 7-inch, and according to the size of the bulbs—which, by the way, are small, and likely to surprise those unacquainted with them—six or eight may be placed in each pot, covering with an inch or thereabouts of soil. This latter should be composed of two-thirds sound loam, rather sandy, with manure and leaf-soil in about equal quantity of each, and in proportion of one-third of the loam. Secure a thorough drainage, and let the soil be fairly dry when used for potting; do not water the bulbs at potting time, but stand on a hard bottom of coal ashes, and cover with 3 inches of similar material. With the rainfall at this season of the year, they soon commence root action, but it is not prudent to introduce them into heat before the pots are well filled with roots, and even then the temperature must not be above 50° or 55°. When growing, use the syringe freely, and keep them well supplied with moisture at the roots. Potting in small pots to start these useful subjects, and then shifting into larger pots is a mistake, and can only be done at the sacrifice of valuable roots. Good corms of these, small though they are, frequently produce three and four flowering spikes, and these of a remarkably useful size. It cannot be grown too largely, for we have nothing at all to equal, much less surpass it, and to misplace it is next to impossible in any floral arrangement. *J.*

ORNITHOLOGY IN RELATION TO AGRICULTURE AND HORTICULTURE.

(*Continued from p.* 559.)

Owls.

The Tawny Owl.—This is the large, brown species, which is mostly found in deep and sombre woods. Like its cousin, it is a mighty hunter, and an examination of its pellets shows equally interesting evidence. Dr. Altum examined 210 of these, which revealed the following remains:—six rats, 42 mice, 296 voles, 33 shrews, 48 moles, and 18 small birds. These last comprised a wagtail, a tree-creeper, a yellow bunting, and 15 small species undetermined. In addition, there were the remains of 48 beetles, and a countless number of cockchaffers. With regard to the insect remains found in the pellets ejected by owls, they are mostly those of beetles—principally of the genera Agonum, Abax, Steropus, and Carabus. The wing-bones of bats have been detected among these insect body-cases. Almost every one of the small rodents enumerated is destructive to farm-crops, to young woods, and plantations. It may be said at once that this species more frequently takes an occasional young game-bird, or rabbit, than any of its congeners. For instance, the writer was acquainted with an individual that developed a *penchant* for pheasant-chicks, and was shot by the keeper in carrying off its seventh bird. I have frequently seen it take very young rabbits, and once a young shell-duck nearly a month old. Still, these occasional misdeeds are small, when compared with the good practical work done by the bird.

A pair of tawny owls has been seen to carry twenty-seven rats and mice to their young in a single summer evening—a feat surely beyond the powers of any pair of cats. And yet this is the bird which most gamekeepers, in their mistaken zeal, shoot, trap, and poison. Upon one occasion, one of Waterton's servants robbed the nest of a tawny owl, and placed the young ones in a cage not far from the hollow tree where they were bred. The parent birds brought food for their captive offspring, leaving it on the ground outside. This consisted mainly of rats and mice, with a few small birds, and an occasional fish.

The Long-eared Owl.—Twenty-five pellets of this species showed the following results:—6 mice, 35 voles, and 2 birds. Although a useful bird, and one which ought to be preserved, I am quite of the opinion that this owl feeds much more commonly upon birds than its relations. Its ordinary food, however, consists of rats, mice, voles, and occasionally small birds; and in the stomach of one individual, Selby found five skulls of mice. As many as fourteen moles have been taken from one of the long-eared owls. The reason why small birds oftener enter into the dietary of this species is probably to be found in the fact that it is much more diurnal in its habits, and does not seem in the least incommoded when flying in the full light of day.

The Short-eared Owl.—This is the fourth and last species of which it is proposed to speak. Again the food consists of rats, mice, voles, shrews, and, more occasionally, birds and beetles. Mr. Low, writing on the "Birds of the Orkneys," where the short-eared owl breeds, says that he has found in, or near, its nest the remains of a moorfowl (red grouse), and two plovers, besides the feet of other species; and the same writer states that during the breeding season it becomes very impudent, and will even seize, and catch up, chickens from the doors, and also chase pigeons in the open daylight. A farm servant of Mr. Cordeaux's, however, speaking of the bird in relation to the stacks on his marsh farmstead, thought it "far before any cat"—a very practical kind of testimonial; and here is another, although it occurred as far back as 1580 (*circa*):—"About Hallowtide, in the marshes of Danesay Hundred, in a place called Southminster, in the countie of Essex, a strange thing happened: there sodainlie appeared an infinite multitude of mice, which, overwhelming the whole earth in the said marishes, did sheare and knaw the grasse by the rootes, spoyling and tainting the same with their venimous teeth, in such sort that the cattell which grazed thereon were smitten with a murreine, and died thereof; which vermine, by policie of man could not be destroyed, till at the last it came to passe that there flocked together, all about the same marishes, such a number of owles as all the shire was not able to yield: whereby the marsh-holders were shortly delivered from the vexations of the said mice."

This account, old as it is, is probably quite accurate, as there are many modern instances to keep it in countenance.

In 1754 a like occurrence is said to have taken place at Hilgay, near Downham Market, in Norfolk; while within the present century the Forest of Dean, in Gloucestershire, and some parts of Scotland, have been similarly infested. In all these cases owls are particularly mentioned as thronging to the spot, and rendering the greatest service in extirpating the pest.

In this connection a remarkable and interesting provision is shown—viz., that when animal food is particularly abundant, owls breed more frequently, and the clutches of eggs consist of more than the normal numbers. In this way Nature regulates her own economy.

I hope that the folly of either gamekeepers or farmers destroying owls has now been demonstrated; and I will allow the following quotation, by the Rev. Charles Dixon, to sum up the case between the two:—"As the gloom of evening settles over the corn, the owls leave their daily haunts in the distant woods and farm buildings, and hunt about in quest of their prey. Farmers, and more especially game preservers, persecute these birds incessantly, without giving a thought to their usefulness. The cornfields swarm with mice and rats, so likewise do the barns and outbuildings. The usual food of the barn-owl and the wood-owl is mice and rats, and the number of these little animals caught among the Wheat is almost incredible. Softly the useful birds pounce down again and again on their prey, ridding the fields of their destructive pests, claiming no reward from man, asking only to be let alone. Every year these useful birds are becoming scarcer; the ignorant intolerance of farmers and keepers is slowly but surely working their extinction, and the mice and rats will soon have things much their own way. Here, then, we will leave the birds to the farmer's careful consideration. Let him watch the habits of these feathered policemen, and convice himself of their usefulness. Let all lovers of the feathered tribe plead their cause with the farmer and the gardener; and, if this will not do, let us have these birds placed more effectually under

the protection of the law. This question is one of vital importance to the industry of agriculture, and, all sentiment aside, is one which irresistibly appeals to every lover of birds."

These clever mousers, then, have a strong claim to our protection; so let not idle superstition further their destruction. *John Watson, F.L.S.*

The English Sparrow.

Darwin, in his *Animals and Plants under Domestication*, has this passage:—"From a remote period, in all parts of the world, man has subjected many animals and plants to domestication and culture. Man has no power of altering the absolute conditions of life; he cannot change the climate of any country; he adds no new element to the soil; but he can remove an animal or plant from one climate or soil to another, and give it food on which it did not subsist in its natural state."

Man has consciously and intentionally improved many species of animals with enormous advantage to himself. Unconsciously, and without intention, he has, by action or inaction, increased the numbers of certain species, and diminished the amount of others. For example, the wholesale slaughter of hawks, owls, jays, magpies, stoats, and weasels, has tended to produce alarming quantities of rats and mice, the balance of Nature having been deranged by the volition of gamekeepers. Rabbits were introduced into Australasian countries whose climatic and other conditions are expressly suitable for their propagation, and natural checks against this, in the shape of carnivorous enemies, are wholly absent. The consequences to the owners of sheep-runs and cattle-ranges are simply disastrous; the rabbits defy all efforts to keep them down.

The wholesale spreading abroad of weeds has been caused by the unconscious act of man, and without his special interference. In the same way many injurious insects have been distributed throughout the world in the same unpremeditated manner, to the great inconvenience and loss of the cultivators of the soil. But with regard to the introduction of rabbits into Australasian colonies, this was done consciously and with open eyes. In the same way the sparrow was introduced into America and the Australasian countries, though the fatal consequences of this colonization were not in any degree expected by the sentimentalists who thought it would be very pleasant to hear the familiar chirp of the lively bird in the homes of the United States and Australasia.

In Great Britain the action of man, both conscious and unconscious, has occasioned an undue development of sparrows in these late years, to the great injury of farm and garden produce. Our forefathers were wiser in their generation, and kept sparrows down by means of parochial byelaws whose carrying out was charged impartially to the accounts of parish rates, and in many cases to the church rates. In old churchwardens' books at the beginning of this century entries of this kind are commonly found—"To Joe Willett, for 4 doz. and 4 sparrows, 1*s.* 1*d.*" Both taking the eggs and killing the young of sparrows were religiously enjoined upon the youths of former days, and these birds were kept well under. Churchwardens no longer have rates to spend, and bird-nesting does not occupy the minds and hands of boys in these regenerate or degenerate days of School Boards. After the compulsory payment of church-rates was abolished, sparrow clubs were formed in the principal corn-growing parishes, but most of these have fallen into desuetude, and sparrows now increase and multiply without let or hindrance. The consequence of this is, that they are so abundant as to be sources of infinite injury to cultivators of all kinds. In the last two or three seasons, sparrows have visited corn-fields in some districts from the end of July to September in flocks of thousands, as they always congregate for a period at the end of the breeding season, and have cleared the ears of grain. Sparrows propagate in an exceedingly rapid ratio, so that checks of some kind are absolutely necessary, in order to keep them in proper bounds, and to obviate the injury to corn crops of all kinds, which becomes more serious year by year. While collecting information lately concerning the Hessian fly and its action upon corn crops, we were in many cases met with the following response:—"Yes, there are some pupæ of the Hessian fly to be found, but the harm done by this insect is far less than that caused by those confounded sparrows." As a good deal of corn was much laid this season by the heavy rains, the sparrows were able to get the grain easily; although, as is well known by observers, they have a way of getting it out from the ears of upstanding crops. A corn farmer living near a large town stated lately that "they seem to come out from the town for the summer. I see them in flocks of many thousands just when the corn is filling, and they keep at it as long as there is any left in the fields. I have seen fields of Wheat, Barley, and Oats, with scarcely a corn left in the ear for 20 yards round the field. Two or three small farmers this year have had men tending the fields. True, the cost of men and gunpowder is nearly as much as the damage, as they had to fire off every 10 minutes, and the sparrows get so used to it, that they quietly go into the middle of the fields. One man who had 30 acres of corn, put the damage done by the sparrows at £20. Another said they had eaten at least 8 bushels per acre in an eight-acre field." Farmers in many places declare that they must make a raid upon the sparrows in self-defence, and talk ominously of poison in the coming winter.

Sparrows also injure farmers by eating the seed of Trifolium incarnatum, which is sown before the plundering sparrow gangs are broken up, and is generally put in broadcast and merely rolled in, so that much of the seed is exposed. And no one can estimate the enormous amount of injury caused by sparrows in picking out the buds of fruit trees during the winter, not only in gardens and orchards, but also in fruit plantations away from houses and buildings. They are particularly fond of the buds of Gooseberries and red Currant bushes, and of Cherry and Pear trees. Peach trees also suffer from their depredations. As an excuse for this mischief, it is alleged that it is done to get at insects in the buds. Sparrows have been closely watched at this work, with the result of proof that there were no insects present, the damage having been done, as it appeared in some cases, for mere wanton destruction, and in others for the sake of the green sweet buds as pleasant food. In hard winters, when other food is scarce, fruit trees and other trees suffer exceedingly from the attack of sparrows. When Peach blossoms are unfolding, sparrows may often be noticed picking off the flowers and pecking out the buds, apparently for amusement. This is frequently attributed to the action of frosts. Just as the buds of black Currant bushes are unfolding, sparrows frequently attack them and pull the blossoms to pieces, although there are no signs of insects within. It appears to be mere mischief. In the United States the destruction of buds and blossoms of fruit trees and other trees is recognised as most serious, and admitted without argument even by many of the sparrow's friends. There are still a few who believe that the bird in destroying buds is only seeking insects within.

Fruit is also damaged by sparrows. Ripening Figs and Plums seem especially grateful to their tastes. Apples, too, suffer from their repeated pecks. Peaches also and Pears on walls are often noticed to have holes in them, which are set down to mice or insects. If they are watched it will be frequently found that sparrows cause the harm.

Vegetable gardeners know to their cost what terrible mischief sparrows occasion to Peas throughout the season, from the time when the first leaves appear, to the last pickings of pods. Young Lettuces and early Cabbages are ravaged, the slugs being often falsely accused. Beetroot leaves in early stages are nipped of; Spinach is devoured when the leaves are young and tender. In short, unless the habits and destructive ways of these birds are carefully noted, no one can have a conception of the losses they cause in kitchen and market gardens, as well as in flower gardens, in taking seeds and in picking off the first leaves of young plants. For example, it is difficult to get Mignonette where sparrows abound. Many other flowers are attacked in their early stage by these ubiquitous and almost omnivorous depredators. The almost unmixed evil wrought by house sparrows has been clearly brought before cultivators by the late Colonel Russell, of Romford; by Mr. Champion Russell, and oft-times, and in characteristically vigorous terms, by Miss E. Ormerod, who in her thirteenth report on injurious insects, says:—"The observations of the 'sparrow nuisance,' as it is well described, continue to show the same points which are observed year by year—namely, loss from depredations of this bird on fruit-tree buds, &c., to fruit farmers; on young crops of vegetables, as Peas, &c., in gardens; and deplorable losses where the birds flock to the corn in autumn." *Charles Whitehead, F.L.S., F.Z.S.*

(To be continued.)

Florists' Flowers.

THE FLORISTS' TULIP.

The march of time has again brought round that period of the year when those who grow Tulips for exhibition plant their beds. In the palmy days of Tulip culture at Slough, the best bed was always planted on or about Lord Mayor's Day, November 9, according as the weather served. I took part in the work on several occasions, and it was always performed with a gravity and carefulness quite in keeping with the importance of the operation. It was the traditional date for planting, handed down from father to son, and observed with due solemnity. I think it is wise to plant about the middle or third week in August, because the weather then is likely to be more open and favourable than in November, which is a month of fog, rain, and cold. Probably the Tulips would not take much harm if they were not planted till the early part of December; but the uncertainty of the weather forbids such delay, for planting when the ground is workable is an important point, and much more likely to prevail in October than in the two following months.

We have outlived the fanciful composts our forefathers used to recommend for the Tulip as well as for the Auricula. The old stimulants are not at all necessary, for, as the Rev. F. D. Horner remarks, "The Tulip, though not to be called fastidious as to soil, for it will grow well in any good garden ground, does certainly love a soil that is stiff and deep. A well-worked clayey, heavy soil, that is, if I may so express it, coarse in grain, roughly granular, enabling water and rain to pass freely, is good, irrespective of colour, so long as it is not peaty, or impregnated with any metallic oxides. Soil that will grow good Wheat and Beans will do admirably for Tulips, and a dressing of turfy, chopped-up sods from a heavy old pasture, is a capital help." And he also remarks that he never had Tulips better than when once, by change of residence, he had to plant them after Potatos in a clayey soil well drained and worked. If the soil is in good heart, there is no occasion to dig any "well-rotted manure" into it, for the best enrichment, if the beds must have it, is safest as a surface-mulching after planting. I think that Mr. Samuel Barlow sometimes risks a fine head of bloom on his bed of best Tulips by planting them into an open and spongy compost. At Slough several cartloads of a fine maiden yellow loam, somewhat firm, used to be drawn in for planting, and a little well-decomposed manure was added to it. But it was the virgin loam that yielded the materials for constructing the fine blooms Mr. Turner used to exhibit so successfully.

In one of his papers on the Tulip, Mr. Horner points out that the Tulip, like the Carnation, is very fond of salt. "I use," he says, "the same ground every year for Tulips; and nearly every summer, just after taking them up, give the beds a fair sprinkling of common salt, till they seem as if

whitened by a slight fall of snow, not quite enough to cover the ground. This, however, is not a necessity, though an advantage; but if the space is wanted afterwards for other flowers, such as half-hardy plants and annuals, or for other crops, a salting would not be seasonable.

All cultivators of, and writers on, the Tulip, unite to attest to the value of a well-drained bottom to a Tulip bed. They say that wet, in the shape of water, that cannot get freely away in the ground, is the death of the Tulip; its worst, and almost its only foe. It is to provide drainage of the surface rains that a Tulip bed is always raised a foot or so above the ground level. Boards are employed to make up the sides, and sometimes bricks. Mr. Turner, in the height of his popularity as a cultivator and exhibitor, used to turf the sides of his bed, and this had a charming effect when the flowers were in full bloom. There should be space left for laying on a good fat surfacing of top spit soil or mulching at the proper time. The root-fibres of the Tulip strike down very deeply into the soil, hence the advantage of a good depth; and though it has been said that frost will injure the Tulips, it is doubtful if any harm can befall them from this cause while they are underground. Mr. Horner states, that in the severe winter of 1881, his beds were frozen solid below the bulbs, yet not a leaf was injured when the foliage appeared in the spring, several weeks behind its time; and he adds, "Cold cannot hurt a Tulip bulb, but wet can." *R. D.*

Chrysanthemums for Decoration.

I was pleased to read "J. H. G.'s" note, p. 538 of the *Gardeners' Chronicle*, on these plants, as with the present taste for big blooms, the decorative part of the business is sometimes lost sight of. I had an opportunity of seeing this house of plants last week, and found they were certainly admirable examples of cultivation, furnished with fine blooms and good foliage. Such plants are of service in many ways, and more so than the large bloomed long-stemmed plants, whose bloom soon gets taken possession of by damp. Messrs. Veitch, of Chelsea, are wisely setting good example by showing us how nice plants with plenty of flowers can be grown by the dwarfing method. This method gives plants not difficult to stage like the tip-toppers, and admits of having the naturally tall growers staged behind them.

For exhibition purposes, the single flower single-stem method will be the one adopted for obtaining large blooms, but for house decoration I certainly think the dwarfer plants are much better, and we get with liberal treatment good blooms at a less cost of labour and time. *G. Wythes.*

The Cineraria.

It suits my purpose to grow nearly the whole of my Cinerarias from offsets, which are taken from the parent plants any time after midsummer. It is possible to obtain them earlier, but it is not desirable to do so during the warmest part of the year, good flowering specimens being easily grown from offsets put in during August. The earliest offsets are at this late period already in the 8½-inch pots, in which they will flower. The later ones will be finally repotted early in the new year. It is neither essential nor desirable that the compost used should be very rich; and I think that we err in making it so, because rich soil disposes to large flabby brittle leaves that snap at a touch and are spoiled. A good potting soil is made with turfy loam five parts, one part coarse white sand, one part leaf mould, and one of rotten manure. This compound is sufficiently rich to produce good stocky growth. The leaves being at the best rather brittle, must be carefully handled when potting the plants, or tying them out. It is an essential part of good culture that the large leaves should be tied out so as to allow air and light to reach the rising flower stems, and this work is best accomplished by tying a piece of tarred or other string round the pots under the rim. The best position for Cinerarias until they begin to flower is in a span-roofed pit, where they should be placed quite close to the glass, or at least at near as is safe or convenient. It is of much importance that the plants should be kept free from aphis, which, although they do not injure them much in winter, will show a marvellous increase as soon as warmth increases. A very troublesome parasite on Cinerarias at this season is white mildew, which, when unobserved, soon produces a quantity of fine white thready lines upon the under sides of the leaves. To get rid of it, the best thing is to dust the under sides of the leaves with flowers-of-sulphur. Fumigation with tobacco will destroy aphis, but caution is necessary in its use, as the leaves are very tender, and easily and permanently injured by it, for it should not be forgotten that the foliage is in its own way as beautiful as the flowers, and the latter are never seen to advantage unless the foliage is good.

The nearer Cinerarias are to the glass the more likely they are to be injured from frosts, and it may be well to remark that, when sharp frosts set in, the balance must be well and carefully kept between heating the house too much and allowing frosts to injure the leaves near the glass. The temperature may fall 2° or 3° below 40°, but should not rise much above that point. A high night temperature with an over-dry atmosphere does not suit the plants, and air should be admitted on all favourable occasions; but not when drying cold winds are blowing, as these cause the leaves to droop, and subsequently to decay. I might say a word about some of the distinct and beautiful varieties exhibited during the past season by Messrs. James & Son, Farnham Royal; but those that received certificates have been described in these pages. None of these varieties have as yet been sent out in the way usual in previous years, and being certificated and described, it may not be worth while to say more here, than that the steady improvements shown in form of flower, and the habits of the plants, have been continued up to the present time. It may be well to remark that good culture has much to do with dwarfness of habit, and general good quality of the plants and flowers. *J. Douglas.*



Fig. 117.—Germination of seed of Araucaria imbricata. (see p. 588.)

Foreign Correspondence.

Curcuma roscoeana, *Wall.*

This is, as the author says, an extremely beautiful and splendid plant, and certainly one of the most ornamental of the whole genus. It may at once be distinguished from all the other species by its scarlet flower-spike, which is oblong, straight, tetragonal, and sometimes pentagonal, deeply furrowed, and subacute, which is destitute of any coma, and consists of very numerous tongue-shaped, spreading bracts, dispersed in four or five longitudinal protruding series, each forming a large pouch, occupied by one flower at a time. The structure of the anther differs from any observed in the other species, and in some degree invalidates the character of the genus, for it terminates, as in the case of Kæmpferia, in a large oval crest, and its base is perfectly naked.

The size of the plant varies considerably. Wallich found it in the wild state rarely beyond 1 or 2 feet in height; but in the Botanic Garden of Calcutta it even exceeded 3 feet, with a spike fully 12 inches long. The principal root is very small, the tubers very numerous, small, milk-white within, possessing a very faint aromatic taste.

The species in the Royal Botanic Garden at Berlin, which has flowered for many years towards the end of the month of October, likewise varies much in size. The figure in Wallich's *Plantæ Asiaticæ Rariores* shows the leaves ovate-lanceolate, twice as long as they are broad, whilst the leaves of the Berlin plants are thrice and more longer than they are broad. The culture of the plant is not difficult in general, only at the beginning and at the end of its season of growth some caution is necessary. A good illustration of the flower-spike, as well as of a single leaf, is given in the *Botanical Magazine*, t. 4667. *U. D., Berlin.*

The Cultivation of Pears in Jersey.

During a recent visit to this sunny island, I became much interested in Pear cultivation. There are few persons who, when passing the best fruiterers' shops in London, are not struck with the fine appearance and large size of the Pears in the windows, and if their curiosity leads them to ask questions, they are informed the fruits are grown in Jersey. The climate of the island is favourable for Pear culture, but, this notwithstanding, it is not the easy matter that most people think, as I will endeavour to point out. Many persons think the growers have only to procure the trees, plant them, and gather fine fruit in due season. Undoubtedly, there are some persons who plant in the happy-go-lucky way, common enough in England and elsewhere. The greatest care is taken in selecting such varieties as have proved themselves to be free fruiters, and in demand in the best markets. A small selection, and not a collection, is the aim of the Pear grower. Drainage is the first point that gets attention, for although the surface of the island generally slopes to the sea, and one would think there was not much need for drainage of an artificial kind, yet it is a fact that much of the land is worthless for the production of good fruit.

The soil is a loam of good quality and of varying depth, from 2 to 7 feet, and rests upon a stratum of clay, which in some places is of a very retentive kind. The slope of the land generally being from north to south-west, it is very warm, and the moisture of the surrounding air, which almost always may be felt blowing over the surface of the land, renders it well adapted for fruit growing; yet there are places in the island which are entirely unfit for fruit culture, notably near the coast, where the soil contains much sand brought inland during stormy weather; and again on the western side, which is exposed to the gales from the Atlantic. The comparison is very striking between those growers who make a study of Pear culture, and have put a good capital into their business, and those who plant in a careless manner, and give but small attention to their trees. In Jersey there were many failures of crop, as in England, and quarter after quarter was bare of fruit. On the contrary, Pears on walls bore good crops, as they do as a rule. Various systems of training are adopted, cordons, fans, and the horizontal method for walls. In the open quarter, pyramids on the Quince stock are generally planted, and they are both budded and grafted. The cultivation of the Pear, having been remunerative in past years, it has been made the subject of much study. Judicious pruning, *i.e.*, removing superfluous and weak branches, so as to cause equal growth, and get the fruiting buds and spurs well ripened, and

turning the vigour of the plant into the right direction. The growth generally is so vigorous as to render it unnecessary to prune the extremities of the shoots, except for the sake of giving shape to the trees. Thinning out the shoots is the more common method of pruning.

It will give an idea of the extent of Pear culture in Jersey to mention that one grower alone possesses 60,000 fruiting trees. Another matter worthy of note is the care that is taken to protect the fruit from "tits," sparrows, and robins, the latter, it is said, being the most destructive. Muslin bags are employed to encase the best fruits. There is one great drawback to the bagging method—that is, that it does not allow the fruit to attain the bright colour exposure always gives.

The varieties grown for early supplies are Citron des Carmes, Jargonelle, Williams' Bon Chrétien; then follow Louise Bonne, Maréchal de la Cour, Beurré d'Amanlis, B. Diel, Duchesse d'Angoulême, Pitmaston Duchess, Doyenné du Comice, Chaumontel, Glou Morçeau, and Easter Beurré. Of the above, Williams' Bon Chrétien is more extensively grown than any other early Pear; Beurré Diel is found to crack in some parts of the island, and it is being less planted than formerly. Doyenné du Comice is gaining favour, and is being much increased; Chaumontel is really the Jersey Pear, and it is grown in very large quantity; but growers say that they cannot grow it quite up to the standard of former years—that is, speaking generally; but on certain trees and aspects fine samples are still produced. There are, of course, many other varieties of Pears grown for dessert, but this is their selection. The culinary Pears grown are Belle de Jersey (syn. Belle Angevine), and Catillac or Pound Pear. The land in Jersey being limited in extent, is of great value, and no part is allowed to remain unproductive. The trees are planted rather thickly together, and Currants and Gooseberries are planted in the intervening spaces, and remain until the trees meet. Stable and other manures are used in quantity, and some growers make use of artificial manures solely. It is quite the exception, not the rule, to see large Pear trees on the island. The Quince stock will account for this, and it is the only one employed because of its causing early bearing. *A. Evans, Lythe Hill, Haslemere.*

MANURE FOR THE GARDEN.

(Continued from p. 504.)

The next point to consider in regard to the use of nitrate of soda for manure is—

Nitrate of Soda *v.* Insects and Diseases.

There are many facts showing that an application of nitrate of soda, in connection with other plant food, where necessary, will produce such a healthy vigorous growth early in the season, with such an abundance of rich sap, that the plants can sustain with comparative impunity the attacks of insects and fungi. If ordinary dung is used in sufficient quantity to produce the same effect, we get too much nitrogen late in the season with immature growth of wood. But by the direct use of the nitrate we can control this matter, and get a luxuriant growth just when we want it. This matter is well worthy the attention of gardeners and fruit growers.

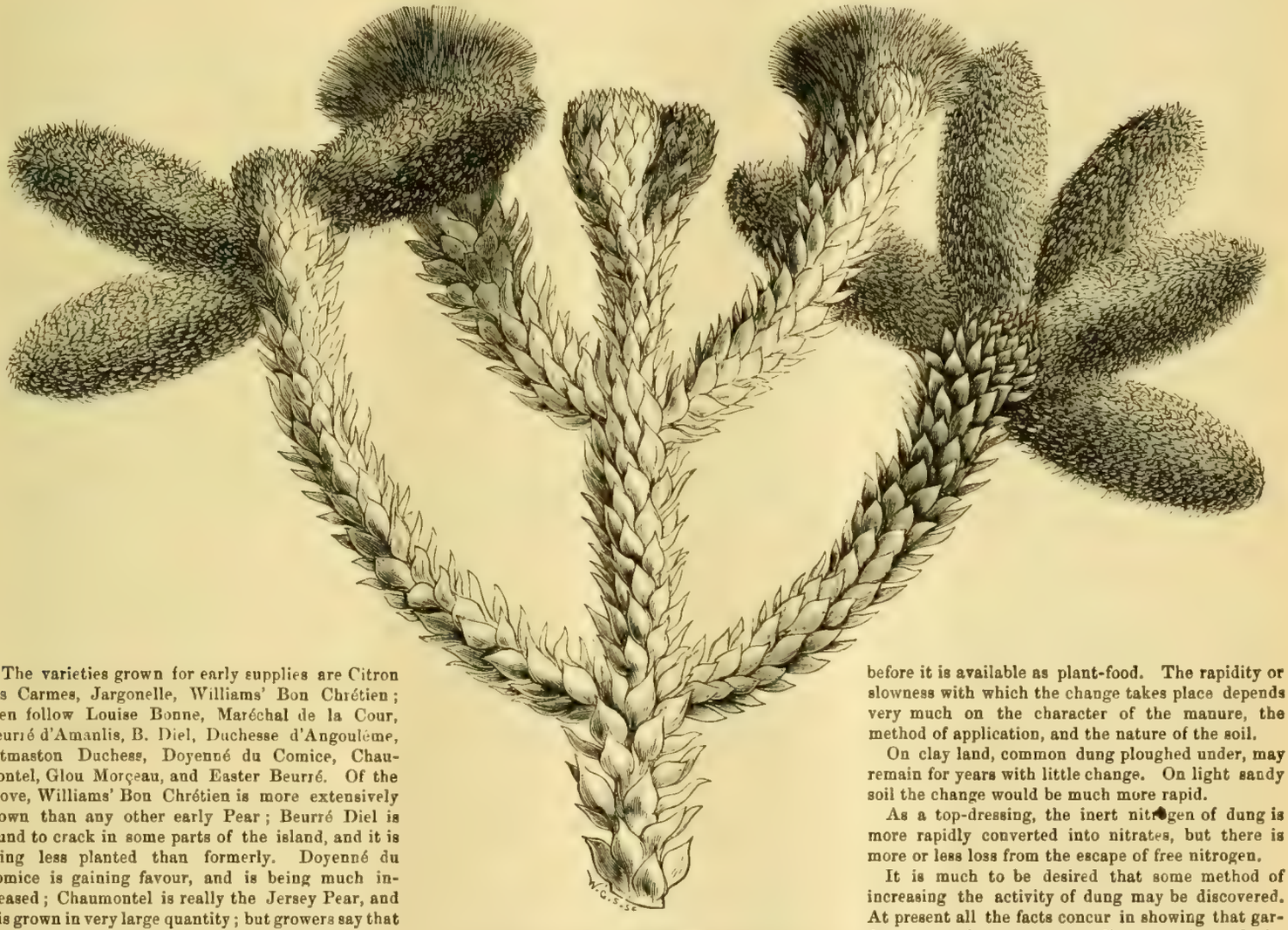


Fig. 118.—Male and female cones of Araucaria imbricata on the same branch. (See p. 588.)

To what Crops should Nitrate of Soda be Applied?

It may be stated that nitrate of soda is not regarded as a substitute for other manures. Taking horticulture as we find it, we recommend nitrate of soda as the cheapest and best form in which to apply nitrogen to plants. To those who are using ordinary stable dung, we say continue to use it; but use nitrate of soda in addition. If you are using superphosphate, continue to use it, but use nitrate of soda also; and so of any other fertiliser. If you use guano, blood, bones, fish, stable manure, night soil, or manure of any kind, the nitrogen must be converted into nitrate before the plants can use it. With few exceptions, all the fertilisers now generally used, in proportion to the wants of the plants, contain a larger proportion of phosphoric acid, potash, &c., than they do of available nitrogen. If we desire to raise maximum crops, therefore, we must furnish available nitrogen, and the cheapest and best form in which to get this nitrogen is by nitrate of soda.

Nitrate of Soda *v.* Farmyard Manure.

The nitrogen in manure must undergo nitrification before it is available as plant-food. The rapidity or slowness with which the change takes place depends very much on the character of the manure, the method of application, and the nature of the soil.

On clay land, common dung ploughed under, may remain for years with little change. On light sandy soil the change would be much more rapid.

As a top-dressing, the inert nitrogen of dung is more rapidly converted into nitrates, but there is more or less loss from the escape of free nitrogen.

It is much to be desired that some method of increasing the activity of dung may be discovered. At present all the facts concur in showing that gardeners get but a very small proportion of the benefit from dung that the nitrogen it contains is capable of producing.

An Important Truth for Market Gardeners.

Market gardeners are very frequently in the habit of using 50 tons or 75 tons, and sometimes 100 tons, of farmyard manure every year, and they will tell us that they might as well stop gardening as to stop manuring.

Sir John B. Lawes well says:—"When we consider that the application of a few pounds of nitrogen in nitrate of soda to a soil which already contains several thousand pounds of nitrogen in its organic form, is capable of increasing the crop from 14 to 40, or even 50 bushels of Wheat per acre, I think it must be apparent to all that we have very convincing evidence of nitric acid being the main source of the nitrogen in plants."

And yet the market gardener continues to use, year after year, enormous quantities of dung containing no ready-formed nitric acid. If the manure were given him for nothing, the labour of carting, handling, and applying it would cost more than the amount of nitric acid, which it annually yields by decomposition in the soil, could be purchased for in the form of nitrate.

In these market gardens the soil is so charged with carbonic acid that it excludes the oxygen, and decomposition proceeds so slowly that to produce the necessary amount of nitric acid, more and more manure must be continually used. It is recommended to try nitrate of soda, as it acts like magic.

Forcing Vegetables and Fruits, and Flowers.

Much time and money are spent in forcing plants, and practical men have attained remarkable results, though few gardeners can give any satisfactory reason for their operations.

We do not allude to forcing plants in a hothouse. This is simply a method of providing spring and summer weather in winter. But there is such a thing as "forcing" plants out-of-doors. We are told by an old horticultural writer, that this "is effected by manures of all sorts, but especially what are called hot and stimulating manures and compost, as pigeons' dung for Cucumbers, blood for Vines; and in general, as to soils, lime-rubbish, sand, and gravel seem to have the power of accelerating vegetation to a much greater degree than rich clayey or loamy soils, or bog or peat earth."

We now know what this means. The pigeon-dung and the blood are converted into nitric acid. The lime-rubbish is better than the clay and muck, because it favours nitrification, and old lime-rubbish may even contain nitrate of lime.

Nature furnishes nitrates for the use of plants in warm weather, but if we want to "force" plants, in other words, to make them grow ahead of the natural season, we must furnish the nitrates ourselves. If the soil is rich, Nature furnishes all the plant-food that is necessary except nitric acid; but nitric acid is produced only in warm weather. It should be remembered that nearly all the operations of improved gardening are not "natural."

When grown for food, Turnips, Beets, Carrots, Parsnips, Onions, Salsafy, Cabbage, Cauliflower, and Celery are not "natural" productions. We grow them for bulbs, roots, or edible buds or leaves; and to attain this object, it is necessary to furnish an unnatural supply of food in the soil, and practically this means more nitrate early in the season than Nature provides.

Gardeners, florists, and fruit growers are constantly interfering with what is popularly called Nature. To get double flowers, the florist starves a plant till it has only just strength enough to produce one small seed. From that seed he raises a plant which retains in part the dwarf habit of its parent, and which, when furnished with an unnatural supply of food, bursts forth into double flowers. The same is true of early Cauliflowers. The fruit grower dwarfs the Pear by budding it on the Paradise Quince bush. This checks its growth, and throws it into premature bearing. And then, by providing an unnaturally plentiful supply of food, he gets a great crop of large, delicious fruit. If Nature produce more fruit than the tree can mature, the gardeners must thin out or provide more plant food. In all these operations there is a necessity for more science and more nitrates.

Nitrate of Soda not a Substitute for other Ingredients of Plant Food.

It would seem hardly necessary to call attention to this fact. That a large amount of produce is frequently obtained by the use of nitrate alone simply shows, what is often the case, that the soil contains, in an available condition, all the mineral elements of plant food that a large crop requires. Nitrate is not a substitute for phosphates any more than phosphates are a substitute for nitrates. As a rule, to grow maximum crops, we need to use both.

For Potatos.

Nitrate of soda can be often used with great profit on Potatos, but as a rule it is not safe to omit the superphosphate or potash, especially on light sandy soil.

If the nitrate has been left out of the mixture used at the time of planting, sow 2 cwt. per acre, broadcast, and cultivate it in. The effect will soon be seen.

But we cannot too strongly remind our readers that it will not pay to use nitrate of soda to grow weeds. Put on the nitrate, but keep the cultivator or hand-hoe at work. If this is done, the nitrate, with the other necessary plant food, will cause such a vigorous growth of Potatos that they will smother the late weeds, and you will have not only a large crop of tubers, but the land will be left in a clear condition for subsequent crops.

For Onions and Garden Crops in General.

We can, says Mr. Harris, from several years' experience, recommend sowing broadcast over the whole garden, lawn, flower-beds, shrubbery, fruit, and ornamental trees, 500 lb. per acre of nitrate of soda, 400 lb. superphosphate, and 200 lb. sulphate potash, with or without the usual dressing of stable or farm-yard manure.

Nitrate of Soda in Solution.

When using nitrate of soda in the garden, it is sometimes desirable to apply it in solution. The quantity of nitrate which can safely be used in a gallon of water depends very much on the amount of water in the soil. If the soil is saturated with moisture, it does not matter how strong the solution is, provided only the proper quantity of nitrate be used per acre. The drier the soil the weaker should be the solution. A teaspoonful of nitrate, or one-half ounce to two gallons of water, have never been found injurious either in the garden or greenhouse.

For Roses, Tomato plants, &c., such a solution can be used every three or four days. The dark colour of the leaves will indicate when the plants have had enough; of course, the plants need other food besides nitrate. This is derived from the soil or compost in the pots; but great benefit is found from mixing a small quantity of superphosphate—say a tablespoonful to a bushel—with the soil before potting the plants, or sowing the seed in boxes. Care must be taken to mix it thoroughly with the compost.

Should too much nitrate or superphosphate be used the remedy is to saturate, and more than saturate, the soil with fresh water, and thus carry off in the drainage the excess of nitrate. A strong solution of nitrate or superphosphate, if sprinkled on the leaves of plants, will seriously injure them.

The advantages of using these fertilisers are so great, however, that it will well repay any gardener to experiment with them, and thus learn how to use them with entire safety.

A safe rule is to apply the nitrate yourself, or at any rate give the matter your personal attention. The average gardener will need to destroy a few plants before he will exercise the necessary caution. *J. J. Willis, Harpenden.*

Plants and Their Culture.

The Greenhouses.—The training of hard-wooded plants should be attended to, but plants which are grown for cut flowers will not require much, if any, tying, the pruning they get in removing the blooms keeping them in shape. As few ties as possible should be given to all specimen plants, merely sufficient of them to keep the plants in a natural form. New Holland plants, and Cape Heaths and other plants with fine hair-like roots should not have many sticks stuck into the mass of roots. Frost at night and damp should now be guarded against, and to guard against the first, the hot-water pipes should be put into use when ventilation can be afforded the house, and everything that causes damp should be taken away, and the watering of the plants done in the early morning. Re-arrange the house, placing those plants that require the most warmth at the warmest part of the house, and others requiring more air and moisture in the cooler part. The temperature for this house should range by day from 45° to 50° in mild weather, and 5° less at night; but on frosty nights a slightly lower temperature will be best, giving some extra warmth for an hour or two in the early part of the following day.

Cyclamens now in bloom should have a drier place than a garden frame usually is at this season, so as to keep them in a healthy condition. I have found that a warm treatment of Cyclamens suits them better than a cold one at this time of year; and this applies also to Bouvardias, especially in gardens near smoky towns, as with a low temperature fogs soon finish the bloom, and the work of a season is lost. Bouvardias do best in an intermediate-house soon after dull weather sets in, affording them a moderate amount of air.

Some of the earliest Roman Hyacinths will now be useful for mixing in this house if they are brought on gradually, not giving them full light for a few days after removal from the plunging material. Early-potted Tulips and Narcissus should be examined, and if ready for removal, they may be treated in a similar manner, giving the bulbs a warm corner close to the glass on a warm shelf. Some well-ripened clumps of Lily of the Valley put in bottom-heat in darkness now will be valuable at the end of the year. I place mine in cocoa-nut fibre in a temperature of 80° to 85°, keeping them thoroughly moist, and place them near the glass when they show bloom-spikes. These may be potted, or the flower-spikes cut when they are ready, replacing the clumps in the warm fibre for a few days for later bloom. The crowns of Lily of the Valley may be potted up, and the pots plunged in the fibre. A few bulbs of early Tuberoses should also be potted, and plunged in bottom-heat. Eupatorium Weinmannianum is a most useful plant at this season, the graceful blooms looking very nice when mixed with those of the Chrysanthemum, either in the cut state, or when growing on the plant. When kept dry overhead, the plants last in bloom for a long time. Salvias also require a dry house to prevent loss of bloom by damp, and during mild weather a small amount of air should be given them. Mignonette that has filled its pots with roots should get weak guano-water, and the pots be kept close to the glass. Plants for later bloom should be encouraged to make sturdy growth. The variety named Machet, a dwarf French variety, is one of the best for pot-work. It is a variety of Mignonette much grown by market growers. The useful Schizanthus should have a light place where it can be aired freely. Three plants placed in a large 60, or four in a 48, winter the best. *G. Wythes, Syon House, Brentford.*

The Orchid Houses.

The Intermediate House.—The use of heat and moisture being now reduced, many of the species of Orchids in this house may receive less water at the root, or spotting of the foliage, and sometimes rotting of the pseudobulbs will be likely to result. The proper application of water to Orchids requires much study and close observation of the plants themselves instead of paying attention only to the compost in or on which they are placed. In some cases where plants have not been repotted or top-dressed at the proper season, the old sphagnum dies and looks very dry, whereas the under part is too often a saturated mass. It stands to reason that plants thus treated will lose in health, and eventually die On the other hand, some plants are, during the winter season, simply starved from want of water, and I always impress upon everyone the importance of watering when water is found to be necessary—that is, when plants show the least sign of shrinking, a thorough watering should be afforded that will properly moisten the whole mass of sphagnum and soil. If this mode of watering Orchids is followed throughout the winter, the surroundings of the plants being favourable, little trouble and anxiety will be caused by the appearance of the plants.

Odontoglossum Londesboroughianum, now in flower, is in great beauty at this season of the year, and lasts in good bloom till Christmas. This species is a very easily grown one, if it be placed upon rafts

with some peat and sphagnum moss, and which should be stood in a flower-pot and packed round about with peat and sphagnum. In this mass of outside materials the roots will run freely. The plant liking considerable heat and moisture, should have the warmest position at command, and where it will get but little shade. Being of a deciduous nature, it will require a very small amount of water after the leaves fall, until new growth is seen to be pushing in the spring. It may be wintered in the intermediate house.

Dendrochilum Cobbianum is a useful species which comes into flower at this period, and when grown strongly it is a very desirable plant. The temperature of the intermediate house should be from 50° to 55° at night. The first figures being those for a very cold night, the latter when it is mild weather, remembering to maintain at all times a circulation of fresh air by means of the ventilators. *A. G. Catt, Parkfield Gardens, Hallow.*

Fruits Under Glass.

Pines.—If the plants of Smooth Cayenne and Black Jamaica have been grown as advised by me, fruits with well-swelled pips should be now ripening, with others in various stages of growth to succeed them. The watering of the plants during winter must be carefully done, and it will depend, in a great degree, on the state of the fermenting material, less water at the roots being required when the latter is moist, and *vice versâ*. It should be remembered that dryness is less harmful to the Pine at this season than wetness. In very cold weather at night, covering the glass prevents the radiation of warmth, and the minimum of 65° is better kept up, and a more genial atmosphere maintained in the house. When it is necessary to apply moisture to counteract the drying effects of hard firing, sprinkle the walls, paths, the surface of the beds, &c., but not the pipes.

Plants that have not shown fruits hould not have so high a temperature as those which have done so, and less water at the roots will also be required by them, otherwise they will grow throughout the winter. To produce Pines for table in the London season, to succeed the spring fruiters, it is necessary to have a number of some variety of the Queen of mature growth, and which should at this season be undergoing their ten or twelve weeks' rest, so as to have them in readiness to start—that is, some of them, by the beginning of January. For this purpose select those plants which have thick collars, and the greatest number of short leaves, such plants being almost certain to throw up their flower-spikes without making much more growth. Success will depend on the maintenance of a state of comparative rest, and the avoidance of extremes in either temperature or moisture, sufficient water being afforded to keep the roots healthy. Young stem roots are apt to suffer from dryness during hard firing and the cessation of syringing, and to counteract this, an occasional supply should be given, but only in such quantities as may be quickly absorbed. Black Prince has done unusually well with me this season, fruits of 10 lb. weight, and of fine flavour, having been grown; but Smooth Cayenne is the more trustworthy Pine-apple from this date onwards, whilst its more slightly acid flavour is appreciated by many.

Succession Plants, that were potted for the last time in August or September, should be kept steadily progressing, so that they may bring their fruits to maturity in from twelve to twenty months from suckers. The air temperature may have a minimum of 60° at night, with a rise of from 10° to 15° by day; the bottom-heat should stand at 73° or 75°. It is not good practice to disturb the plants at all after they are once plunged, but sometimes the beds will sink or become dry, and rearrangement becomes necessary, either wholly or in part. Strong suckers lately potted, and whose roots have reached the sides of the pots, must be kept moderately moist, and in a steady mild bottom-heat until potted in February; meanwhile, stools having undetached suckers on them should have plenty of light, to prevent drawing of the leaves.

Tomatos.— Plants in pots will now have set clusters of fruit, and will require generous treatment in an intermediate-house temperature. Those having a good strain of Tomatos that has set and fruited well the past season under glass, should propagate plants from cuttings taken at once, as cuttings struck now, and grown on with Pelargoniums or things of that sort, will be found to ripen fruit far in advance of late-sown plants; of course, care must be taken that the young plants do not become drawn. For early fruiting, I know of no variety that is superior to a smooth fruited selection of the Old Red. *W. Crump, Madresfield Court.*

The Hardy Fruit Garden.

Training Pear Trees.—As a form well adapted for gardens, the bush is very much in favour, and some varieties fruit better when trained in this form, if their shoots are trained towards the earth; but there are several forms of bush Pears which may be used, according to varying circumstances. For years past, Pears have been grown as cordons, and it is a mode of growing the Pear which deserves to become commoner than it yet is. Its great merit lies in the means it affords the gardener of having within a small area a great variety of fruits, and, therefore, a longer season of Pears; and by highly feeding these cordons, highly-flavoured, large, well-coloured fruits are obtained. If the soil of the garden be shallow or poor, the cordons are best when worked on the Wilding Pear stock, the Quince being too short lived on such soils. The comparative poverty of gravelly or shallow land tends to keep the growth of the Pear in check, proving productive of fruit.

[Pears grown as pyramids of from 8 to 12 feet high is a highly successful method on the Quince or Pear stock; and where the necessary root pruning gets proper attention, and the district is favourable to the growth of Pears without wall protection, it is an admirable method for growing fine large fruits. In the matter of stopping the shoots of bush, cordon, and pyramid Pear trees, it is well not to practice the severe and constant pinching of the summer shoots as taught by the late Thomas Rivers, the outcome of the system being short-lived trees crowded with fruit spurs, which in justice to the tree must be cut out or much of the fruit pulled off. Doubtless it is the excessive blooming and cropping, and the check caused by summer pinching which ruins Pears on the Pear and Quince stocks in whatever soil they may be planted. A better method is to let the shoots remain till June and July according to locality, and then cut them back provisionally to 8 or 9 inches in length, and in the winter cutting them back to within two or three buds of the last year's wood. By doing this at the time stated, quite enough fruiting spurs are made. Where too many shoots spring from the older wood, instead of stopping them or allowing them to grow to June or July, they are better rubbed off the branches whilst still in a soft state. It will be found that Pears as well as Apples, Quinces, and Plums, make trees at a faster rate than is the case under the other method alluded to above. Ed.]

Training Pears on Walls.—If one variety of Pear is wanted in large quantities, there is no better way of getting them than by horizontal training; the treble cordon being the next best method, that is, a tree with three stems, trained either upright or oblique. The varieties which may find a place on a wall are:—Flemish Beauty, British Queen, Fondante d'Automne, Van Mons Leon Le Clerc, Louis Bonne of Jersey, Beurré Superfin, B. Batchelier, B. Hardy, B. Clairgeau, B. d'Aremberg, B. Brown, B. d'Amanlis, B. Diel, Glou Morçeau, Doyenné du Comice, Durondeau, Pitmaston Duchess, Nouveau Poiteau, B. General Todtleben, Bergamot d'Esperen, Josephine de Malines, and Huyshe's Victoria. [The border for wall Pears should be 2 feet deep, well drained, and consist largely of sound loam. If the border has to be made anew in the autumn or winter, no new trees should be planted or old ones replanted before the soil has settled considerably. The roots of Pears should not be at a less depth below the surface than 6 inches, and may be laid as deep as 1 foot; at any rate, they ought to be laid at various depths, unless when it is planted as a maiden or once cut back. Pears in bearing and newly-planted trees require, and are benefited by a mulch, the former with rich dung laid on 2 inches thick, the others with litter kept in place with a sprinkling of soil. No Pear tree should be pruned when planted; certainly not young trees, but should stand one year before being cut. This may mean apparently the loss of a season, but it is not so, the uncut trees recovering from the check of removal better than cut ones, and are enabled to make stronger shoots afterwards. Ed.] *A. Evans, Lythe Hill, Haslemere.*

The Kitchen Garden.

Asparagus.—The beds should receive a dressing of rotten manure and be made neat and tidy for the winter; but before putting on the dressing, cut down the withered stems to within an inch of the base, and save seed if it be wanted, and rake off the light loose soil into the alleys. After this is done, the beds should be marked out, and the sides and ends made good with soil thrown up from the alley, a little being scattered over the manure. Put new wooden stakes at the corners if these be needed. Beds on heavy land will be all the better if covered up with leaves or litter, leaving the manuring until spring. In this kind of soil good drainage is very important, and the alleys should be deeper than in light land. If new beds are going to be made, the work should be commenced by deeply trenching the ground, and at the same time working into it a large quantity of fresh rich manure; and on heavy land, anything else that will tend to lighten it, fine coal ashes, sand, road-scrapings, &c. If the Asparagus is grown for forcing in frames, these thorough preparations of the land are not so much needed, deep digging and good manuring growing sufficiently fine forcing roots; and it takes about three years to grow the plants for forcing, and enough land should be planted annually as will meet the demands of the family. In forcing the plant, an ordinary frame of two or three lights will be found suitable, placed on a bed of mild fermenting materials sufficiently thick to maintain its warmth for six weeks or two months. When it is ready, lift the crowns with a fork, and pack them close together on the bed, filling in between and over them with leaf-mould to the depth of 4 inches. The lights should be kept close for a time; but when growth commences, a little air may be admitted at the back of the frame. The "grass" will be fit for use in sixteen to twenty days after being started.

Mushroom Beds.—In the open air the beds should be carefully seen to, and if the covering material has become wet, it should be replaced with drier stuff, keeping the beds exposed as little as possible. When changing the covering, see that the beds be thoroughly covered again to a good thickness, and made snow and wet proof.

Mint, Tarragon, &c.—Some roots of these herbs should now be placed in boxes or pots in a newly-started vinery or stove. *H. Markham, Mereworth Castle, Maidstone.*

The Apiary.

Since writing in the *Gardeners' Chronicle* on flour as a quieter of bees, some weeks ago, there has been much correspondence on the subject in various papers. All are, however, unanimous in praising flour as a quieter of bees. Some use Pea-flour, and some ordinary flour, with about the same results. The effect is still more satisfactory if bees are to be mixed that are heated through any cause.

As, however, bees at the present time are quiet enough, other things may be attended to. During the long winter evenings it is a good thing to look up our knowledge on apiarian subjects, and the days (or hours) of leisure may be spent in making hives, and other things, for another season. I say making hives, for it is quite certain that if bees are kept for the purpose of making money, it will not pay to buy expensive hives. A little while ago a witty article appeared in a London paper, giving the experience of a gentleman who gave large sums for swarms, and hives "with pretty little legs," but who obtained very small quantities of honey. The fact is, bees do not want to be messed about quite so much as they are on the modern system, and would be much better if let a little more alone. Moreover, they can do without windows and curtains, though a hive of this description was recently shown in order to obtain a prize. I saw an apiary this last summer, belonging to a working-man. He had hives of various sorts, but that in which there was the most honey consisted of five pieces of wood nailed together; in fact, it was nothing more nor less than a box turned upside down. It was painted, and as the parts fitted well together, no water could get in, although no cover whatever was used. Here was food for thought. Five pieces of wood cost about 1*s.*, and say, a half-pound of paint, at 6*d.* per pound. That was a hive for fifteen pence. This was cheaper than the old-fashioned skep. *Agnes.*

EDITORIAL NOTICES.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

NEWSPAPERS. — *Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

SHOW.

FRIDAY, Nov. 28—Dundee.

SALES.

MONDAY, Nov. 24 — Dutch Bulbs, Roses, Fruit Trees, Border Plants, &c., at Stevens' Rooms. Clearance of Glass Erections, at the Merton Abbey Nurseries, Merton, by Protheroe & Morris. Nursery Stock, at the Cookbridge Nurseries, near Lewes, by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.

TUESDAY, Nov. 25 — Lilies, and other Bulbs, at Protheroe & Morris' Rooms. Nursery Stock, at Leamington, by Protheroe & Morris (two days).

WEDNESDAY, Nov. 26 — Dutch Bulbs, Fruit Trees, Roses, &c., at Stevens' Rooms. Plants, Bulbs, Tuberoses, &c., at Protheroe & Morris' Rooms.

THURSDAY, Nov. 27 — Importations from Japan, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, Nov. 28 — Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Nov. 29 — Dutch Bulbs, Roses, Fruit Trees, Border Plants, &c., at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—41°.5.

Shirley Hibberd.

THE second celebration of the Chrysanthemum centenary has been marked by two circumstances which will cast a gloom over the National Chrysanthemum Society for many a day. Mainly through the energy and organizing faculty of WILLIAM HOLMES, the Society developed from a small local into a large National Society. The Centenary Exhibition and Conference at the Aquarium were naturally the object of the greatest interest to him, but he was not permitted to witness their success, and died a few weeks since. Even more startling to horticulturists in general is the loss of SHIRLEY HIBBERD, who was in his sixty-sixth year. It is, we fear, but too probable that he fell a victim to his own zeal, and that had he spared himself the labours connected with that exhibition and Conference, or had he even confined himself to his journalistic duties, which at such times are heavy enough for any man, be his strength what it may, he might still have been among us. It appears that he was far from well when, putting zeal and sense of duty before discretion, he fulfilled his allotted task at the Chrysanthemum Conference. This was held in a temporary unheated iron building attached to the Aquarium, and of the inconveniences of which complaint was general. On Wednesday he attended to his editorial duties, and on the following day, Thursday, he conceived it his duty to attend the dinner, where he made one of his characteristic speeches, but with a notable deficiency of that *verve* which usually distinguished him on such occasions. He returned home never to quit his bed, and died at Kew on Sunday morning. Thus ended the career of a notable man, one whose character may, perhaps, be best expressed by the word picturesque. A pleasant writer and fluent speaker, his style often deeply tinged with poetry, permeated with paradox, and not seldom with humour, he was always to the fore when anything had to be done. The advancement of florists' flowers, the promotion of exhibitions and conferences, the advocacy of works of charity, the helping forward of social objects—indeed of anything and everything pertaining to horticulture. These were the objects for which he seemed to live, and these, we grieve to have to write it, were the objects for which he ultimately sacrificed his life. Those who knew him superficially only, were apt not to take him seriously; but those who had the means of knowing what he did, as well as what he said, will testify that no more earnest worker existed among the horticultural community than SHIRLEY HIBBERD. Some few years since, we had occasion to speak of our friend in terms that appear to us to be as applicable now as they were at the time they were written, and from which we make the following extracts:—

The general public knows SHIRLEY HIBBERD best as an accomplished writer, whose rapid pen is ever dipped in the most flowing ink. His restless zeal is aptly reflected in his fluent style of writing, always permeated by a dash of humour, not unfrequently by a pinch of good-humoured satire, and occasionally softened by pathos, which excites in others the sympathy he feels himself. His public utterances are of the same genial, unconventional character; the fluency of his pen is only equalled by his eloquence and wit as an orator. What he writes and what he says attract attention by their originality. They take reader and listener alike by surprise, and the sound sense underlying is apt at first to be overlooked in the startling effect produced by his eloquence. He indulges in paradox as well as in parable, but at the same time he preaches by practice as well as by precept. He is no mere scribe, dashing off brilliant articles at the desk, but what he says and what he writes is based upon long experience and constant practice. His practical turn is shown not only in his experimental cultures carried on in his suburban retreat, but also in his ever-ready help on all occasions in which the progress of horticulture or the welfare of any of its followers are concerned. We may not always agree with his precepts or his practice—that is no matter—we can always respect his motives, and envy his zeal and industry.

SHIRLEY HIBBERD was the son of "an Old Salt" who served under NELSON in the fighting days when "wooden walls" were more talked of than now. He was born in the then rural village of Stepney in the year 1825, and at an early age entered a bookseller's house, which occupation he soon changed for that of a bookbinder, and eventually took up the life of a journalist; and at the early age of twenty-five years he was the editor of a weekly newspaper and the author of a budget of essays called *Brambles and Bay Leaves*, in which rural subjects were treated from the sentimental point of view. His love of the country, and early attachment to rural pursuits, coloured his labours and tastes from the first. He also in his younger days acted as a popular lecturer. Having pitched his tent in Pentonville, and having a wife who shared his sympathies, he undertook many experiments to determine the true principles of what may be termed urban horticulture. One of the results of the "observation of Nature" in the midst of houses was the *Town Garden*, the first edition of which was published in 1855, and which has been many times reprinted. This work gave a distinct impetus to the cultivation of "country life in town."

Having shifted his quarters to the classic land of Stoke Newington, he was enabled, having space at command, to enter into experimental horticulture on a scale sufficient to ensure useful results. He developed the "plunging system" of garden decoration which was so admirably carried out during some twelve years at Lordship Terrace. This system provides for a limited area a brilliant display the whole year round, the plants for the purpose being all grown in pots, and plunged in groups as needful, being removed and replaced by others from time to time. The severe tax on the resources of the garden to keep this system in action for the dressing of a garden laid out expressly for the purpose, led to the getting together of collections of Ivies, Hollies, and whatever could be turned to account for pot-culture during the winter.

While residing in Stoke Newington, Mr. HIBBERD started a number of gardens. On the spot where Park Street shows its Gothic villas, he had a trial ground for Potatos, Peas, and other useful subjects, and it was here that, after five years' systematic crossing and selecting, that he raised that best thing of its class—Hibberd's Prolific Vegetable Marrow. Another of his gardens, devoted to fruit culture, was on the land subsequently occupied by Mr. OUBRIDGE'S nurseries. Here various systems of grafting, training, pruning, and the like were carried on, and observations were made tending to the doctrines on fruit culture that were expounded in a lecture before the Society of Arts in 1876, but which did not find favour with some of the practicals. At the same time, he entered into the pretty pastime of raising zonal Pelargoniums, and contributed his share towards the improvement of the race, especially in breadth of petals. It is the fate of such work to pass away when a general advance of the standard of merit has been accomplished; hence we do not now find many of Mr. HIBBERD'S seedlings in cultivation. But perhaps the most important work carried on at Stoke Newington was the Rose growing, which was very systematically carried on for testing methods of procedure, and determining the relative merits of classes and varieties. The results of these labours were embodied in the *Rose Book*, published in 1864, and from time to time republished, with occasional revisions by the author.

The rapid spread of buidings drove Mr. HIBBERD from his comfortable nest, and he pitched his tent in another rural spot, hidden away between Tottenham and Muswell Hill, where, with a private road only to give access to the happy vale, and with woodland and water scenery, some useful gardens were formed for experimental purposes. One of these, devoted to fruit culture, furnished the model trees that were employed to illustrate the lecture referred to above. On a trial ground, devoted to roots and vegetables, all the more important varieties of Potatos, Peas, Onions, Beets, &c., have been "passed through the sieve," and were duly reported on, and it was here that the famous Magnum Bonum and other sorts that perhaps deserve to be equally famous were "discovered," for the advantage of the raisers, the traders, and the general public.

Amongst other labours of our friend, we must mention his series of works for amateurs on the Flower Garden, the Greenhouse, the Kitchen Garden, the Rose, &c. His treatise on Watercress Culture is remarkable, not only for its novelty and utility, but for its literary style, and for the vein of pathos that runs through certain parts of it. His illustrated work on Beautiful-leaved Plants appeared in 1870, and his monograph on the Ivy in 1872, the material for which was worked up in his garden at Brownswood Park. Some other works we pass over, for it is impossible in a brief sketch to record all the doings of a restless spirit.

It was, we believe, in January, 1858, that Mr. Hibberd first appeared as the Editor of a horticultural paper. The *Floral World*, which then made its appearance, very quickly attained to a circulation until then scarcely heard of, for a work of that class. From this he retired in 1875. His connection with the *Gardeners' Magazine* dates from August 12,





THE CHILE PINE · ARAUCARIA IMBRICATA.

1861; that, under his management, the paper has advanced in usefulness and popularity needs not to be told.

It should not be forgotten that Mr. Hibberd was a frequent contributor to these pages on a variety of subjects, but always such as are known to be his own. A paper of his appeared on October 29, 1859, on growing Tomatos in pots. It was, we believe, the first published paper on the subject; at all events, it is interesting to note that his notions on Tomato culture were in their way very prophetic.

Of late years, Mr. Hibberd, who had previously identified himself mainly with local exhibitions and special Societies, became an active member of the Royal Horticultural Society, taking part in the work of its committees and conferences, as well as in the direction of the work at Chiswick. He lived for horticulture, and in a very special and lamentable way he has died for it.

The funeral service will be read in part at All Saints Church, Green Lanes, Stoke Newington, on Saturday, at 2 p.m.; and the interment will take place the same day at Abney Park Cemetery about 3 p.m.

Fruit Culture.—On Monday last the Master (Sir James Whitehead), the Wardens and Court of the Fruiterers' Company, and others interested in the culture of British fruit, including Mr. A. H. Smee, Mr. G. Bunyard, Mr. J. Cheal, and Mr. T. F. Rivers, had an interview with the Lord Mayor at the Mansion House, to seek his aid in a project which they have in view on that subject. Sir James Whitehead, addressing the Lord Mayor, said that, having regard to the great success which had attended the recent exhibition of fruit at Guildhall, the Fruiterers' Company were now proposing to increase their operations in the same direction. Their idea was to have fruit shows in different parts of the country, similar to the annual shows of the Royal Agricultural Society of England, in co-operation with the local horticultural societies. During these shows there would be lectures on various subjects connected with the cultivation of fruit. It would be the aim of the Company to give the warmest encouragement to the various horticultural societies, and to stir up a spirit of emulation among the local and parochial organizations. The company had arranged that the committee of experts who recently assisted them in connection with the Guildhall exhibition should meet once a month, and receive and answer questions on the subject of fruit culture. It was estimated that to carry out these objects, a fund of about £20,000 would be necessary. It was believed that landed proprietors and the City companies would be willing to aid this effort, and they might even obtain the assistance of a Government grant. What they asked the Lord Mayor to do was, first, to allow a great public meeting to be held at the Mansion House, and, secondly, to organise a Mansion-house Fund, with the view of raising the necessary sum. The Lord Mayor said he had listened with great interest to what the Master of the Fruiterers' Company had said. The subject was one with which he, as himself a fruit grower in a small way, had been acquainted for many years. There was no doubt that those who practised fruit culture in England had to contend with many difficulties, such as the variable nature of the climate, the diversities of soil, and the general ignorance which prevailed in the matter. It was no wonder that the results attained were so divergent. Personally, he regretted that the idea of Mr. Jesse Collings, M.P., to devote half an acre in the vicinity of every elementary school in rural districts for the purposes of agricultural education had not been carried into effect, but he rejoiced that, thanks mainly to the persuasion of Sir James Whitehead, the Government had introduced the subject of agricultural education into their new Code. He would have pleasure in convening and presiding over such a meeting as was suggested, and he would reserve until then his decision as to raising a Mansion-house Fund.

Señor Triana.—We greatly regret to have to announce the decease at Paris, in his sixty-third year, of this distinguished botanist. He was a native of the United States of Colombia, and during ten years formed part of a surveying expedition in that country. At the expiration of that time he visited Kew for the purpose of elaborating his monograph of the Melastomaceæ, and subsequently betook himself to Paris, where he laboured in company with the late Professor Planchon in the publication of a Flora of New Grenada. Unfortunately, from lack of support, this remains incomplete. There is, probably, no Flora more interesting to horticulturists, so that it is a matter of great regret that it should have been left incomplete. For the last few years Señor Triana acted as Consul General for Colombia in Paris.

Stock-taking: October.—Naturally enough, considering the apprehension as to the immediate effects of the McKinley Tariff on British commerce, the "Trade and Navigation returns" for the past month were awaited with some degree of impatience; whilst some were deeply concerned in ascertaining or anticipating the actual loss to manufacturers and merchants here, others were busily engaged incalculating the chances on new fields, and some have seriously taken in hand the actual "prospecting" of new ground—new to-day, old thousands of years ago, even Asia Minor. We have heard, are hearing, and shall have still more to hear and learn in the future concerning *Darkest Africa*—of dark Asia Minor one might very soon learn a great deal and profit much by turning on British capital as one would the waters of irrigation—that the desert there may be made to blossom as the Rose, making us more and more independent of unholy "rings," crushing barbarism, and extending the blessings of civilisation over millions of acres of eastern land. These considerations will have to be taken into account by those who have blundered commercially in the far west; for there can be no doubt that, given a promising field for capital, there it will go for investment; the multiplication of these will tend to preserve a tariff equilibrium beyond the tampering power of political parties. This aside for the moment. As was to be expected, the imports for the past month show a falling off, the exact figures are £484,378. Truly not a very heavy decrease, but, added to the decrease of the previous eight months brings the total for the ten months up to £3,951,469. It is noteworthy that the decrease in the imports for the past month extend over seven of the nine sections into which the returns are divided; so that whatever the effect may be, it is very widely dispersed. The extracts from the summary of imports from foreign countries and British counties usually given by us, read as follows for the month of October:—

	1889.	1890.	Difference.
	£.	£.	£.
Total value of imports	38,230,614	37,746,236	—484,378
§II.—(A.) Articles of food and drink—duty free	11,663,979	12,440,183	+776,204
(B.) — do., dutiable	3,232,272	3,105,302	—126,970
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	6,773,803	6,997,451	+223,648
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,735,798	4,105,988	—629,810
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,352,033	1,334,166	—17,867
(B.)—Parcel Post ...	35,448	56,438	+20,990

A few words on the export trade may not be out of place. The figures for the month show an increase of £592,234 over the corresponding period last year; the returns for the ten months show a gain of £15,425,488 over the same period last year. These exports are of British and Irish manufactures. The exports of foreign and colonial produce for the month show a decrease of £391,706, as compared with October, 1889; but the ten months show an improvement of £555,088. On the whole, the position is better than some would have had us believe—before the event. The following are our usual excerpts relating to the importations of fruits and vegetables:—

	1889.	1890.	Difference
§ II. Fruit:—			
Apples, raw ... ... bush.	684,812	586,832	—97,980
Unenumerated, raw ... ,,	409,638	686,262	+276,624
Onions ... ... ,,	525,608	514,681	—10,927
Potatos ... ... cwt.	17,694	55,938	+38,244
Vegetables, raw, unenumerated ... ... Value	£19,758	£30,191	+£10,433

These figures require no comment—every month they read their own lesson.

The "Cercle van Houtte" of Ghent will hold, in the month of August of next year, an horticultural exhibition, which will no doubt draw a number of visitors. The occasion is to celebrate the memory of Louis van Houtte, of such respected relations in the world of horticulture.

Tree Planting.—At a meeting of the Vestry of St. Marylebone on the 30th ult., a further communication was received from the Metropolitan Public Gardens Association as to their offer to contribute conditionally the sum of £100 towards the expense of planting trees in the thoroughfares of the parish. Mr. Harris, as Chairman of the Works Committee, recommended that the offer be again declined. The trees, he said, would cost between £4 and £5 each, and how many, he asked, would they get for £100? He quite agreed that Portland Place would make a splendid boulevard if planted with trees, but thought the Association should do the work themselves. Mr. Lewis contended that the ratepayers should be consulted on the question; and Mr. Emery said that planting trees meant shutting out air, light, and sunshine. After some further discussion, the debate was adjourned.

The Gardeners' Orphan Fund.—A concert held last week at Leighton Buzzard in aid of this fund, resulted in a balance of £10.

The late Mr. Shirley Hibberd.—We have received the following suggestions from a correspondent, who writes:—"I trust that all suggestions as to a memorial to Mr. Hibberd will be made subsidiary to the action of the Royal Horticultural Society, the leading horticultural society of the empire, and with which Mr. Hibberd had so long been, not merely intimately, but influentially connected. It is to me so obvious that the Royal Horticultural Society should be the promoter of any proposal in relation to a memorial, that it is earnestly to be hoped no time will be lost in announcing the intention of the Council to summon a meeting of horticulturists for the purpose of giving effect to some fitting and tangible proposal; that a committee representative of every body of a horticultural nature with which Mr. Hibberd was associated will be formed, and that a memorial worthy of so able and so enthusiastic a horticulturist will be raised. Probably the Council will be unable to convene the meeting earlier than the 9th proximo. Well, it will be in good time, as ere then some suitable proposals may be formulated, which will admit of discussion and perhaps of ready adoption. To suit the late Mr. Hibberd's case they should be broad and large hearted. Should the meeting be held, as I can hardly doubt will be the case, I trust

the whole of those present will first be invited to express their sense of the loss horticulture has sustained through the untimely death of Mr. Hibberd." That the attendance would be large may be assured. Whether the Council carry out this suggestion or not, the meeting on the 9th proximo would be a very suitable occasion to discuss the matter.

"Kew Bulletin."—The October number contains articles on an edible fungus from New Zealand, Hirneola polytricha, which is nearly allied to our common Jew's-ear fungus. It appears that this is in great demand in China, although the analysis, as given by Professor Church, seems to show that its nutritive qualities are feeble, and that unlike most fungi hitherto analysed, it is very deficient in albuminoids or flesh-forming matters. The preparation of Mexican or Istle fibre from Agave heteracantha, is described; the fibre being largely made use of for cheap scrubbing-brushes. The ravages of the moths known as the "Nonnen" (Liparis monacha), in the Bavarian forests, are detailed. It appears, that in Bavaria alone the loss to the forest revenue will amount for the year to something like £40,000. Okro fibre, from Hibiscus esculentus, and Cocoa-nut butter (not to be confounded with Cocoa-butter), receive attention. If this tasteless, fatty substance, can be prepared as suggested from the copra or dried Cocoa-nuts of commerce, the supply of material would be almost unlimited. Medical evidence goes to show that the fat in question meets all hygienic requirements, and is "far superior to animal fat and butter, as well as any of their other substitutes."

—— The November part contains an article on the Liberian Coffee, introduced to Kew in 1872, and distributed into commerce by Mr. Bull shortly afterwards. On July 22, 1876, p. 104, Mr. Hiern favoured us with an article on the subject, to accompany a woodcut illustration taken partly from a plant in Mr. Bull's nursery, partly from wild specimens. It was hoped that the West African Coffee would prove more robust, and better able to withstand the attacks of fungus (Hemileia). At first, however, these expectations seemed likely to be disappointed, but now we learn the tide of opinion in the planting world has set in favouring the Liberian Coffee, and various extracts in support of that opinion are given in the number before us. The African Cola-nut (Cola acuminata) is the subject of the next article, which comprises a brief summary of what is known on the natural history and properties of this valuable tree. The nuts contain caffein and theobromine, and their consumption is stated, on good authority, to enable the natives to undergo great exertions with relatively little fatigue. The bitter Cola, also alluded to in the *Bulletin*, is quite a different thing. A figure of the fruit was given in the *Journal of Botany* for 1875, by Dr. Masters, and the plant was subsequently described under the name Garcinia Kola by Heckel, who had overlooked what had been previously published. The fruits in question have a bitter taste, and are probably destitute of the special virtues of the true Cola.

Royal Agricultural Benevolent Institution.—We learn from the Secretary of the above, that the Mercers' Company has just voted a donation of £210 towards the funds of the Royal Agricultural Benevolent Institution.

The Holmes Memorial Fund.—A Floral Fete and Bazaar.—The Directors of the Royal Aquarium have generously proposed to give a special benefit in aid of the above Fund; it is proposed also to have a Floral Fête and Bazaar, the proceeds of which are to be devoted to the same object. A meeting of the committee will be held in the Board Room at the Aquarium to-day (Thursday), November 20, at 5 p.m., when it is hoped there will be a good attendance of all interested in the matter, so that arrangements can be at once made to carry the proposal into effect. Members of the National Chrysanthemum Society will be admitted on production of their passes at the staff entrance. Suggestions from those who cannot attend may be sent to the Hon. Secretary, Mr. Lewis Castle, Hotham House, Merton, Surrey.

Tulipa montana.—The Tulip is said by Dr. J. E. T. Aitchison in his *Notes on Products of Western Afghanistan and North-eastern Persia*, to be the common Tulip of these districts, and in spring to characterise the stony arid plains by the brilliancy of its inflorescence, varying in colour from a deep red to pure yellow. The bulbs are collected and eaten, and what are believed to be these bulbs, from a specimen lot at present in the Kew Museum, when deprived of their external coats are passed off for and sold under the name of salep at Bombay. Tulipa humilis, which is not uncommon, occurs in great beds, resembling in appearance our English wood Anemone, and was considered as such by several of those who accompanied the mission (!).

Eremurus aurantiacus.—The young leaves of this species, says Dr. J. E. T. Aitchison, in his *Products of Western Afghanistan and North-Eastern Persia*, and probably those of Eremurus Olgæ, are eaten as a vegetable in a cooked state, by the natives, both in this district, as well as in the Kuram Valley of Afghanistan. The doctor and his friends found it a really good and well-flavoured vegetable, well worth the attention of the market gardener in England. As vegetable the plant would grow well, inasmuch as a the leaves are cut over, without injuring the growing axis of the plant, which would last for several years.

West Indies.—The third Report of the Committee appointed by the British Association, and consisting of Professor Flower (Chairman), Mr. D. Morris (Secretary), Mr. Carruthers, Dr. Sclater, Mr. Thiselton Dyer, Dr. Sharp, Mr. F. Du Cane Godman, Professor Newton, Dr. Günther, and Colonel Feilden, appointed for the purpose of reporting on the present state of our knowledge of the zoology and botany of the West India Islands, and of taking steps to investigate ascertained deficiencies in the fauna and flora, has been issued. During the past year chief attention has been directed to the exploration of the island of St. Vincent, and two collectors have been maintained in that island at the expense of Mr. F. Du Cane Godman. The plants have been determined at the Herbarium of the Royal Gardens, Kew, and are nearly completed to date. It is proposed by the committee to accept the services of Mr. R. V. Sherring, F.L.S., to make collections in botany in the island of Grenada during the coming winter. Mr. Sherring is well acquainted with the West Indies, and has already made collections there, and added several new species of Ferns to the flora of Jamaica. A small collection of plants, numbering 143 specimens, was received from Mr. J. J. Walsh, R.N., this collection included plants from Dominica, St. Martin's, St. Eustatius, St. Kitts, St. Lucia, and Grenada. Most of the plants consisted of common West Indian species, presumably such as would be met with in the more accessible spots in the various places visited. The remainder of the plants collected by Mr. Ramage, at St. Lucia, have been determined. Of eighty-four species sent, sixty-two have been fully determined. The others include several that are apparently new. They are wholly woody or forest plants. Three collections have been received from St. Vincent through Mr. Godman, viz., in September, 1889, and March and August, 1890. The first collection has been determined at Kew by Mr. Rolfe as far as the end of the Polypetalæ. The great bulk consisting of widely diffused West Indian plants; 128, or more than half, appear to have been recorded from the island before. The second collection from St. Vincent consisted for the most part of Ferns. Mr. J. G. Baker has fully worked out these. They include 133 species and well-marked varieties, three of which are new. The specimens are in excellent state of preservation, and it is probable that we have amongst them nearly all the Fern flora of the island, both of the mountains and the lowlands.

Prague.—We regret to learn that the botanic garden in this city under the direction of Professor Willkomm, has suffered severely from floods. For four days the garden was covered with 7 feet of water.

M. de Tchihatchef.—We recently recorded the decease of this distinguished traveller and naturalist. We have now to add that, by his will he leaves 100,000 francs (= £4000) to the Academy of Sciences in Paris, to be expended by them in promoting scientific exploration in the less known parts of Asia.

The Gardeners Royal Benevolent Institution.—A concert was given in the Town Hall, Downham, Norfolk, on Thursday evening, the 13th inst., in aid of this Institution, at which there was a crowded audience, and the balance, a sum of £6 10s., was forwarded to the Treasurer.

"The True Grasses."—Under this title, Mr. F. Lamson-Scribner and Miss Effie A. Southworth have published a translation of Professor Hackel's monograph of grasses in Engler and Prantl's *Natürlichen Familien* (Holt & Co., New York, or Williams & Norgate, Henrietta Street, Covent Garden). It forms a small octavo volume, illustrated with numerous woodcuts, and provided with a copious index. The work will be valuable to all who are studying the grasses.

Structure in Relation to Climate.—M. Lothelier records in the *Bulletin* of the Botanical Society of France, the results of his experiments for ascertaining the conditions under which spines and thorns are produced. For this purpose he grew young plants of Berberis and of Cratægus in dry air, and others in moist air, other conditions being equal. The result was, that dry air was found to hasten and promote the production of spines, and moist air to retard it. The hard, skeleton tissues of a plant are developed at the expense of the soft in dry air, while the contrary takes place in moist air.

An Indian Appeal for Protection.—A pleasant, but rather pathetic, incident that occurred during the meeting of the Forestry Association at Quebec was the visit of the old Huron Chief Sioui and his son, in full Indian dress. He was introduced by President Joly, and made the following address:—"We are the children of the forest, come to welcome the friends of the forest. I wish you, for my people, joy and success in your good work. When I was a child, I lived in the forest; I have always lived in the forest, and I wish to die there My people are few in number; we are dying away with our home, the forest. Protect us and our home, and you will have the prayers of the Hurons and the gratitude of their hearts." *Garden and Forest.*

Californian Laurel.—This Californian shrub or tree is now known as Umbellularia californica, but for garden purposes it might retain the name of Laurus californica. The leaves are like those of the common Bay, but narrower, and with a powerful scent. It is half-hardy in the midlands, but at Appley Towers, Isle of Wight, it forms a large bush. At Kew, it grows against a wall.

Narcissus Tazetta.—"The bulbs of this plant," writes Dr. Aitchison, in his *Notes on Products of Western Afghanistan and North-eastern Persia*, "were obtained by me at Bala-morghab in the winter of 1884, and sent to Kew on January 18, 1885. They flowered at Kew during 1887, producing a double crown; this is worthy of notice, as the bulbs were those of indigenous plants, and not collected anywhere near where they could have been from cultivation. During the summer I did not meet with the plant, and therefore had no specimens of it in my herbarium."

Rooks.—We read in the *Isle of Wight County Press* of November 8, that Mr. J. W. Kelleway, of Merston Cottage, says that there may now be seen at his place a rook, with a nest of young. For this time of the year this is a most unusual occurrence.

Does the Pollen influence the Fruit?—This question is frequently raised. By some it is asserted that the pollen has a direct effect upon the ovary to which it is applied. Others, the vast majority, assert that the influence of the pollen is confined to the ovules, and makes itself manifest not in the mother plant but in the progeny. The latest experimenter in this direction is Mr. A. Crozier, who tells us in *Agricultural Science*, that he made numerous comparative experiments with Strawberries, from which he concludes "that no appreciable influence is exerted upon the character of the fruit by foreign pollen."

Charcoal for Orchid Potting. — The *Journal des Orchidées* has collected the opinions of its readers on the advantages or otherwise of employing charcoal in potting Orchids. The general result arrived at is one unfavourable to the use of charcoal. The charcoal absorbs moisture, and facilitates the decomposition of the sphagnum, and even leads to the rotting of the roots. This is a question, however, that requires more searching comparative experiments than have yet been made. We require to know all the other circumstances of the case, and to know, also, how and in what quantities the charcoal is used.

Birmingham Gardeners' Association.—At a recent meeting of this body, Mr. E. Burberry, the Orchid grower at Mr. Joseph Chamberlain's, Highbury, read an interesting cultural paper on "Masdevallias and Disas," showing how easily these plants are cultivated under proper conditions, and how richly they deserve general cultivation.

"Stephens' Book of the Farm." — This divisional volume carries to a completion the routine of farm-work for the year, and is practically a new volume. It finishes summer work, and not only deals with the whole of the operations of the autumn, but also discusses several of the subjects to be embraced in the closing division, entitled "Realisation." The chapters on "Haymaking" and "Bare Fallow" have been entirely rewritten, the former subject being dealt with very minutely and exhaustively. The "Grain Harvest" forms a large chapter, consisting for the most part of new matter, and including a full and interesting history of the reaping-machine. Then follows the chapter on "Raising Potatos," also almost entirely rewritten, and thoroughly practical. The sowing of cereals in the autumn is briefly discussed. There is a short chapter on "Birds Destructive to Corn Crops." A suggestive chapter deals with "Subsidiary Farm Crops"—that is, with such vegetable and fruit crops as may be grown with advantage on farms, especially those in Scotland. An excellent chapter on "Bee-keeping," written for this volume by that eminent authority, the late Mr. William Raitt, Beecroft, Blairgowrie, forms in itself a complete handbook to the management of bees throughout the entire year. There is a concise and practical chapter on the important subject of "Rotation of Crops," followed by others on the "Physical Geography of Farms," "Judging Land," "Estimating Rent," "Offering for a Farm," "Conditions of Lease," and lastly on "Draining Land." This last chapter, indeed, is one of the chief features of the volume. It has been entirely rewritten, and is freely illustrated, the various methods of draining being clearly and minutely described. The table of contents is so well done that this handy book of reference should be on the shelves of every cultivator of the land.

Potato Scab.—Mr. H. L. Bolley, in the September and October number of the American journal entitled *Agricultural Science*, gives the result of an elaborate investigation into the nature of Potato scab, which he traces to the action of a bacterium, which acts locally, and is not the result of a generally diseased condition. Mr. Bolley's researches were directed to the discovery of the true nature of the disease, but he concludes that the indications are very favourable to the belief that results of financial value to the Potato grower will be attained to.

"The Illustrated London Almanac for 1891."—This deserves notice for the elegance of its drawings of flowers, the colouring of which, however, is not so accurate as it might be. A feature of the Almanac is a series of small illustrations, together with a brief account of the friends and foes of the gardener and farmer. A vast amount of miscellaneous information is comprised in this publication.

Palermo.—Professor Baron Todaro has recently published another instalment of his *Hortus Botanicus Panormitanus*, a folio publication, in which he from time to time describes and illustrates the more remarkable plants in the garden under his direction. The plants figured and described in the seventh fascicle are Aloe cernua, Todaro, from Madagascar—a remarkably distinct species, A. Lanzæ, and Agave macroculmis.

Spinach.—In New Jersey, Spinach is largely grown for market, but last year the crop was more or less a failure, owing to the attacks of Spinach mildew (Peronospora effusa), allied to the Potato blight. Another fungus, producing what is called Anthracnose (Colletotrichum spinaciæ), of which little is known); while "leaf-blight," in which little pimples are formed on the surface of the leaf, is due to the attacks of Phyllosticta chenopodii; White Smut is the work of Entyloma Ellisii, Black Smut that of Cladosporium macrocarpum. These fungi are described and illustrated by Mr. Byron D. Halsted, of the New Jersey Agricultural College Experiment Station in a recent *Bulletin* (July, 1890). Beyond the destruction of affected leaves by fire, little can be done, but the application of flowers-of-sulphur is recommended, and careful spraying with sulphide of potassium, or sulphate of copper, when the plants are young, might be tried, but obviously much care would be needed to prevent accident.

Potato Disease.—Time was when it seemed as if we had no means of arresting or mitigating this plague. But now we know that by proper modes of planting, adequate moulding, the selection of suitable kinds, or the use of sulphate of copper solutions, we have the means of controlling the disease to a large extent. But although each of these methods has been made known widely, very few have availed themselves of them. They are specially suited for the cottager, the allotment gardener, and the cultivator on a small scale, and it is disappointing to see no effort at all made to mitigate the pest. What is still more disheartening is to witness the utter apathy with which even intelligent cultivators allow the disease to be propagated wholesale by their carelessness and their almost incredible negligence, which ensure the best possible means of facilitating the growth and dispersion of the fungus.

The Use of the Petals, &c.—M. Curtel has lately published the results of some experiments on the functions performed by the sepals and petals respectively. He considers that the notion that the coloration and fragrance of flowers attracts insects, which in their visits to the flowers effect cross-fertilisation, has been much exaggerated. M. Curtel shows that the flower possesses the respiratory and transpiratory functions, so that it breathes and transpires more energetically than leaves of equal area, at least when exposed to diffused light. Assimilation (the special function of leaves) is masked by the superior intensity of the breathing process. The relation of the volume of carbonic acid exhaled, to that of oxygen inhaled, is always feeble. In consequence, energetic oxidation goes on in the outer covering of the flower, and thus the formation of the products necessary for the development of the fruit is facilitated.

Publications Received.—*The True Grasses*, By Edward Hackel. Translated by F. Lamson-Scribner and Effie A. Southworth (New York, Henry Holt & Co.).—*The Trees of North-Eastern America*. By T. S. Newhall (New York and London: G. P. Putnam's Sons). — *Zimmergärtnerei*. By M. Lebl. (Leipzig: J. J. Weber). — *National Chrysanthemum Society's Official Catalogue*, Centenary Edition. (London: E. W. Allen, 4, Ave Maria Lane; R Dean, Frampton Park Nurseries, Hackney and C. Harman Payne, 60, Thorne Road, S.W.).

Home Correspondence.

Phylloxera.—Will any of your readers who have had experience with the Phylloxera on the Vine kindly state, through the medium of your columns, how the pest can be effectually exterminated? I for one have reason to doubt the efficacy of the cold-water cure. On my taking charge of the gardens here ten years ago, I found all the Vines literally swarming with the Phylloxera. Previously I had no actual experience with the insect, but I was fully aware that, in order to get rid of the plague, no half-measures would avail. Accordingly, the whole lot of Vines was eradicated and burned, every particle of the soil of the borders which are entirely inside cleared out; the border walls thoroughly washed and plastered with fresh lime, likewise all the woodwork cleaned and painted. This was done in the autumn, and in the spring the borders were remade with new soil, &c., young Vines obtained and planted, and all seemed to be doing well for three years, when the Phylloxera again made its appearance. Almost in despair, we again rooted out the Vines, cleaned out the borders, &c., and left the houses vacant for two years. Then, acting on the advice of a correspondent in one of your contemporaries, we adopted water-tight tank borders, which were again made up in the usual way, fresh Vines procured, and every precaution taken to assure them being clean and healthy. The borders were regularly flooded to a depth of 4 to 6 inches above the soil for a period of between two and three weeks every spring and autumn. Notwithstanding these submersions, the Phylloxera again showed itself last year in a late house, but, judging from the appearance of some of the Vines and their roots, the pest must have been making headway for some time before, although hitherto I had been unable to detect the insect itself. We again referred the subject of tank borders to the readers of your contemporary, and we were informed through that organ that "There is no earthly use in flooding the borders when the Phylloxera is hybernating, as at that time nothing short of cremation, or immersion in boiling water or brine will annihilate them. Submerging the roots in July and August for three or four days together will destroy the young and fully-grown insects thereon, and if the application be repeated a week later, it will destroy those insects which acquired life and form after the first submersion." Persuaded that we had now got the right clue, we resorted to flooding in July and August, as indicated, except that the borders were submerged for six days on each occasion, instead of "three or four days;" and also, by way of precaution, if erring, to err on the right side. The spring and autumn floodings were continued as before. This procedure, I presume, ought to satisfy every advocate of the drowning process of annihilation that not a single insect could possibly exist after a year's combat in such a fashion; yet, on recently examining the roots of some of the Vines in the late-house already alluded to, I have found the Phylloxera in legions, alive, and actively pursuing their work of destruction. I reckon this conclusive proof that submersion, so far, is practically a failure. I do not mean to maintain that the Phylloxera is amphibious—it may, or may not be; but being embedded below the bark, it may probably remain secure from the direct action of the water for an indefinite time. The Vines in other two earlier houses which were planted at the same time as the late house, and under the same conditions, are, so far as I can discern, at present quite healthy. But supposing these two houses to be perfectly clean and free from the pest (which is doubtful) can the cause be assigned to the flooding? No, certainly not, as all three houses have been all along subjected to precisely the same treatment, and

if the water should be the destructive or preventive agent in one house, why not in the other? From my experience with Vines known to be affected with Phylloxera, I question to what extent flooding the borders may even check its progress. Perhaps some person qualified by better experience may be able to impart some light on the subject. *A. Grant, Arisaig House, Fort William.*

TREE AND SHRUB PLANTING IN TOWNS.—For the last twenty years I have taken an interest in studying what kinds of trees and shrubs thrive best in the towns of this smoky district—the Potteries, and have found the following to be the best, viz, Aria theophrasta (?), Sorbus vestita, English grafted Elm, Sycamore, Paul's crimson Thorn, Lime, Ontario Poplar, Purple Beech, Golden Elder, and Gueldres Rose. Hollies, especially Hodgin's, and other broad and smooth-leaved varieties, Aucuba japonica, Laurels (latifolia and colchica are the best); Rhododendrons — Cunningham's White, Caucasian, and hybrid ponticums are far better than the common ponticum, as they have hardier constitutional vigour. There is no evergreen shrub that does better in this district than Cunningham's White Rhododendron, as it grows into fine bushes, and flowers freely. Ligustrum ovalifolium also grows into fine bushes, if trained so. The best wall plants are Weigelias, Pyrus japonica, Ivies, and Virginian Creepers. I endorse the opinion of Mr. Hudson respecting the selection of trees and shrubs for town planting from nurseries of high altitudes, and care should be taken to get them from stocks (trees particularly) that have been frequently transplanted. I may say that no kind of Conifer will grow here, and to plant Thuias, Cupressus, Piceas, Retinosporas, Thuiopsis, or Yews, is simply planting them to gradually die away. *J. Kent, Hanley.*

PLAGIANTHUS.—In your notice of Belgrove, Queenstown, p. 493, mention is made of P. Lyallii, which reminded me that these antipodean Mallowworts are not often met with in our English parks or shrubberies. However, it may be of interest, to state that recently we noted a good example of P. betulinus, in the garden of Charles Jenner, Esq., East Duddingstone Lodge, Joppa, Edinburgh. The plant is about 20 feet high, and evidently completely at home; the fact, that this garden is no great distance, from the shores of the Firth of Forth, may have something to do with the success of the tree here. Possibly, P. betulinus may not be considered quite so ornamental as P. Lyallii, but the interesting point about Plagianthus lies chiefly in the remarkable tenacity of their *liber* or fibrous inner bark. They are popularly known as ribbon, New Zealand cotton, or cordage trees, in allusion to the toughness of their fibre. Indeed, from the specimen under notice — we had no difficulty in casting a knot on the twigs of the branches — without their showing the least tendency to snap off. Should the species prove hardy generally, perhaps the time may not be far distant when this tree might largely supplant the use of so much tarred string in gardens, especially when we remember that one of the leading characteristics of the order Malvaceæ, to which Plagianthus belongs, is the tenacity of the bark. The much-esteemed and once-popular plant-tying material, called Cuba bast, is none other than the inner bark of the West Indian tree, Hibiscus elatus, whose use is now all but abandoned. The Cotton plant is also a member of this order, but Cotton is produced somewhat differently, it being simply the woolly packing surrounding the seeds in the fruit capsules of several species of Gosypium. Silk Cotton from Eriodendron, and a Hemp-like fibre from Althæa cannabina, all illustrate the fibrous nature of the order. There are many other interesting plants in the garden at East Duddingstone Lodge, the rock garden being specially interesting, containing, as it does, an exceedingly rich and rare collections of alpine plants, which here are represented in large masses, thus well illustrating their true character, which is so much more satisfactory than the mere sprig and label, which oftentimes represent this class of plants in gardens. *F. R.*

THE LATE MR. SHIRLEY HIBBERD.—We shall all be the poorer for the loss of this genial friend, and gifted comrade in the gentle art. Leaving to others to estimate or measure up, if they can, his distinguished services to horticulture, I would pay grateful tribute to his social and philanthropic labours on behalf of gardeners. To see, hear, converse with Shirley Hibberd, was like a draught of cold water to many hungry, thirsty, provincial gardeners. He had also in a special degree the rare merit of clothing the dry bones of horticultural theory and practice with an alluring dress and a cultured sweetness, that won and kept for him a wide circle of readers and hearers to the last. Peace be to his memory, and may his words and deeds live after him in a race of young botanists, gardeners, and writers, whose works shall show that they have sat at the feet and learned of Shirley Hibberd. *D. T. Fish, Nov.* 17.

NATIONAL CHRYSANTHEMUM SOCIETY. — I have received several responses to my letter inserted in your last issue in regard to altering the place of exhibition, and in favour of such alteration, and I shall be glad to receive further expression of opinion from the readers of the *Gardeners' Chronicle*, so as to enable me to fully place the matter before the managing committee. *James L. Wood, Wood Green, N.*

—— If the hearty co-operation all round of lovers and cultivators of the Chrysanthemum, and the presence of the general public in enormous numbers, can be accepted as evidence, then I am led to think, after the experience of the Centenary Show, there is very little expression indeed among the patrons of the Chrysanthemum in favour of obtaining a more fitting place than the Aquarium in which to hold the shows of the Society. I can truly say it does not reach the executive. Occasionally an individual, like Mr. James L. Wood, gives expression to an opposite opinion through the medium of the horticultural press, but it is of very rare occurrence. But supposing Mr. Wood's statement to be correct, will he be good enough to name any place so central, and so easily reached from all parts, to which the shows of the Society can be removed? It is so easy to criticise; but so difficult to suggest an alternative. Without the assistance of the handsome subsidy from the Royal Aquarium Company, and their hearty and generous co-operation in many ways, it would have been impossible for the National Chrysanthemum Society to have carried through the Centenary Exhibition in the successful manner they did. It is evident that association with the Royal Aquarium did not prevent ladies of high social position, like the Marchioness of Downshire, the Marchioness of Headfort, the Countess of Lytton, Lady Howard de Walden, and Lady Brooke, from giving it their patronage and support; nor such eminent men as the Duke of Westminster, the Earl of Lytton, Lord Ebury, Mr. Joseph Chamberlain, M.P., and others, most of whom contributed to the special prize fund. Lady Brooke had no hesitation in taking part in the opening ceremonial, and our genial Chairman, Lord Brooke, M.P., has never expressed the slightest objection to appearing there. Many hundreds of gardeners came from all parts to attend the Centenary Show, and they are found declaring that the life and warmth found within the building, its variety entertainments (!), and other sights are heartily appreciated by them, and that a day spent there on the occasion of a Flower Show constitutes a red-letter day in their lives. I confine myself to this point because the issue raised by Mr. Wood applies simply to what may be termed "the associations connected with the Aquarium," and not to its unsuitableness as a place of exhibition. I am glad to know that he liberally supported the Centenary scheme, and sent a very interesting exhibit also. I have heard a few—a very few exhibitors —express sentiments similar to Mr. Wood, but only let an opportunity occur of taking some prize-money in a competition there, and they are certain to compete. The National Chrysanthemum Society has the support of many of the leading nursery and seed firms, and the society owes them much. That the Royal Aquarium Society should have during the present year spent something like £1,600 on flower shows alone entitles it to the consideration of all who desire to see horticulture popularised, and I may state that a series of exhibitions similar to that just concluded is being arranged for 1891. Till Mr. Wood can name an alternative site equally central, convenient, and easy of access, and in conjunction with his friends raise a fund for the purposes of the society equal to the amount given annually by the Royal Aquarium Company, I think the committee will prefer their present location. *Richard Dean, Hon. Secretary.*

THE WEATHER DURING LAST OCTOBER AT BURY ST. EDMUNDS.—The weather during the early part of the month of October last, or till about the 15th, was a continuation of the remarkably fine weather which had been experienced during the whole of the previous month. On the 15th, rain to the amount of 0·31 inch fell, and the weather became much colder; and during several days high wind prevailed. In this neighbourhood snow fell slightly on the 26th, and throughout the month the wind, with few exceptions, blew daily from the N. and N.W. The highest temperature experienced during the month was 69° on the 5th, and the lowest 24° on the nights of the 12th and 27th. The rainfall of the month was 1·59 inches, and this fell during fourteen days, and it was 2·46 inches less than that of the corresponding month of 1889, and 1·35 inches under the average for the month of October for the last ten years. *P. G.*

EXHIBITING APPLES AND PEARS. — It seems strange that none of the exhibitors of Apples and Pears have called attention to the mistake that is committed in allowing these fruits, when grown under glass, to compete with those that are grown out-of-doors. This especially applies to Apples. I have not seen a schedule of the show lately held at the Guildhall, but evidently there was no rule which prohibited Apples produced under glass from being shown against those from outside, otherwise the judges would not have placed the culinary Apples from indoors before those grown outside. Apples, in common with most other fruits, can be grown larger in a house than in the open air, through the more humid atmosphere that can be kept up in a glass structure than it is possible to have outdoors. Through the influence of this, other things being equal, the fruit swells to a larger size. In addition to this, Apples grown under glass have a transparency of the skin, and are altogether more taking in appearance than outside fruit. The first object of all competitions of horticultural produce, and particularly such a one as that held in the Guildhall, should be educational, and carried out on lines that will show what can be done under legitimate conditions. The growth of Apples and Pears under glass can never be anything more than a passing episode in English gardening. At a time like the present, when those who take an interest in hardy fruit culture from a profitable point of view, get up an exhibition like that just held with the object of promoting and exemplifying what can be done under high cultivation, I hold that the competition should be confined to outdoor grown fruit alone, so far as Apples and Pears are concerned, for it is only these that can ever increase the supply to any appreciable extent. *T. Baines.*

"HOW HE PLANTED MY POTATOS."—The instructive note under the above heading (p. 499) reminds me of the excellent crops of Potatos economically grown years ago at Crimonmogate, Aberdeenshire. At the time I refer to, some acres of pasture-land were yearly planted with forest trees, and in order to break the "pan," or hard stratum of earth, that rested beneath the surface-soil (which, unless broken, resisted satisfactory root progress), the land was bastard-dug. The trees when planted were small, and in the first spring after they were planted, sets of Potatos were placed in any vacancies which occurred amongst them. The Potato plants were subsequently earthed, each one having a mound of soil to itself, and as the plantations were kept clear of weeds during the first year or two for the benefit of the trees, the only expense that accrued from the Potatos was in planting, earthing, and lifting them. The maiden turfy soil suited the Potatos, and I have heard Mr. Esson, who was gardener and forester at Crimonmogate, repeatedly remark that he obtained far better crops, both in quality and quantity, by this method than by ordinary field culture. That loss is frequently sustained through the mistaken idea that close planting yields the best return, may be commonly witnessed even upon light dry soil, but more especially is close planting hurtful to plantations in heavy, strong lands. To these, owing to the haulm growing robust, not only are the sun and air debarred from bestowing their beneficial influence upon much of the foliage and stems, but they are also eclipsed from the soil, which, in consequence, remains cold and inert, a condition most unfavourable to the healthy development of roots and tubers. We experienced an instance of this some years since with a plot of Magnum Bonums, which superficially appeared to be all that could be wished for, and we anticipated a heavy crop. The rows ran east and west, and, in lifting the crop, we commenced the outside one on the south side of the plot, the yield from which was remarkably good, and very much better than that from any other. The reason for the difference was apparent, and the lesson taught has not been forgotten. *Thos. Coomber.*

TOMATOS AND DISEASE.—Is it not probable we, ourselves, have to a large extent contributed to the cause of the fungoid disease with which our Tomato plants become so much infected by our continued applications of rich manure? These manures cause sappy rank growth instead of the desirable firm wood. Until this season I potted my plants in a rich compost of loam, well decayed hot-bed manure and sand. I also attended to feeding when the plants became pot-bound; and every season at some stage of their growth the plants became infected with the disease, and before its inroads could be checked the crop was partially lost. In the beginning of the present season, I was advised by a friend to try a different compost—one consisting of good loam with a moderate sprinkling of Thomson's Vine and Plant Manure, with just as much clean leaf-soil and sand added as to make the whole when mixed light and porous.



THE LATE JAMES SHIRLEY HIBBERD.

The results of this change of compost alone have been very gratifying. The disease has kept clear of the plants, and the firm short-jointed wood and leathery texture of the leaves, show that this is the better practice; beside, the crop of fruit was a fine one, and the flavour good. Perhaps I may be permitted to add that when giving my plants their final shift into 12-inch pots, I potted one plant as a test plant in a compost similar to that used in the previous season. I placed the plant in the same house, gave it the same treatment, only when the other plants became potbound and required feeding, I watered this one test plant with liquid manure-water, while I gave those the plant manure, and the result is that the single plant is the only one which is affected with the disease. These facts being before me, they go a good way in confirming my notion that the most potent cause of disease in Tomatos and Potatos is the feeding with very rich animal manure. *J. Charlton, Farnley Grove Gardens, Corbridge-on-Tyne.*

FLOWERING OF SEAFORTHIA ELEGANS.—In answer to Mr. Clayton's note respecting the above it may interest him to know that a plant of the same species has flowered and produced fruit and young ones in various gardens in this country. At Endcliffe Hall Gardens, many years ago, during the time Mr. Stevens was gardener there, a magnificent specimen flowered on more than one occasion. I recorded this at the time in one of our horticultural papers, but am not sure which one. The plant referred to had a fine branched raceme of flowers, and when the seed was ripe it had a very pretty appearance, the racemes being fully 3 feet long, and branched; the stalk of the raceme was of a bright silvery colour, and the seeds, which are produced in great quantities, were about as big as large Currants, and of a bright orange-scarlet colour. The seeds do not usually ripen all at one time. I have seen two racemes upon one plant produced at different times. From seeds obtained from the Endcliffe plant, numerous plants were raised, and in the border, where the specimen grew, they came up by the dozen. It takes some long time from the commencement of the flowering to the ripening of the seed, and the plants are usually of good size and age before they put forth flowers. *Alfred Outram, Victoria and Paradise Nurseries, Upper Hollaway, N.*

HOLLY AND OTHER BERRIES.—Although the season has been considered a bad one for fruit, it has been most favourable for berries, as never before have they been more abundant than this year. The Hollies, for which Suffolk is famous, are literally crowded with them, and the Thorns are crimson with haws. According to some, this wealth of berries denotes a hard winter, but gardeners know very well that the fruiting of Hollies and Thorns is just as dependent on the spring and previous season as is the fruiting of other trees, and if they are heavily laden one year they will be less so, or quite bare, the next. This is the condition they are almost sure to be in next season, and the converse holds good of fruit trees, which, from having so little to do during the present summer and autumn, have set and perfected plenty of flower-buds. *J. Sheppard, Woolverstone Park.*

VANDA GIGANTEA.—A remarkably fine specimen of the above species of Vanda is in flower in the collection of F. Wigan, Esq., Clare Lawn, East Sheen. The plant, which is in a 14-inch pot, has two growths; one, with seventeen long, thick, healthy leaves, and the other, a small one, springing from the base, and having six leaves. The larger growth is carrying two spikes of nine flowers each, which are about 3 inches across. The sepals and petals are thick and fleshy, and of a rich golden-yellow, marked with cinnamon-brown blotches. The lip is small and white. This species is considered—and with reason—to be difficult to establish; but when once established, ordinary stove treatment suits it very well. This particular plant has been in Mr. Wigan's collection more than a dozen years. *W. H. Y.*

FROST IN MIDLANDS, OCTOBER 28.—I am greatly surprised at there being only 5° of frost at Birmingham on October 28, as stated in Mr. Pope's note (see *Gardeners' Chronicle* for November 8, p. 538). I think it would be highly interesting if a few gardeners in various parts of Warwickshire were to report on the frost on that date, as it seems strange that there should be such a wide difference in about 25 miles. My thermometer is a properly tested maximum and minimum-registering one. In a gentleman's garden a short distance away, they have a minimum-registering Negretti & Zambra, and it marked 17° below the freezing-point, just as my own did. At Messrs. Allum's nurseries, Tamworth (8 miles from here), Mr. William Allum told me they had 17°. The following morning the *Daily*

Telegraph gave 17° below freezing as the reading on the grass in London. The water in a large tank here was covered with ice ⅝ inch thick. I send you a few specimens of shoots of Laurel, Privet, &c, generally considered fairly hardy, to show you the effects on even them, also a few late Apples that were left on the trees, so that you may form an opinion of what the cold was. I have been in the profession over forty years, and a close observer, but never saw such effects from a few hours' frost. *Thomas Woodford, Atherstone.* [The shoots of shrubs sent were badly blackened by the frost, and the Apples were quite soft to the touch. Ed]

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

November 11.—Present: Dr. M. T. Masters, in the chair; Mr. McLachlan, Mr. Pascoe, Dr. Scott, Dr. Oliver, Dr. Müller, Mr. Blandford, and Rev. G. Henslow, Hon. Sec.

Grapes Attacked by Larvæ.—With reference to the Grapes brought to the last meeting, Mr. McLachlan remarked that the larvæ might very probably prove to be those of Tortrix botrena. It was a well-known pest on continental Vines, and had been exported to America. He recommended that the Grapes infested should be covered with a fine gauze net, and that the larvæ should be watched to discover their further stages.

Endogenous Bud.—Dr. Masters exhibited a drawing of what appeared to be an endogenous bud in the axil of a leaf of Actinidi, embedded in the cortical tissue. Dr. Oliver remarked that the buds which arise from the roots of Anemone japonica are also endogenous. Similar buds on the roots of germinating plants are well known and described—*e.g.*, by Van Tieghem. *Bull. Soc. de Bot. Fr.*, 1886, p. 40; Irmisch, *Bot. Zeit.*, 1857, p. 48, with pl.—The interpretation appears to be that in roots the pericycle is the most active layer, and such buds as arise from roots are developed exactly as lateral roots are from this generative tissue. On the other hand, in stems the pericycle is more often in abeyance, while it is from the cambium from which ordinary buds and adventitious roots arise.

Translucent Apple.—Professor M. Ward reported upon the specimen sent to the last meeting as follows:—"The Apple sent for my inspection was affected with a disease known as 'Glassiness,' and was totally free from fungi in the interior. The parts affected by this disease are distinguished by the cells being very full of sugar and singularly poor in acids. The intercellular spaces are filled with water, whereas in the healthy parts they contain air. This season, a wet one, has been somewhat prolific in such Apples. A condition not unlike this is produced by frost, and by any changes which cause the intercellular spaces to fill with water."

Chrysanthemum "Hen and Chicken" Form.—Mr. Gooding, of the Manor House, Hayes, sent a remarkable specimen of a yellow variety with a large circle of small heads springing from the base of the central one. The latter was arrested in its growth, and dead. The florets had a tendency to be pedicillate, especially the outer ones. It is difficult to assign a cause, but possibly it received a check through frost, as no trace of insect attacks was discoverable.

Lycaste Skinneri, Monstrous.—Dr. Masters exhibited drawings of this plant received from Mr. Linden, of Brussels, in which the flowers were aborted and replaced by petaloid bracts.

Leucadendron argenteum.—He also showed drawings of germinating plants of the Silver Tree of Africa, which showed a curious cavity at the base of cotyledons encircling the plumule.

Floral Committee.

Awards were made as follows:—

By the Floral Committee.

First-class Certificates.

To Vaccinium pennsylvanicum, from Mr. A. Waterer.

To Oak Knap Hill Scarlet, from Mr. A. Waterer.

Awards of Merit.

To Chrysanthemum Arthur Wood, from Messrs. H. Cannell & Sons.

By the Orchid Committee.

First-class Certificates.

To Cypripedium Antigone, from Messrs. J. Veitch & Sons.

Awards of Merit.

To Cypripedium hybridum Doris, from N. C. Cookson, Esq.

To Cypripedium Eyermannianum, from F. Sander & Co.

To Odontoglossum Duvivierianum, from M. Linden.

To Cypripedium Muriel Hollington, from A. J. Hollington, Esq.

To Cypripedium Cleola, from Messrs. J. Veitch & Sons.

Botanical Certificate.

To Odontoglossum Noezliana, from M. Linden.

Medals.

Silver Gilt Banksian, to T. Rivers, for Apples and Pears.

Silver Banksian, to Sutton & Sons, for group of Primulas.

NATIONAL CHRYSANTHEMUM.

Floral Committee, November 11.—A large number of new varieties of Chrysanthemums was submitted for the consideration of the Floral Committee on the above date—Mr. E. Sanderson presiding. First-class Certificates of Merit were awarded to Pompon Anemone Emily Rowbotham, a delicate blush-coloured sport from the well-known Marie Stuart, from Mr. H. J. Jones, Rycroft Nursery, Lewisham; to single Chrysanthemum Golden Star, deep golden-yellow, a stout and well-formed variety, distinct in character, from Mr. J. Agate, nurseryman, Havant; to Japanese Chrysanthemum Mons. E. A. Carrière, a fine and full broad petalled flower, of a delicate blush colour, from Mr. F. W. Prior, Blackheath; to Japanese Chrysanthemum W. W. Cowles, of a chestnut-orange colour or ruby, a fine full flower, handsomely reflexed, and like Sunflower in shape, from Mr. H. Brown, Roydon Lodge, Essex; to Pompon Chrysanthemum William Westlake, a small-flowered yellow variety, of fine shape, and very free, from Mr. T. L. Turk, Cholmeley House, Highgate; to Pompon Chrysanthemum Marion, a deep orange, small, of beautiful shape, and apparently very free; to incurved John Lambert, a golden straw-coloured sport from Queen of England, having all the good qualities of that variety; Emily Dale and Emily Dale Improved, are also sports of this colour, but John Lambert was thought by the Committee to be the best of them, and this name was adopted; to reflexed Japanese Aida, yellow flushed with red, a fine, full, and very handsome flower; to incurved Camille Flammarion, a fine broad-petalled variety in the way of Venus, but deeper in shade of colour; all from Mr. R. Owen, Nurseryman, Maidenhead. To Japanese Chrysanthemum A. H. Neve, a flower of the same build as Belle Paule, the centre blush, becoming paler with age, the remainder of the flower white, large, full, and with great breadth and substance of petal—a fine exhibition variety; this was also shown by Mr. R. Owen, but the rule is to award the Certificate to the best flowers only. A Commendation was awarded to Japanese Lilian Bird, a delicate pink variety, distinct in colour, and having thread-like tubular petals, quite novel in character; this also came from Mr. Owen. Messrs. Pitcher & Manda, Hextable, Swanley, had Advance, a promising incurved Japanese; Snowdrift, a pure white reflexed variety; Kioto, golden-yellow, like Henry Cannell; October Beauty, resembling Madame C. Audiguier; and Louis Bœhmer, a pink sport from Mrs. Alpheus Hardy, which the committee wished to see again. Mr. J. Doughty, Agley Park, Cranbrook, sent incurved May Tomlin, a sport from Mrs. Heale, and very like Violet Tomlin, though with rather broader petals. Mr. E. Sanderson had a sport from the incurved Lady Hardinge, cream with yellow tinge, which the committee wished to see again. Messrs. H. Cannell & Son, nurserymen, Swanley, had reflexed Japanese, A. Wood, crimson, like Jeanne Delaux, but with fimbriated florets—the committee wished also to see this again. Mr. Thomas Studwick, Cottingham, had a sport from Jeanne d'Arc, peach colour deepening to cherry-lilac, of a promising character, which the committee desired to see again. Mr. Mursell, Tower House, Streatham, had Japanese variety Kate Reveill, a blush sport from Lady Lawrence, this also was to be seen again. The same request was made of Messrs. Clibran & Son, Oldfield Nursery, Altrincham, who had Lucy Clibran, a sport from Miss A. Haggas, much in the way of Mrs. Coleman.

GODALMING.

November 5 and 6.—The seventh annual exhibition was held in the Town Hall, and was a great improvement on previous exhibitions. The trained specimens were a grand feature. Mr. Edwards, gr. to the Dowager Countess of Enniskillen, secured the cup offered in this class; Mr. Paddon, gr. to Percy Ricardo, Esq., running him very closely. This exhibitor was first in the class for thirty-six cut blooms twelve Japanese, twelve incurved and twelve Anemone, staging splendid samples.

Cut blooms in other classes were all very creditable. Groups of Chrysanthemums were also shown, the successful competitors being Mr. Edwards, Mr. Tyler, and Mr. F. Jordan. Prizes were also offered for miscellaneous groups, which gave a very pleasing variety, Mr. Tyler leading.

Fruit was very well shown, the Mayor, E. Gammon, Esq., presenting a cup for the best collection of not less than six or more than ten varieties, it was won by Mr. T. W. Bond.

Amateurs and cottagers also showed very well.

KINGSTON AND SURBITON.

November 11 and 12.—It was both interesting and gratifying to note that, in spite of anticipations to the contrary, the holding of the Chrysanthemum Centenary Exhibition at the Royal Aquarium at the same time did not swallow up the show at this place, which not so many years since occupied the pride of place in and about the metropolis. In reality, the show this year was not only a wonderfully good one, but better has rarely been held in the Kingston Drill Hall, and Mr. G. Woodgate, the esteemed secretary, merits hearty congratulations thereupon.

Groups of Plants.—The miscellaneous groups were, as usual, very good, and the class prizes well contested. Mr. Sutton, gr. to J. S. Sassoon, Esq., Walton, had the best Poinsettias, telling with good effect. Mr. Palmer, gr. to the Right Hon. Hume Dick, Thames Ditton, was a good 2nd. Groups of this class, however, are hardly gay enough at this time of the year, be they ever so tastefully arranged.

Chrysanthemum Groups were generally excellent and numerous, but all of the usual formal order. It would be, indeed, a gain could these groups have some light, graceful foliage plants introduced into them. The best of these was staged by Mr. H. W. Pitcher, gr. to Mrs. Dunnage, Surbiton. His flowers were of excellent quality. Mr. Rickwood, gr. to Lady Freake, Twickenham, was a good 2nd, his dwarf cut-back plants presenting a very meritorious aspect. Mr. Dorset, gr. to Mrs. Welsh, Kingston Hill, was 3rd. Mr. R. Cawte, gr. to J. Robinson, Esq., Esher, had the best six trained plants, a little stiff, but well flowered; Mr. J. Fellows, of Twickenham, being 2nd. Mr. Cawte had the best three Japanese plants in Margot, Sunflower, and Val d'Andorre; Mr. W. Streets, gr. to G. F. W. Ponsford, Esq., Esher, being 2nd, with also good plants of Marget Orphée and Elaine.

Mr. Higgs, gr. to Mrs. Bryant, Leatherhead, had the best three standard incurved, in the members of the Rundle family.

Some half-dozen of scarlet and pink Bouvardias, beautifully flowered in 48-sized pots, from Mr. Billings, gr. to Lord Londesborough, Norbiton, forming a new class, deservedly took a 1st prize; and half-a-dozen of scarlet-flowered Carnations in pots, from Mr. Rickwood, were also novel and meritorious As usual, there were many Chinese Primroses, Solanums, &c., on the tables.

Cut Blooms.—The Cup class, for forty-eight blooms, one-half Japanese and the rest incurved, brought a stiff competition, the winner in the present case being Mr. C. Beckett, gr. to T. H. Bryant, Esq., Dorking, whose blooms were of material excellence; and Mr. Carpenter, gr. to Major C. Brown, Byfleet, was 2nd, he also having capital blooms; in the stand of Mr. Mease, who was awarded 3rd, was the premier incurved bloom, in Lord Alcester, and the best Japanese in Etoile de Lyon.

Mr. Mease was well in with twenty-four incurved,

blooms, having Violet Tomlin, Mrs. Coleman, Princess of Wales, John Salter, &c., exceptionally good; Mr. E. Coombs, gr. to W. Furse, Esq., Teddington, was 2nd. With twelve incurved blooms, Mr. B. Cawte was a good 1st.

Turning to the Japanese flowers, the best twenty-four came from Mr. Cawte, who had Criterion, Mr. Wright, Stanstead Surprise, Mr. Cannell, and others, in good form; Mr. W. Mease came 2nd. Mr. Higgs had the best twelve.

Mr. Slade, gr. to Lady Bowater, Richmond Park, had the best six Japanese, whilst the best six blooms of one variety were Etoile de Lyon, which came from Mr. Felgate.

An interesting class for six Japanese, open only to gardeners who have not previously won a prize, brought more entries and good flowers, very good evidence that plenty of young growers are coming on. Reflexed blooms were wonderfully good, the best twelve being staged by Mr. Carpenter.

In the Anemone class, Mr. Carpenter was 1st with capital flowers; and Mr. Woodgate, gr. to Lady Wolverton, Coombe Warren, had the best Japanese, and also the best twelve bunches of Pompons. In a mixed class for eight each, Japanese, incurved, and reflexed, a capital show was made by Messrs. Mease and Woodgate, who stood as thus placed. This is a class worthy of wide copying.

Fruit.—The best black Grapes, very finely-finished Alicante, came from Mr. Griffin, gr. to Messrs. Christie, Coombe Bank, who also had the best white Grapes. Mr. Laytham, Hampton Court Gardens, staged some capital black. The best four dishes of Pears come from Mr. Pitcher; and Mr. C. J. Waite had the best four dishes of Apples. Messrs. B. Peed & Sons, Norwood, showed a good collection of Apples and Pears. Some capital vegetables in baskets were also exhibited.

BOURNEMOUTH CHRYSANTHEMUM.

November 12 and 13.—The Bournemouth and District Horticultural Society held its fourth annual exhibition of Chrysanthemums, fruits, and vegetables, in the winter gardens on the above dates. It was a long way in advance of any previous show of the kind held in Bournemouth, and the Hon. Secretary, Charles Brown, Esq., and his assistant, Mr. J. Spong, of Lindisfarne Gardens, may be congratulated upon the success that has followed their efforts in this direction.

Cut Blooms.—Seven good stands of thirty-six blooms, consisting of eighteen Japanese and like a number of incurved, not more than two of any one variety, were put up in competition for the money prizes and a challenge cup given by the President of the Society, Mr. Baring Young, M.P., subject to the usual conditions of cup holding.

Mr. Garner, gr. to Mrs. Braddyll, Amberwood, Christchurch, was 1st, with a very meritorious fresh even lot of large blooms. Messrs. Drover, nurserymen, Fareham, who won the Cup last year, came near to winning it this year likewise, and took 2nd prize.

Out of nine good stands of twelve Japanese, in distinct varieties, Messrs. Elcombe & Sons, Romsey, were 1st, showing large, solid, fresh blooms of even size. Messrs. Drover were a good 2nd.

In the corresponding class, for a like number of blooms and varieties of incurved, Mr. Garner had the best stand out of five staged, showing grand blooms; and Messrs. G. Watts & Sons, Bournemouth, being a creditable 2nd prize winner.

Mr. Gill, gr. to Earl Nelson, Trafalgar Park, had the best twelve blooms of Anemone-flowered varieties; and Mr. Garner had the best twelve varieties of incurved in the classes confined to exhibitors residing within a radius of 12 miles from the pier, with a full dozen of blooms, winning the National Chrysanthemum Society's medal, together with a money prize.

In the class provided for premier blooms of Japanese, a fine Etoile de Lyon, staged by the Messrs. Elcombe & Son, was justly considered the best flower.

Plant Groups.—Some groups of well-grown and flowered plants found place in the open and local classes, Mr. T. K. Ingram, Parkstone nursery, taking 1st; and Messrs. Watts and Sons, a very close 2nd.

Mr. Crasp, gr. to Lord Wimborne, Canford Manor, Wimborne, was awarded the medal for the plants of Thunberg, Grandiflorum, Mons. Astorg, Lady T. Lawrence, Lord Wolseley, Queen of England, and Cullingfordii, forming the back row of his group, these being the largest and finest flowers on any like number of plants.

Mr. J. Ellis, gr. to L. Forbes, Esq, had in the local class the best group in a good competition, the plants being very well arranged.

Mr. Swaffield, Exotic Nursery, Bournemouth, had a good group of miscellaneous plants, not for competition, including Oncidium tigrinum, Pilumna nobilis, Dendrobium formosum, giganteum, &c.

Fruit.—Mr. Garner was the most successful exhibitor of Grapes, taking three 1st prizes with black Grapes in the open and local classes; Mr. Chalk, gr. to G. Read, Esq., Westwood, Salisbury, had the best Muscats in the open class.

Vegetables were shown remarkably well for a district like Bournemouth, in which peaty soil mostly predominates.

TUNBRIDGE WELLS, MID-KENT, AND EAST SUSSEX CHRYSANTHEMUM.

November 12 and 13.—The exhibition of the above was held this year in the Assembly Rooms, one room being set apart for fruit, vegetables, and the principal groups of plants. The competition for plants was not great, but the specimens exhibited were of fine quality.

Mr. J. Smooker, gr. to Mrs. Hall, Brathay House, Tunbridge Wells, was 1st for eight very fine specimens, Prince Alfred, Baron Beust, Cullingfordii, Chevalier, Domage, and Antonelli being particularly noticeable.

For the principal group of plants there was a close competition between Mr. H. Hemsley, gr. to J. R. Bremerton, Esq., 42, Broadway Down; and Mr. H. Scammell, gr. to C. Reily, Esq., Nevill Park, Tunbridge Wells. The first-named was awarded the 1st prize for his better arrangement, but Mr. Scammell, who was placed 2nd, had the best grown plants, his incurved Mrs. Dixon and Mrs. Rundle being very fine.

Cut blooms were well shown throughout; in most of the classes the competition was very spirited. For twenty-four incurved blooms, the competition was close between Mr. W. Wallis, gr. to J. Mews, Esq., Hartwell, Hartfield; and Mr. John Snow, gr. to C. A. de Murietta, Esq., Wadhurst Park; the former winning by a few points only.

Mr. J. Legg, gr. to the Rev. E. H. Boardman, Glen Andred, Groombridge, easily won in the class for twelve, with well finished blooms.

For twenty-four Japanese, Mr. W. Wallis was again placed 1st, leading easily with an even lot of well-finished blooms, Madame John Laing, Mrs. F. Jameson, Mrs. Wright, Stanstead Surprise, and Sunflower being some of his best blooms.

Poinsettias, which are always well shown here, had heads, in some instances, of 15 inches in diameter, and Mr. Luff, gr. to G. Holt Nason, Esq., Castleton, Tunbridge Wells, was 1st, for six plants. Mr. Scammell was 1st for twelve bunches of Anemone Pompons, and very fine they were.

Culinary and dessert Apples were exhibited in large numbers, and many of the collections were of much merit. Mr. F. Bridger, gr. to Lord de l'Isle, won easily with six dishes of cooking fruit, large, clean well-coloured examples. Mr. Bridger was also 1st for dessert Apples.

Mr. Bridger won easily in the class of kitchen Pears. Mr. Johnstone, gr. to Captain Green, Bingham Abbey, was 1st, for six dessert Pears of superb quality, of Doyenné du Comice, Beurré Bachelier, Pitmaston Duchess, Beurré d'Anjou, and Gansel's Bergamot.

The collections of vegetables were numerous, and worthy of the county of Kent.

Grapes, black and white, were very fine, the Muscats from Mr. Legg being even in berry, and well-finished; he easily won 1st prize; while Mr. Scammell was 1st with equally good Alicante. Mr. Johnstone was 1st for a collection of fruit, his Pears and Muscat Grapes being very fine. Mr. Rust, gr. to the Marquis of Abergavenny, set up a very fine collection of fruit, not for competition, of seventy-two dishes.

WIMBLEDON CHRYSANTHEMUM.

An excellent show was held in the Drill Hall at the above-named place on the 13th and 14th inst., cut blooms and groups of Chrysanthemums being the leading features. The 1st prize in the class for forty-eight cut blooms of Japanese and incurved varieties, a Challenge Cup, of the value of 15 guineas, was well won by Mr. W. Mease, gr. to F. Tate, Esq., Downside, Leatherhead; and Mr. C. Beckett, gr. to C. H. Bryant, Esq., Twickenham, to the 2nd prize, with larger but less fresh blooms.

For twelve incurved and twelve Japanese, distinct, Mr. C. Gibson, gr. to J. Wormald, Esq., was 1st; and Mr. Alderman, gr. to G. Hatfield, Esq., Morden Hall, Mitcham, was 2nd; and 1st for twelve distinct varieties of incurved, Mr. W. Palmer, gr. to the Right Hon. Hume Dick, Thames Ditton House, being 2nd; these two last-named exhibitors occupying similar positions for twelve Japanese varieties. Reflexed varieties were best staged by Mr. C. Gibson, and large-flowered Anemone varieties by Mr. G. Woodgate, gr. to Lady Wolverton, Warren House, Kingston-on-Thames.

There were five competitors in the class for groups of Chrysanthemums which should not exceed an area of 40 feet superficial. A Silver Cup was the 1st prize, which was awarded to Mr. W. Ware, gr. to L. Walters, Esq., Woodhayes, whose plants, although very late, carried capital blooms; Mr. W. Springthorpe, gr. to N. H. Alexander, Esq., Roehampton was a good 2nd.

A splendid specimen of Golden Circle Pompon Chrysanthemum won for Mr. W. Thornton, the gr. to T. E. Crocker, Esq, Draymont, the 1st prize in that class.

Groups of miscellaneous plants were excellent, and Mr. Bradford, gr. to H. B. Wallis, Esq., Addington, was 1st, and Mr. W. Ware 2nd, for these.

Decorative plants with showy berries were staged in large numbers and of fine quality, some capitally-grown yellow-fruited Solanums being amongst them

Grapes and other fruits were exhibited, and vegetables made a good show.

BIRMINGHAM CHRYSANTHEMUM.

The thirtieth autumn exhibition of the above Society was held as usual in Birmingham Town Hall, on November 12 and following day. The shows of the Society have for some years been reckoned the best that were held in the Midlands, and the last was in some respects superior to those which have preceded it. Chrysanthemum growing is much encouraged, and the exhibition of cut blooms is stimulated by liberal prizes. Chinese Primulas rightly receive special attention at these shows.

Cut Blooms demand the first notice. The principal class was one for forty-eight varieties, distinct, half to be Japanese and half incurved, for which the handsome sums of £20, £15, and £10 were offered in prizes. As had been anticipated, the display was a large one, there being no fewer than eighteen competitors. The best came from Mr. J. Lambert, gr. to Col. Wingfield, Onslow Hall, Shrewsbury, whose incurved blooms were of large size, neat, and fresh looking; the Japanese varieties equalling them in the latter point, whilst far exceeding them in point of size. Mr. Blair, gr. to the Duke of Sutherland, Trentham, was a good 2nd. Mr. J. Gould, gr. to R. K. Dale, Esq., Bromborough Hall, Cheshire, was the winner of the 3rd prize.

For twenty-four varieties, twelve to be incurved and twelve Japanese, distinct, 1st, Mr. Gould, with even stands of heavy and bright-coloured blooms; Mr. Cox, gr. to A. H. Watts, Esq., Elm Hall, Wavertree, Liverpool, followed very closely, and secured the 2nd prize.

Mr. J. Austin, gr. to the Earl of Dudley, Witley Court, Stourbridge, occupied the premier position in the class for eighteen incurved, distinct varieties, with a creditable lot of blooms; Mr. A. Haggart, gr. to Mrs. J. Foster, Moor Park, Ludlow, being 2nd, with smaller, but yet very fresh-looking flowers.

The best twelve distinct Japanese varieties were shown by Mr. A. Coomber, gr. to Earl Dudley, Flimley Hall, Dudley; who was followed very closely by Mr. Cox. There were in this class nine entries.

Anemone-flowered varieties were well represented in the class for twelve, by blooms shown by Mr. Justice, gr. to C. S. Howitt, Esq, Norton, Worcester, who was 1st; Mr. W. Comfort, gr. to G. A. Everitt, Esq., Knowle Hall, being the winner of the 2nd prize.

Groups of Chrysanthemums.—These were very well shown by four exhibitors, in areas 80 feet square. Mr. E. Cooper, gr. to the Right Hon. J. Chamberlain, Highbury, Birmingham, was placed 1st, his plants carrying fully opened blooms, but rather poorly arranged; Mr. W. H. Dyer, gr. to Mrs. Marigold, Park House, Edgbaston, was 2nd, and the arrangement was similarly in fault.

Prizes were also offered for groups of Chrysanthemums and foliage plants and Ferns, and as the entries were numerous, the innovation was encouraging to the promoters. Mr. F. Audry, gr. to

J. Breedon, Esq., Park Road, Moseley, was 1st, and Mr. W. A. Powell, gr. to G. A. Kemick, Esq., Somerset Road, Edgbaston, 2nd.

Specimen Plants.—The best nine specimens of Chrysanthemum plants in pots were those staged by Mr. G. Cooper, which were very well flowered; Mr. O. Brazier, gr. to Sir T. Martineau, West Hill, Edgbaston, took the 2nd prize. Mr. E. Cooper, with six large-flowered varieties, but from which the Japanese were excluded, was 1st, and Mr. O. Brazier 2nd. A specimen of Jardin des Plantes in very good condition won for Mr. Dyer the 1st prize offered for a single specimen of any large-flowered variety. The best Pompons, loosely trained and freely flowered, were staged by Mr. J. Masdron, gr. to G. Cadbury, Esq., Woodbrook, Selly Oak, and these were quite 5 feet in diameter.

Primulas.—These plants are an attractive feature at the Birmingham autumn shows, and on this occasion twelve plants shown by Messrs. Thomson & Co., Spark Hill Nurseries, and which were full of bloom, easily took the 1st place; and the same high place was taken by this firm for six Fern-leaved varieties of Primula, including the varieties The Queen, Duchess of Fife, and Her Majesty.

Bouquets made a great show, those made by Messrs. Pope & Sons, King's Norton nurseries, securing for that firm the 1st prize.

Fruit is usually exhibited in quantity here, and the quality of the same is seldom lacking. For six bunches of Grapes, to contain at least three varieties, Mr. W. Taylor, gr. to Alderman Chaffin, Bath, easily secured the premier award, Gros Maroc being especially noticed in this stand; Mr. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, was 2nd.

Three bunches of black Grapes, any variety, were best shown by Mr. J. Bates, gr. to J. T. Harris, Esq., The Hayes, Stone; and by Mrs. Taylor, who was placed 2nd, both growers showing Gros Colmar.

Mr. Wyton, gr. to Major Bird, Crookley Hall, Garstang, St. Helens, was the winner in the class for three bunches of any variety of white Grape, staging magnificent examples of Muscat of Alexandria; Mr. Taylor following with the same variety.

The best Pine-apples were exhibited by Mr. J. Bennett, gr. to the Hon. C. H. Wynne, Corwen Hall, North Wales.

Apples were numerous. Mr. Luncey, gr. to M. Lowe, Esq., Welsborne House, was awarded the prize for dessert and for culinary kinds.

Messrs. Thomson & Son, and Messrs. Pope & Son, to aid the decorations, put up fine groups of plants in variety on each side of the orchestra.

HOUNSLOW AND ISLEWORTH CHRYSANTHEMUM SHOW.

THE first autumn show in connection with the above Society, was held in the Town Hall, Hounslow, on the 12th and 13th, and was a great success. The competition in most of the classes was severe, and the quality of the blooms and of the plants generally could scarcely have been better.

In the class for groups there were seven competitors, and very little difference could be observed in the various exhibits. In this class, Mr. Smith, gr. to J. Cobb, Esq., was 1st. There were some fine fresh blooms in this group, and the plants were not crowded so much as were those in the other groups, the plants also were much dwarfer. J. Bigwood, Esq., M.P., was 2nd; and Mr. Ford, gr. to W. H. Ellis, Esq., 3rd.

Mr. Debnam, gr. to A. Pears, Esq., was the only exhibitor of trained plants, and his examples were good ones.

Cut blooms were shown in large quantities, and Mr. Ford was 1st, with Mr. Debnam 2nd.

In the class for twenty-four Japanese varieties, G. H. Barber, Esq., was 1st for twelve incurved; and Mr. Greengrass, gr. to — Lomax, Esq., 2nd.

Twelve Japanese.—1st, Mr. Barber; 2nd, Mr. Debnam.

Twelve bunches, Pompon varieties.—1st, Mr. Ford; 2nd, Mr. Hoar.

For six incurved varieties, Mr. Ford was 1st; and Mr. Goulder, gr. to R. Belcham, Esq., was 2nd. Mr. Ford was also 1st for six Japanese, and Mr. Jordan, 2nd. Six reflexed, 1st, Mr. Ford; 2nd, Mr. Hill, gr. to P. B. Burgoyne, Esq.

Amateurs did not show to much advantage, but the cottagers came out in good form, and the entries were so numerous that the committee wisely doubled the number of prizes in these classes. Messrs. T. Ellis, Carter, Ridley, and W. S. Nichols, took the chief prizes in the amateur class, the latter gentleman also showing a nice collection of vegetables.

Table plants led to a spirited competition among the exhibitors, and Cyclamen, Chinese Primulas, were plentifully shown; Grapes, hardy fruit, Tomatos, and vegetables, formed no inconspicuous exhibits.

WINCHESTER CHRYSANTHEMUM.

AN excellent exhibition was held on the 13th and 14th inst., at Winchester, in the Guildhall. The cut blooms of Chrysanthemums formed a fine feature of the show, and other items were numerously shown, of good quality generally.

In the class for forty-eight cut blooms, in not less than thirty-six varieties, the Ladies Challenge Cup and a money prize was won by Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rookesbury Park, Fareham, with beautifully finished incurves and bright-coloured Japanese; and Messrs. W. and G. Drover, Fareham, were placed 2nd. There were five competitors.

The next important class, that for twenty-four Japanese in not less than twelve varieties, held seven competitors, and Mr. W. Trinder, gr. to Sir H. Mildmay, Bart., Dogmersfield, easily secured the 1st prize, and Mr. G. Inglefield, gr. to S. J. Kelk, Bart., Tedworth Court, Marlborough, was 2nd.

In the class for twelve incurved varieties, distinct, Mr. N. Molyneux was a long way ahead of other exhibitors with fine blooms, and was followed by Messrs. Inglefield and Trinder, who were 2nd and 3rd in the order of their names. Mr. Budd, gr. to F. Dalgety, Esq., Lockerby Hall, Romsey, easily secured the 1st prize for twelve Japanese varieties. Anemone varieties were best staged by Mr. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester; and reflexed kinds by Mr. Allen, gr. to Captain the Hon. Victor Montague, Wherwell Priory, Andover.

Groups of Chrysanthemums occupying a space of 56 square feet: Mr. F. Smith, gr. to Lady Wodehouse, Mayfield, Winchester, was placed 1st, with a group which contained plants creditably arranged, which possessed excellent blooms generally. Mr. Wareham, gr. to Mrs. Gunner, Winchester, was 2nd. Specimen-trained plants were best from Mr. J. Kaines, Winchester.

Table Decorations were, as they always are at Winchester, good; Miss A. Flight, of Twyford, was an easy 1st, for a tastefully-arranged stand of Chrysanthemums and other suitable flowers; Miss N. Owen, Basingstoke, was 2nd. Miss Flight was awarded 1st honours for an arrangement of hardy shrubs, Ferns, and Grasses.

Primulas made a brave show. Excellent fruit in variety was staged, the best Grapes coming from Mr. C. Warden, gr. to Sir F. Bathurst, Clarendon Park, Salisbury, Mr. Inglefield and Mr. T. Hall, gr. to S. Montague, Esq., M.P., South Stoneham House, Portswood, Southampton. Dessert Apples were exhibited by no fewer than twenty-three persons, and the best were those of Mr. T. Hall. Vegetables were well shown.

REIGATE CHRYSANTHEMUM.

THE second annual exhibition of the Reigate and District Chrysanthemum Society was held in the Public Hall on the 14th inst., and was a success, both in the number and quality of the exhibits, and financially. So numerous were the exhibits, that additional space had to be taken, and even then the exhibits were much together. The Society should in future secure a more commodious place than the Town Hall.

The principal exhibitors were Mr. C. J. Salter, gr. to T. B. Haywood, Esq., Woodhatch Lodge, Reigate; Mr. C. G. Goldsmith, gr. to W. B. Waterlow, Esq., High Trees, Red Hill; Mr. H. Bailey, gr. to W. L. Barclay, Esq., The Briars, Reigate; Mr. A. Hayter, gr. to the Marchioness of Anglesey, The Priory, Reigate; and Mr. J. Brown, gr. to Mrs. Waterlow, Great Doods, Reigate, who is also the Hon. Secretary of the Society.

In the classes for cut blooms, for the best thirty-six Japanese, Mr. Salter was an easy 1st, having good even flowers throughout, with the exception of John Thorp, which was rather thin, but he had specially fine blooms of Japonais, Madame Baco, Belle Paule, and some others; Mr. Brown was 2nd with blooms scarcely so large or even as the 1st lot, but he had good flowers of Souvenir d'A. Amiel, Marsa, and Avalanche.

For twenty-four Japanese, Mr. Goldsmith was 1st, with a grand lot, particularly Mrs. J. Wright, Duchess of Albany, Etoile de Lyon, Carew Underwood, and E. Molyneux; and Mr. Bailey was a good 2nd.

For twelve Japanese, Mr. W. Slowgrove, gr. to Mrs. Crawford, Galton Lodge, was 1st, with probably the best twelve Japanese flowers in the show—Thunberg, Stanstead White, Meg Merrilies, and Mrs. J. Laing, being extra fine; Mr. J. R. Cotton, gr. to E. Bell, Esq., Wray Park, Reigate, was 2nd.

Mr. Port was 1st for six Japanese, Mr. W. Peters, gr. to W. Finch, Esq., Danecroft Lodge, Reigate, 2nd.

Mr. Hayter was 1st for six Japanese of one variety—showing Sunflower; Mr. Brown, 2nd, with very fine blooms of Avalanche.

Six incurved blooms—one variety, Mr. Salter was here 1st with Empress of India; 2nd, Mr. Hayter, with Lord Alcester. He was also 2nd for twelve incurved, Mr. Goldsmith being 1st.

In the class for twenty-four incurved, Mr. Salter had it all his own way. He was also 1st for twelve reflexed blooms in eight varieties. For twelve Anemone-flowered and twelve Pompons, three blooms of each, Mr. Salter led. In the class for six varieties, any kind, Mr. Slowgrove was 1st, with large flowers of Etoile de Lyon, Boule d'Or, Maiden's Blush, Gloriosum, Val d'Andorre, and Golden Dragon; and Mr. Tickner 2nd.

For the best group of Chrysanthemums of 50 feet square, there were five competitors, but Mr. Goldsmith was a good 1st, with plants having large fresh blooms; moreover, his plants were much dwarfer than any of the others; an edging of Val d'Andorre, about 2 feet high, gave a good finish to the group. Mr. Brown was 2nd, with a rather straggly group, edged with Pompons. For groups of 30 feet, 1st, Mr. Peters; 2nd, Mr. Tickner.

In the ante-room, Mr. Wells, Earlswood Nurseries, Redhill, had a large and meritorious collection of cut blooms, tastefully arranged; the group had some good single flowers, a fine white being Earlswood Perfection.

There were prizes for plants consisting of Dracænas, Cordylines, in which class Mr. Tickner took the leading place. Nice table plants, Chinese Primulas, Cyclamens, &c., were likewise exhibited. Some groups of miscellaneous plants, covering each an area 50 square feet, and arranged for effect, were displayed, the 1st prize for which was awarded to Mr. R. V. Smith, gr. to G. Taylor, Esq., Margery Hall. Too much crowding was the chief fault in the arrangement of these plants. There were groups of 30 square feet, Mr. Tickner taking 1st prize.

TEDDINGTON CHRYSANTHEMUM.

THE seventh annual exhibition, under the auspices of the Teddington Chrysanthemum Society, took place at the Town-Hall on Thursday and Friday, the 13th and 14th inst., and was again attended with very gratifying success. The growth of the exhibition has been steady and consistent year by year, and the improvement in the quality of the exhibits has kept pace with the increase in their number, and there was a consensus of opinion on the part of the judges and the committee that this was in every respect the best exhibition the Society has yet held. A better place for the show than the Town-Hall could not be desired; but the development of the exhibition has been so rapid, that the spacious room is no longer sufficiently large, six long lengths of tabling and the several groups of plants leaving no more space than was necessary for visitors to move about with ease. The competition for groups of Chrysanthemums in pots was much keener than last year, and some very nice collections were shown. The groups of miscellaneous plants were also an attractive feature, and were generally admired. The cut blooms, which occupied the three centre tables, made a very creditable show. In the contest for the Challenge Cup, Mr. Furze once more came to the fore, and no one will begrudge him his success, for few gentlemen are such devoted cultivators of the Chrysanthemum as the popular treasurer of the Society. The successes achieved by the President of the Society, Mr. F. Braby, also gave general satisfaction, and the close attention he has in recent years paid to the culture of the flower richly merited the honours he received.

Amongst the most successful exhibitors of the Chrysanthemum were Lieut.-General Vialls, C.B.; Mrs. Holberton, Mr. J. F. Weymouth, the Dowager Lady Freake, Mr. C. Futcher, Mrs. Cowan, and Mr. W. Millwood, all of whom showed some shapely blooms. The ladies' contributions are always a

special attraction at this show, and a large table was set apart for them on this occasion. The stands of cut flowers were arranged with rare taste, those of Miss Ida Braby, Miss C. Wragge, Miss Millwood, Miss Barbara Thynne, and Miss Furze, being well worthy the prizes they gained. The stands of Chrysanthemums, and of autumnal flowers, leaves, and berries, in which the same ladies figured, were also excellently arranged.

The collections of vegetables were remarkably fine, and the competition most spirited, while in point of quality the fruit has not often been equal to that shown this year. There were several collections of exhibits, not for competition; these included a splendid lot of black and white Grapes from the nursery of Mr. H. Tite, of Hampton, and the royal kitchen garden at Hampton Court, the latter being shown by Mr. W. Laytham. Mr. A. Woodward, of the Causeway, Teddington, was highly commended for eleven dishes of fine Apples and Pears; Mr. Tracy, of Amyand Park Nurseries, Twickenham, exhibited a lovely group of Orchids; and Mr. D. Anderson sent a nice collection of foliage and flowering plants.

CHESHUNT.

November 14 and 15.—The seventh exhibition of Chrysanthemums, autumnal flowers, fruit, and vegetables, was held in St. Mary's Hall, and was certainly the best exhibition yet held. Messrs. Paul & Son, of the Old Nurseries, assisted in decorating the hall, sending a group of Bamboos and a collection of new Tree Carnations.

The 1st prize group of Chrysanthemums was well arranged, and contained well-grown plants, the blooms good enough for prize stands of such sorts as Mrs. Wheeler, Princess of Wales, Queen of England, &c. It was arranged by Mr. Rowdon, gr. to J. Walton, Esq. Mr. Rowdon also gained the 1st prize for a group of miscellaneous plants. Mr. J. T. Walters, gr. to C. Clapham, Esq., easily won the 1st prize with naturally-grown Pompon plants, against two other exhibitors who had taken pains to induce their plants to become extremely dwarf.

Mr. Walters also won the 1st prize in a class for a group of Pompons grown in pots not to exceed 6 inches in diameter, and they were very well grown indeed.

Cut blooms were remarkably well finished in all the sections. Mr. Bettesworth, gr. to R. Ewing, Esq., sent a fine lot, not for competition. The best blooms in the competing classes were from Mr. C. Cox, gr. to J. Trotter, Esq.; he was 1st in a good competition for twenty-four, twelve Japanese and twelve incurved, and his blooms were very fine. He also led for twelve incurved blooms, and also for twelve Japanese, but not easily.

In the class for reflexed blooms, Mr. J. Turk, gr. P. Bosanquet, Esq., would have won easily, but he put in two blooms of Charles Delmar, Japanese, which disqualified him; Mr. Cox, having the next best stand, was awarded the 1st prize. Mr. T. Gilbert, gr. to E. Horner, Esq., won easily with six bunches of Pompons.

Mr. Bettesworth was well to the front with Pears and Apples, in a good competition. Miss Cocker was a winner, with well-grown Primulas. Cottagers made a brave show in the vegetable classes.

TWICKENHAM.

November 18 and 19.—Though held late, a remarkably bright and pleasing display of Chrysanthemums was found in the Town Hall. Specially numerous and effective were the plain groups here arranged for effect only, an outer bordering of Ferns being admissible. The best one came from Mr. Mitchell, gr. to W. Cunard, Esq., Orleans House; whilst other telling ones came from Mr. Parsons, gr. to T. Twining, Esq.; and Mr. Rickwood, gr. to Lady Freake. Of groups, not for competition, specially gay and pleasing, was one set up by Messrs. Hawkins and Bennett. Also very nice, indeed, was a miscellaneous group of Chrysanthemums, Heaths, Primulas, &c., set in Ferns, and dressed with foliage plants, from Mr. H. E. Fordham, florist. Only one lot of trained plants was exhibited.

Cut blooms were very good for so late in the season. The chief competitors in the open classes were Mr. Coombs, gr. to W. Furse, Esq., Teddington; and Mr. Waite, gr. to the Hon. Colonel Talbot, Esher. Miss Haggas was the best of six incurved blooms, and Etoile de Lyon the finest Japanese.

Fruits and Vegetables.—The best four dishes of fruit came from Mr. Davis, gr. to H. Chappell, Esq., Mr. Waite had the best four dishes of Pears in good samples, and also of Apples. Mr. Mitchell had the best Tomatos. Vegetables were wonderfully good, Mr. Waite winning 1st prize.

WELLS CHRYSANTHEMUM SHOW.

The two days' show which was opened at the Town Hall, on Wednesday, Nov. 5 and 6, was in point of quality and number of entries ahead of previous shows. The entries were fifty more than last year, and, with regard to the exhibits, some of them could not have been beaten at any of the principal shows in the county. The specimens of incurved plants were perfect. The groups were also very fine, and the display of fruit was remarkably good.

The National Chrysanthemum Society's Medal was awarded to Mr. T. Wilkinson, gr. to C. C. Tudgway, Esq., for twenty-four blooms, one half Japanese, and one half incurved varieties. The best bloom and plant was awarded respectively to Avalanche, exhibited by Mr. C. C. Tudgway, in the class for six Japanese blooms; and Mrs. Dixon, in the any variety class, exhibited by Mrs. Rees-Mogg. The show, as a whole, was very creditable, though, as it was held somewhat early, some of the blooms were scarcely perfect. Table plants were greatly admired, Mr. W. S. Hodgkinson's exhibit being placed 1st. In groups of Chrysanthemums, those which took the 1st, Mr. J. B. Payne, and 2nd, T. Wilkinson, were very fine and especially good.

GUILDFORD CHRYSANTHEMUM SHOW.

The annual show, under the auspices of the above Society, was held in the County and Borough Halls on Wednesday and Thursday, the 12th and 13th inst. There were about 160 entries altogether, being thirty-six in excess of last year, and, owing to the satisfactory financial position of the Society at the end of last year, an additional sum of £12 was offered in prizes. Formerly the Large Hall and the Judge's-room were sufficient for the staging of the exhibits, but this year both the Eastern and Western Halls have been utilised. In the Small Hall were located the amateurs' classes, the class for small groups, Primulas, and fruit; the other classes were in the Large Hall. The whole was most effectively arranged. The platform in the Large Hall was occupied with a splendid array of specimens; the groups, which comprised some fine blooms, exquisitely arranged, were on either side of the Hall; and cut blooms were displayed on a long table in the centre. The specimens were perhaps the most meritorious of the whole of the classes. The amateur classes were below the average. Of the fruit, Grapes were very fine. The Society has this year become affiliated with the National Chrysanthemum Society, and the parent Society gave a Bronze Medal and two Certificates, to be awarded where the judges considered unusual merit was shown. The Bronze Medal was given to Mr. Spence for his group of Chrysanthemums in pots, and both the Certificates to Mr. H. Paddon, who also secured the Silver Cup offered for thirty-six cut blooms. Mr. Paddon was very successful in several other classes. The attendance on both days was very large, the entrance money being quite equal to last year, and the show was pronounced by several who had visited that at the Westminster Aquarium to be the superior of the two.

Obituary.

Peter Kieffer was the originator of the Kieffer Pear. All over the world of gardening probably the Kieffer Pear is known. Certainly in the United States, hundreds of thousands have been planted, and hundreds of thousands of dollars realized from its sale. The owner of the tree, a near neighbour of mine, received probably but a few hundred, if that much. It seems that the great circle that has derived so much pleasure and profit from his work, should at least know something of the man who died on November 7, at his home in the suburbs of Philadelphia. He was a Frenchman, born in Alsace, June 29, 1812. He arrived in New York, December, 1834. Failing in employment there, he walked through snow two feet deep to Philadelphia, 100 miles, and obtained a situation as gardener to the famous agriculturist James Gowen, of Mount Airy, near here, where he married and finally bought a few acres, and started a little market garden and small nursery. He was gifted with a superior knowledge of gardening as an art and as a science, but so exceedingly modest and child-like in all his intercourse with his fellow-men, that few knew of his superior accomplishments. He had some relative at Bollwyller in France, I believe some connection with Bauman, so well known to gardeners of the past generation, and his annual great delight was to receive a package of rare plants—chiefly of trees and shrubs. A very little money seemed a great deal to him, and those who were lucky enough to have the acquaintance of the good man, got many a bargain in rare plants from him. All around Philadelphia are numerous rare trees and plants, the history of which no one knows, and the mystery is usually finally settled by the remark "probably something introduced by Peter Kieffer." The Sand Pear of Japan, so far as relates to the older trees growing in this section of America, if not in other parts, he certainly introduced. Numerous trees were fruiting here between thirty and forty years ago — the fruit regarded as of no or little culinary value, but much esteemed for its delightful perfume. Mr. Kieffer raised seedlings from his tree, which were sold yearly from his little nursery. His tree grew close to a Bartlett (your Williams' Bon Chrétien), and the branches of the two interlaced. Some slight difference in one seedling was noted, and it was preserved from sale. This proved what is, from the above facts, reasonably believed to be a true hybrid, the Kieffer Pear. The fine red cheek, and some general appearance to the Flemish Beauty, has caused the statement to appear in our pomological works that it is a hybrid with the Flemish Beauty. Mr. K. grafted and sold a few here and there for five dollars each; but though he distributed among his few horticultural friends annually fruit that would make the most cold-souled epicure leap with joy, no effort was made by anyone to place it properly on the market. At length the great Centennial Exhibition came. Mr. Kieffer had some on exhibition; these excelled in size, beauty, flower—everything, indeed, for which any Pear could possibly be esteemed. The writer, who was Secretary to the Jury, can truly say that he remembers eating no Pear like them. They had a Medal, and a strong report in their favour; and Mr. Wm. Parry, a well-known introducer of new fruits, made an arrangement with Mr. Kieffer for grafts. In this way the variety got regularly into commerce. It may be said that gardening is no longer an art here, as it was in Mr. Kieffer's day. A fruit has to be "hardy," and "first-class;" just as Nature gives it to you. You plant the tree, but, to a very great extent, it must for ever after be able to take care of itself. Mr. Kieffer knew how to gather and how to cure his Pears; year by year, since 1868, when the Kieffer Pear first fruited, you could go to his house, and out of his cellar he would bring you fruits, the like of which you might not find elsewhere. Few, if any, can get Kieffer Pears as Kieffer had them, and the art has died with him. In our fruit lists it is simply classed as "valuable for market purposes," and the fruit chapters tell us it is "a very variable kind." Philadelphia is being fast covered with buildings over its vast area of 120 square miles. The original Kieffer Pear tree is still standing in Mr. Kieffer's grounds, but it will probably not be many years before the march of improvement will bid it begone. *Thomas Meehan, Germanstown Nurseries, Philadelphia, November 8.*

Edward James Ravenscroft.—We greatly regret to have to announce the sudden death of this gentleman, at Loudoun Road, London, N.W., on the 15th inst. Mr. Ravenscroft, who was in his seventy-fifth year, was originally a printer and publisher in Edinburgh, and as such was proprietor and Editor of the *Farmer*. He was also the printer and publisher of Lawson's *Pinetum Britannicum*, the entire management and proprietorship of which magnificent

publication eventually devolved upon him. The story of this enterprise was told in our columns on March 22, 1884. It grew out of a small catalogue, prepared for Peter Lawson & Co. By their aid, that of the Emperor Napoleon III., and a considerable body of subscribers, the larger work was undertaken, the assistance of Robert Brown, Lindley, and especially of our lamented friend, Andrew Murray, being invoked for the purpose. Owing to the disaster which befell Messrs. Lawson, and to the great expense and labour attendant upon the production, slow progress was made, and it seemed, at one time, as if the book was destined to remain a mere fragment. To keep faith with the subscribers, Mr. Ravenscroft, at great loss to himself, we believe, completed the publication, so far as obligation to the subscribers was concerned; the editorship of the latter parts, after the death of Andrew Murray, being confided to Dr. Masters. The whole of the original programme was indeed not carried out—perhaps it was as well it was not. The value to students of such gigantic and costly books is by no means proportionate to the cost and labour involved. Mr. Ravenscroft, on the completion of his larger enterprise, contemplated the publication of a smaller treatise, intended to give a full account of all the species of Conifers hardy in this country. Beyond the accumulation of materials, we believe nothing has been done in this matter, and Lawson's *Pinetum*, which should rather be called Ravenscroft's *Pinetum*, remains a "monumental" production, massive and sumptuous, but incomplete. Of late years Mr. Ravenscroft was, we believe, associated with his brother in the management of the Birkbeck Bank.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Accumulated. Above (+) or below (—) the Mean for the week ending Nov. 15.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	2 +	20	8	+ 196	— 97	3 —	235	50.7	18	24
2	1 +	13	28	+ 38	— 67	6 +	193	30.1	23	30
3	0 av.	17	28	+ 153	— 99	3 —	165	22.1	27	30
4	1 —	23	36	+ 66	— 33	3 —	163	20.7	34	38
5	0 av.	23	35	+ 38	— 36	1 —	160	20.6	37	33
6	1 +	41	13	+ 59	— 83	2 —	159	23.5	29	36
7	2 +	26	11	+ 97	— 102	9 +	200	47.8	26	31
8	0 av.	28	12	+ 142	— 98	3 +	188	32.0	16	30
9	0 av.	37	9	— 15	+ 2	2 +	192	33.5	29	36
10	1 +	29	11	+ 124	— 85	9 +	218	33.9	34	29
11	1 —	37	15	+ 131	— 36	9 +	202	36.5	39	33
12	2 +	55	0	+ 87	— 23	4 +	185	29.2	27	43

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending November 15, is furnished from the Meteorological Office:—

"The *weather* has continued in an unsettled condition very generally. Rain has fallen almost daily at most of the western and northern stations, but over the eastern, central, and southern parts of England, the falls have been slight, and less frequent.

"The *temperature* has been a little below the mean in 'England, E.,' and 'Ireland, S.,' but equal to the normal, or slightly above it, in all other parts of the kingdom. The highest of the maxima were registered on the 14th, when they varied from 50° in 'Scotland, N.,' and 55° in 'Scotland, W.,' to 59° in the 'Channel Islands,' and 61° in 'Ireland, S.' The lowest of the minima, which were recorded at most stations on the 10th, ranged from 24° in 'England, S.' and 'Ireland, N.,' to 33° in 'Scotland, N.,' and 39° in the 'Channel Islands.'

"The *rainfall* has been rather less than the mean over all the eastern, southern, and central parts of England, and also in the North of Scotland, but in all other districts it has been in excess, especially over Ireland, and the east and west of Scotland.

"*Bright sunshine* shows a slight increase on that recorded last week, the percentage of the possible amount having ranged from 16 in 'England, N.W.,' to 37 in the 'Midland Counties,' and 39 in 'Ireland, S.'"

MARKETS.

COVENT GARDEN, November 20.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. ED.]

PRICES remain as last week. Nova Scotia Apples in moderate supply, but the bulk is of inferior quality. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, ½-sieve	3 6- 7 0	Lemons, per case	20 0-40 0
— Nova Scotia, brl.	15 0-25 0	Melons, each	0 6- 2 0
Cobs, Kent, 100 lb.	65 0-70 0	Pine-apples, St. Michael, each	2 0- 6 0
Grapes, lb.	0 9- 2 9		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, each	0 4- 0 6	Lettuces, per dozen	1 6- ...
Beans, French, lb.	1 0- ...	Mushrooms, punnet	2 0- ...
Beet, red, per dozen	1 0- 2 0	Mustard and Cress, punnet	0 4- ...
Carrots, per bunch	0 6- ...	Parsley, per bunch	0 4- ...
Cauliflowers, each	0 4- 0 6	Shallots, per lb.	0 6- ...
Celery, per bundle	1 6- 2 0	Spinach, per bushel	3 0- ...
Cucumbers, each	0 4- 0 6	Tomatos, per lb.	0 9- 1 0
Endive, per dozen	2 0- ...	Turnips, per bunch	0 4- ...
Herbs, per bunch	0 4- ...		

POTATOS.—Supply during the past week has increased a little, but prices continue firm at last week's quotations. *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Ericas, various, doz.	8 0-18 0
Aspidistra, doz.	18 0-42 0	Ferns, in var., doz	4 0-18 0
— speci. plants, each	7 6-10 6	Ficus elastica, each	1 6- 7 0
Begonias, per doz.	4 0- 6 0	Foliage plants, various, each	2 0-10 0
Bouvardias, p. doz.	9 0-18 0	Heliotrope, per doz.	4 0- 6 0
Chrsanthem., p. doz.	4 0-18 0	Hydrangeas, doz.	9 0-18 0
— specimen plants, each	2 6- 5 0	Liliums, various, per dozen	9 0-18 0
Cyperus, per dozen	4 0-12 0	Marguerites, doz.	6 0-12 0
Dracæna terminalis, per dozen	30 0-60 0	Mignonette, per doz.	4 0- 6 0
— viridis, per doz.	12 0 24 0	Palms in variety, each	2 6-21 0
Euonymus, in var., per dozen	6 0-18 0	Pelargoniums, scarlet, per dozen	3 0- 6 0
Evergreens, in var., per dozen	6 0-24 0	Solanums, per doz.	9 0-15 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun.	2 0- 4 0	Pelargoniums, scarlet, 12 spr.	0 4- 0 6
Bouvardias, per bun.	0 6- 1 0	— dozen sprays	0 6- 1 0
Callæthiopica, 12 brl.	4 0- 8 0	Primulas, double, 12 sprays	0 6- 1 0
Carnations, 12 blms.	1 0- 2 0	Pyrethrum, 12 bun.	2 0- 4 0
Chrysanth., 12 bun.	3 0-12 0	Roses, Tea, per doz.	0 6- 2 0
— 12 blooms	1 0- 3 0	— coloured, dozen	3 0- 5 0
Eucharis, per dozen	3 0- 6 0	— red, per dozen	1 0- 2 0
Gardenias, 12 blooms	2 0- 4 0	— Safrano, French, per box of 100	4 0- 8 0
Heliotropes, 12 spr.	0 6- 1 0	— ditto, per dozen	1 0- 2 0
Hyacinths, Rom., 12 sprays	1 0- 2 0	Stephanotis, per 12 sprays	4 0- 6 0
Lilium, var., 12 bl.	2 0- 6 0	Tuberoses, 12 blms.	0 4- 0 6
Maiden Hair Fern, 12 blooms	4 0- 9 0	Violets, 12 bun.	1 0- 2 0
Marguerites, 12 bun.	3 0- 6 0	— Parme, Fr., bun.	2 6- 3 6
Mignonette, 12 bun.	2 0- 4 0	— dark, Fr., bun.	1 6- 2 6
Narcissus (paper white), 12 sprays	1 0- 2 0		
— French, 12 bun.	4 0- 9 0		

SEEDS.

LONDON: *Nov.* 19.—Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, London, E.C., report a meagre attendance of buyers on to-day's market, with a small amount of business passing. Clover seed all round, in the absence of transactions, call for no comment. Perennial and Italian Rye-grasses are just now neglected. There is no change in either Mustard or Rape seed. Blue Peas are firm, with a distinctly hardening tendency. For Haricot Beans there is an improved sale, at the low rates now current. Linseed is steady. Winter Tares find buyers on former terms. Canary seed is without alteration, but for Millet and Hemp seed higher prices are asked.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending November 15, and for the corresponding period last year:—1890: Wheat, 32*s.* 6*d.*; Barley, 29*s.* 3*d.*; Oats, 17*s.* 6*d.* 1889: Wheat, 30*s.* 2*d.*; Barley, 30*s.* 4*d.*; Oats, 17*s.*

FRUIT AND VEGETABLES.

SPITALFIELDS: *November* 19.—Good supplies of fresh vegetables, Potatos, &c.; demand only moderately active. Fruit trade good for an indifferent supply. Prices:—American Apples, 10*s.* to 22*s.* per barrel; English Apples, 3*s.* 6*d.* to 9*s.* per bushel; Pears, 3*s.* to 6*s.* per half-sieve; Tomatos, 4*s.* to 6*s.* per peck; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Curly Kale, 9*d.* to 1*s.* per bushel; Cabbages, 1*s.* 3*d.* to 1*s.* 9*d.* per tally; Savoys, 1*s.* 9*d.* to 3*s.* per tally; Cauliflowers, 2*s.* to 5*s.* 6*d.* do.; Spinach, 4*d.* to 1*s.* per bushel; Brussels Sprouts, 1*s.* 6*d.* to 1*s.* 9*d.* per half-sieve; Greens, 8*d.* to 1*s.* 3*d.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* do.; Parsnips, 4*d.* to 8*d.* per score; Beetroots, 3*d.* to 4*d.* per dozen; Carrots, 2*s.* to 3*s.* 6*d.* per dozen bunches; Parsley, 1*s.* to 2*s.* do.; Horseradish, 1*s.* 2*d.* to 1*s.* 4*d.* per bundle; Celery, 4*d.* to 10*d.* do.; frame Cucumbers, 1*s.* to 2*s.* 6*d.* per dozen; Leeks, 1*s.* to 2*s.* do.; Endive, 1*s.* to 1*s.* 6*d.* do.; Cabbage Lettuces, 9*d.* to 1*s.* do.; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; English Onions, 5*s.* to 5*s.* 6*d.* per cwt.; Spanish do., 6*s.* to 7*s.* 6*d.* per case; Belgian do., 2*s.* 6*d.* to 3*s.* per bag of 110 lb.; Dutch do., 2*s.* 6*d.* to 3*s.* do.; Carrots, 20*s.* to 50*s.* per ton.

STRATFORD: *November* 18.—There has been a good supply of all kinds of produce at this market during the past week, and a brisk trade was done at the under-mentioned quotations:—Cabbages, 2*s.* 6*d.* to 3*s.* 6*d.* per tally; Savoys, 2*s.* 6*d.* to 4*s.* 6*d.* do.; Cauliflowers, 3*s.* to 6*s.* do.; Turnips, 3*s.* to 3*s.* 6*d.* per dozen bunches; do. 32*s.* to 40*s.* per ton; Carrots, household, 40*s.* to 50*s.* do.; do., cattle-feeding, 25*s.* to 35*s.* do.; Mangels, 17*s.* to 18*s.* do.; Swedes, 18*s.* to 19*s.* do.; Onions, English, 90*s.* to 100*s.* do.; do. Dutch, 4*s.* to 4*s.* 6*d.* per bag; Apples, English, 3*s.* to 7*s.* per bushel; Watercress, 7*d.* per dozen; Celery, 6*s.* to 9*s.* per dozen rolls; Carrots, 2*s.* to 3*s.* per dozen bunches; Dutch Apples, 14*s.* to 15*s.* per barrel.

POTATOS.

BOROUGH AND SPITALFIELDS: *Nov.* 18.—Quotations:—Hebrons, 60*s.* to 90*s.*; Regents, 50*s.* to 75*s.*; Best do., 80*s.* to 100*s.*; Magnums, 55*s.* to 85*s.*; Scotch, 80*s.* to 100*s.*; Imperators, 60*s.* to 90*s.* per ton.

SPITALFIELDS: *Nov.* 19.—Quotations:—Magnums, 50*s.* to 70*s.*; Regents, 60*s.* to 90*s.*; Champions, 60*s.* to 65*s.*; Imperators, 55*s.* to 60*s.*; Hebrons, 50*s.* to 70*s.* per ton.

STRATFORD: *Nov.* 19.—Quotations:—Magnums, light, 60*s.* to 75*s.*; do., dark, 52*s.* to 60*s.*; Imperators, 55*s.* to 70*s.*; Hebrons, 65*s.* to 80*s.* per ton.

NOTICES TO CORRESPONDENTS.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

Books: *Ch. E.* There is now no good book on table decorations to be had. You will find a capital series of articles in *Popular Gardening* (Cassell & Co).—*A. G. Choice British Ferns, &c.* By C. T. Druery (Upcott Gill).

Brussels Sprouts: *C. Sharpe & Co.* A very fine sample of a short-stemmed Sprout, perhaps, the sprouts a little too large.

Carnation Fungus: *J. A. F.* It is very destructive. You will find a figure of it in our columns, August 17, 1889, and a full description, August 13, 1886. Burn the diseased plants.

Chrysanthemum: *Mayflower.*—We should not advise the propagation of the sport sent; there are sufficient varieties of that colour, and the flower is rough.

Chrysanthemum Sport: *G. H.* Not in good form, so that we cannot decide if it be an acquisition. What is Queen Victoria?

Coleus Seedling: *H. R. G.* Pretty, as some of these ephemeral subjects are at times, and worthy of propagation.

Hungarian Bell-Bind: *R. & Co.* We do not know any plant under this name, so cannot give the particulars required.

Names of Fruits: *D. M.* 1, White Doyenné; 2, Urbaniste; 3, Brown Beurré; 4, Beurré d'Aremberg; 5, Beurré d'Amanlis; 6, decayed; 7, Doyenné Bossouch; 8, Beurré de Capiaumont.—*Lymington.*—1, 2, not recognised; 3, Winter Hawthornden.—*W. S. & S.* 1, Nonsuch; 2, fruit not developed sufficiently for identification.

Names of Plants: *A. Mitchell.* 1, Deodar, probably; 2, Thuia gigantea (Lobbii of gardens); 3, Cupressus sempervirens; 5, Erica, sp. uncertain; 6, Jasminum nudicaule.—*Helen.* 1. Pseudotsuga Douglasi var.; 2, Cephalotaxus pedunculata fastigiata; 3, Juniperus virginiana glauca; 4, Ilex aquifolium Lawsoniana; 5, Juniperus chinensis aurea; 6, Taxus baccata elegantissima; 7, Platanus orientalis var. cuneata.—*H. J. R.* Phalænopsis Esmeralda.—*Nero.* 1, Rhododendron hirsutum; 2, Rhododendron not known; 3, Kerria japonica; 4, Kalmia latifolia; 5, Clematis flammula; 6, Garrya elliptica; none of your specimens had flowers.—*C. W. C.* 1, Specimen imperfect; probably Lastrea tenericaulis; 2, Nephrolepis exaltata; 3, Lastrea opaca; 4, Doodia caudata; 5, Send fertile frond; 6, Gymnogramma argyrophylla; 7, G. ochracea, 8, Adiantum Capillus-Veneris magnificum; 9, Davallia dissecta; 10, Nephrolepis tuberosa; 11, Adiantum assimile; 12, A. Capillus-Veneris.—*J. A. F.* Two vars. of Calanthe vestita luteo-oculata.

Pelargonium Leaves Diseased: *One who Wants to Know.* The Pelargonium leaves are infected with a minute (Ascomycetous?) fungus. The action is purely local, as far as can be made out, and it is hardly likely that it can do very great damage, except when very abundant. The fungus is very minute, and it is not obvious how its spread can be directly prevented, but we would advise plenty of room for the cuttings and plants, and that as little moisture as possible be allowed in the house. Of course, knowing the spots are due to a fungus, the grower should work as cleanly as possible, and remove and burn old leaves and soil. *H. M. W.*

Vine Border: *J. C.* Having given the border a dressing of all the various materials mentioned in your note, there is no need to cover it with litter; and as the Vines are not going to be forced, leave the border exposed to the winter frosts.

CATALOGUES RECEIVED.

Kelway & Son, Langport, Somerset—Wholesale List of Gladiolus.

T. Laxton, Bedford—Novelties of Vegetables, Flower Seeds, and Fruits.

W. P. Laird & Sinclair, Dundee, N.B.—Roses, Trees, and Shrubs, &c.

ENQUIRIES.

"*He that questioneth much shall learn much.*"—Bacon.

Aquarium Cement.—I should be much obliged if anyone could tell me of a good aquarium cement. I have tried several, but with no good results. The desideratum is a non-poisonous cement that will adhere to the glass. The difficulty seems to be, that on drying, the cements contract, and perhaps crack, or shrink away slightly from the glass, leaving a narrow crevice, through which the water forces itself by its great pressure. *Aquarium.*

Communications Received.—Ed. Webb & Sons.—R. Silberrad & Sons.—W. H.—M. A. C.—J. D.—A. D.—J. C. W.—G. F. W.—P. G.—W. R.—G. B. C.—D. D.—E. C.—C. G. van T.—E. D.—H. G. C.—W. D.—H. W. W.—J. R. J.—A. E.—W. H. Y.—A. A. Hurst, too late.—H. E.—Messrs. Sutton & Sons.—E. C.—J. L., Brussels.—J. W.—E. T. (please to let us see the photograph.)—F. C. Heinemann, Erfurt.—A. S. M.—H. E. Bitton.—H. E., Ryde.—Baron von Mueller, Melbourne.—A. O.—O. P., Genoa.—D. T. F.—W. B.

Photographs, specimens, &c., received with thanks.—E. J.—F. W. B.—Gerold's, Vienna.

VARIORUM.

Design in Cut Blooms.—The *Boston Globe* describes a new design in cut flowers as follows, and from what we hear from persons who saw it, the piece was truly magnificent:—"Immediately after George Thatcher had convulsed the audience at the Boston Theatre last evening with his original satirical song, "If you can stand that, you can stand anything," a magnificent floral tribute from his Boston friends, in the shape of a well-poised, life-sized representation of a coloured minstrel, in a sitting posture, holding a banjo, was borne down the centre aisle on the shoulders of two ushers, and handed over the footlights to the popular minstrel. The head was of Morning Brides, in striking contrast with the eyebrows and hair of gray Florida moss; the lips and teeth being of Immortelles of the proper colour. White Asters made up the shirt-front, collar, and sleeves, while the vest was a brilliant red of the same flowers. Red and white Asters were used in the representation of trousers of striped material, one leg of which was faithfully represented to have been caught up in the crossing of the limb, exposing to view the ebony-coloured Morning Brides. The banjo was faithfully represented, the whole making an elaborate display, and altogether worthy of florists J. Newman & Sons. *The Western Garden.*

Duty on Plants Imported into the United States.—Under the McKinley Bill, a duty of 20 per cent., *ad valorem*, is now levied on "plants, trees, shrubs, and Vines of all kinds known as nursery stock," imported into the United States. They were formerly admitted free. "Orchids, Lilies-of-the-Valley, Azaleas, Palms, and other plants, used for forcing under glass, for cut flowers, or decorative purposes," are still retained on the free list, and bulbs or bulbous roots, not edible, on which a duty of 20 per cent. was levied under the old law, are now placed on the free list. Garden and agricultural seeds, and other seeds not specially provided for, with a few exceptions, still pay 20 per cent., *ad valorem*, although the following are on the free list:—Anise, Canary, Caraway, Cardamom, Coriander, Cotton, Cummin, Fennel, Fenugreek, Hemp, Hoarhound, Mustard, Rape, St. John's Bread or Bean, Sugar-beet, Mangel-wurzel, Sorghum or Sugar-cane for seed, and all flower or Grass seeds. These changes are likely to make a very considerable difference in the horticultural business of the country. The admission of bulbs of flowering plants free of duty should largely increase the importations of these plants, and stimulate their cultivation in this country. The duty of 20 per cent. on so-called nursery-stock is likely to have unfortunate results. Some plants, like hardy Rhododendrons, hardy Azaleas, and certain Conifers, which require special climatic conditions, and much skilled labour, to produce to the best advantage, cannot be well grown in this country, and the duty must have the tendency of reducing the number of such plants used here. The retention of the duty on greenhouse plants, which, so far as their production goes, come under the same category as the plants already mentioned, is due to special efforts of the florists of the country. The duty will not affect, probably, the production of forest-tree seedlings in this country, and the only result will be to increase their cost to the planter. American nurserymen have already demonstrated their ability to produce better plants of this class at less cost than they can be imported for from any European country. The trade in Roses will probably be benefited by the duty, as it has been the habit of some Continental growers to glut this market yearly with their surplus and generally badly-grown stock, which under forced auction sales has demoralised prices, and made it difficult to find a market at fair prices for good plants grown in this country or in England. *Garden and Forest.*

CHRYSANTHEMUMS.

The best new and old English, Continental, and American. Cuttings of best old sorts, 1*s.* 6*d.* per dozen, 10*s.* per 100 Cuttings of some, and Plants of most of the New, now ready. See CATALOGUE, sent on application. A fine vigorous lot.

A. J. A. BRUCE,

THE NURSERIES, CHORLTON-CUM-HARDY, MANCHESTER

BASON'S WONDERFUL "NEW MILL-TRACK" MUSHROOM SPAWN

is the best, and has achieved more success than any other Spawn in the world, *vide* Press Notices and recent Testimonials, *with dates*, from leading authorities throughout the Kingdom. Price, 6*s.* per bushel of sixteen cakes, the largest ever offered (*cases and packing free*).

Sole Proprietor and only Manufacturer of the "New Mill-track" Mushroom Spawn for Home and Export, WILLIAM Dd. BASON, 25, Victoria Buildings, Wolverhampton.

Manufactories—Tempest Street; Town Wells Fold; and Finchfield, Wolverhampton.

For Green and Black Fly, American Blight, Camellia Scale, Red Spider, Mealy Bug, Brown and White Scale, Worms, Wood Lice, &c.

"PICRENA," THE UNIVERSAL INSECTICIDE.

SAFE—ECONOMICAL—EFFECTUAL.

15, Princes Street, Edinburgh, *July* 15, 1887.—"Dear Sirs, I have thoroughly tested a sample of a new Insecticide which you were so good to send me. At the rate of 1 oz. to a gallon of water at a temperature of 95°, I find it kills Green Fly immediately. Double this strength, or 2 oz. to a gallon at 120°, seals the fate of Scale of all sorts in a few seconds; while 3 oz. to gallon at same temperature effectually dissolves Mealy Bug, and so far as I have yet observed, without the slightest injury to leaf or flower, and it is withal a most agreeable compound to work with. All our insect remedies are applied through common syringe, or garden engine, a much severer test of efficiency than when applied by hand-washing or spray.—I remain, dear sirs, yours truly. (Signed) A. MACKENZIE," of Messrs. Methven & Sons.

Victoria and Paradise Nurseries, Upper Holloway, London, *January* 7, 1888. "Gentlemen—I have given your Insecticide, 'Picrena,' a good trial in competition with many others. I am pleased to say that I have found it to be more effectual in destroying Mealy Bug and other insects than anything we have ever used. It ought to command a good sale. (Signed) B. S. WILLIAMS."

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in Bottles at 1*s.* 6*d.*, 2*s.* 6*d.*, and 3*s.* 6*d.*; in Tins (1 and 2 gallons), 10*s.* 6*d.* and 20*s.* each; in quantities of 5 gallons and upwards, 9*s.* per gallon.

Prepared only by

DUNCAN, FLOCKHART & CO., Chemists to the Queen, Edinburgh.

May be had from B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London; and from WILLIAM EDWARDS and SON, 157, Queen Victoria Street, London.

LOAM for Vine and Fruit Tree Borders, Cheap, on Rail, near London, in turves.

RHODODENDRON PEAT, of fine quality; COCOA-NUT FIBRE REFUSE; BONE MANURES, the finest quality ground, Meal, ¼ to ½ inch; MUSHROOM SPAWN, TOBACCO-PAPER, RAFFIA and NEW ARCHANGEL MATS, CAMPBELL'S NEW FUMIGATING INSECTICIDE, and all other Garden Requisites of the best quality.

G. H. RICHARDS, Horticultural Sundriesman, 1, Belvedere Crescent, Lambeth, London, S.E. Chief Peat Dépôt, Ringwood, Hants.

EPPS'S SELECTED PEAT.

SPECIAL for Orchids, Choice Plants, Hardwooded and Fern do., and Rhododendrons. Excellent LEAF-MOULD, SAND, Rich LOAM, PEAT-MOULD, CHARCOAL, COCOA FIBRE, SPHAGNUM, and all GARDEN SUNDRIES. PEAT MOSS LITTER.—**EPPS & CO.,** The Peat Dépôt, Ringwood, Hants.

THE IMPROVED TREE PRUNER.—Coppin's Patent, specially mentioned in Mr. G. Bunyard's Lecture, see *Gardeners' Chronicle*, p. 440, October 18, 1890. Lists and Testimonials free, from Patentees, G. COPPIN and SONS, Addington, Surrey.

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Patronised by 16,000 of the Nobility, Gentry, and Clergy, for all kinds of

OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames, &c.

1 Cwt., and Oil Mixture, Free to all Stations.

Liquid Non-Poisonous Paints for Inside of Conservatories, &c. Prices, Patterns, and Testimonials, Post-free.

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BACHELOR'S WALK, DUBLIN.—*Discount for Cash.*

COCOA-NUT FIBRE REFUSE.

MESSRS. W. WOOD AND SON having purchased the whole of the out-put of the TWO LARGEST COCOA-NUT FIBRE MANUFACTURERS IN THE KINGDOM, beg to offer by Steamer, Canal, Rail and Road, as under :—

Per G.E. and G.W. Rys., for a Truck Load of 2 Tons, 16*s.*

By the Sack, put on Steamer, 3*d.* per Bushel (for 20 sacks and upwards). Sacks charged cost—returnable. If carted to L.N.W., G.N., or Midland Rys., 1*s.* 6*d.* per ton extra.

PEAT Broken, of the best quality, to clear ground, 5*s.* 6*d.* per yard; good general, in solid turves, from 8*s.* per yard; best quality HARDWOOD, for Stove Plants, from 11*s.* per yard; free on Rail, Hants.

SAND Coarse Crystal, best white, equally good quality, off colour, Free on Rail or by Steamer at Special quoted prices.

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FISH GUANO.—Ammonia, 8½ to 9½ per cent., Phosphate, 14 to 16 per cent., £6 19*s.* 6*d.* per ton. F.O.R.

TOBACCO PAPER.—Best quality, 70*s.* per cwt., in cases. ROPE, full of juice, 18*s.* per cwt.

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FRESH, RAW, CRUSHED to all sizes.

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ORCHID PEAT, best quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. RHODODENDRON and AZALEA PEAT. Samples and Prices to WALKER AND CO., Farnborough, Hants.

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RUSSIA MATS—New Archangel, 9 ft. 4 ins. by 4 ft. 6 ins., 22*s.* doz.; Heavy Petersburg, 7 ft. by 3 ft. 8 ins., 12*s.* doz. SPECIALITE TOBACCO PAPER, 10*d.* per lb., 28 lb. for 21*s.* TOBACCO CLOTH, 1*s.* per lb., 28 lb. for 26*s.* ORCHID PEAT, 8*s.* per sack. PEAT, LOAM, SAND, MANURES, and SUNDRIES. Price List free.—W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

PEAT.—JAMES SMITH, The Heath, Petersfield, Hants, is prepared to supply Gentlemen, Nurserymen, Gardeners, and others, with best quality PEAT. Established thirty years.—For terms, apply as above.

BROWN FIBROUS PEAT for ORCHIDS, 31*s.* 6*d.* per Ton, or 126*s.* per Truck of 4 tons; Bags, 5*s.* each; 10 Bags, 45*s.*

BROWN and BLACK FIBROUS PEAT, 25*s.* per Ton, or £5 per Truck of 4 Tons; Bags, 5*s.* each; 10 Bags, 45*s.*

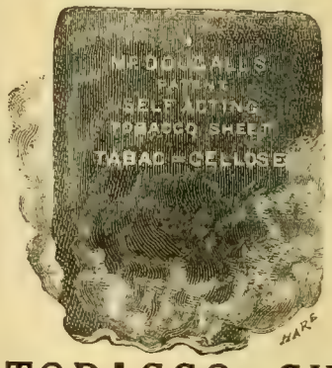
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PATENT SELF-ACTING.

No Hot Fuel required.

Exterminates all Insect Pests and Blight without injury to foliage.

TOBACCO SHEETS.

The sheets consist of Cellulose, and are saturated with Nicotine Solution of standard strength, and are so prepared that they will fume when a lighted match is applied.

Fumigation is thus rendered easy, certain, safe, and cheap.

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1*s.* Sheets (*for* 1000 *cubic feet in parcels of* 1 *dozen, also* ¼, ½, *and* 1 *Gross*), **12*s.* per Dozen** *Counted at* 13 *to the Dozen.*

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ORCHID PEAT, PEAT MOULD, &c.

QUALITY THE VERY FINEST.
(All sacks included.)

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Best selected Brown Fibrous Peat for **Orchids**	4/6	20/-	14/-
2nd quality do. do.	4/-	18/-	12/-
Best Brown Fibrous PEAT for **Rhododendrons, Azaleas, Heaths, Ferns,** &c.	3/6	15/-	10/-
2nd quality do. do.	3/-	12/6	8/
Superior Peat Mould do. ...	2/6	10/-	—
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The above prices subject to 2/- a yard reduction to purchasers of 4 yards and upwards bringing own carts to wood; a day's notice requested. Special terms quoted for carting within 15 miles of Bexley, according to distance.

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RUSSIA MATS:—	Per bund. of 10.	Per bund. of 25.	Per bund. of 100.
ARCHANGEL... ...	16/-	40/-	140/-
No. 1, Heavy	9/-	20/6	80/-
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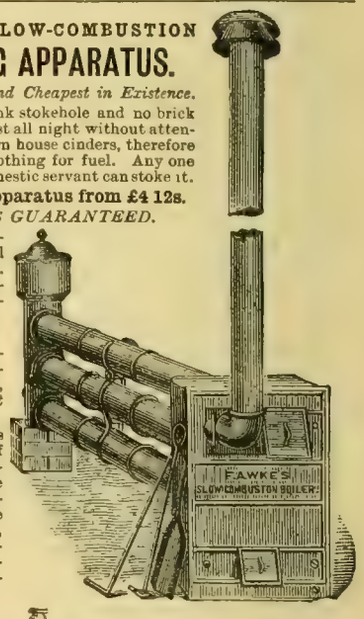
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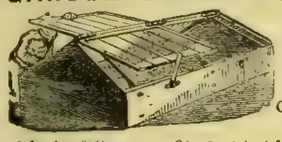
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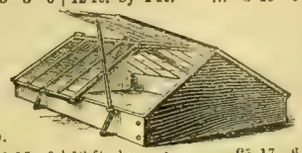
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CASH PRICES. CARRIAGE PAID.

6 ft. by 3 ft.	£2 0 0		6 ft. by 4 ft.	£2 7 6	
12 ft. by 3 ft.	3 3 0		12 ft. by 4 ft.	3 19 0	

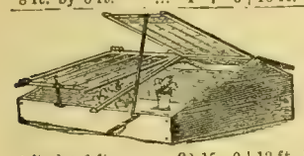
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NEW SPAN-ROOF GARDEN FRAME.



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4 ft. by 6 ft.	£2 15 0		12 ft. by 6 ft.	£5 17 6	
8 ft. by 6 ft.	4 7 6		16 ft. by 6 ft.	7 7 6	



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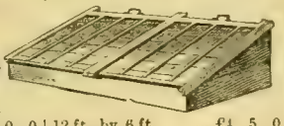
THREE-QUARTER SPAN GARDEN FRAME.

CASH PRICES, CARRIAGE PAID.

4 ft. by 6 ft.	£2 15 0		12 ft. by 6 ft.	£6 0 0	
8 ft. by 6 ft.	4 7 6		16 ft. by 6 ft.	7 12 0	

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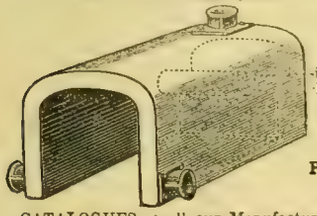
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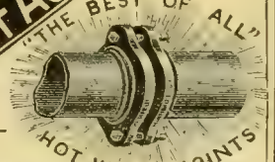
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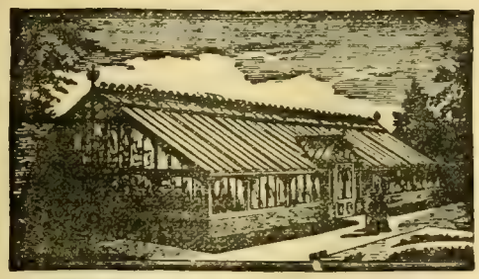
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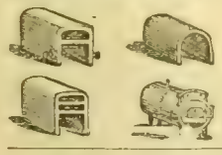
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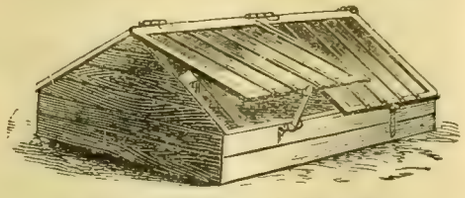
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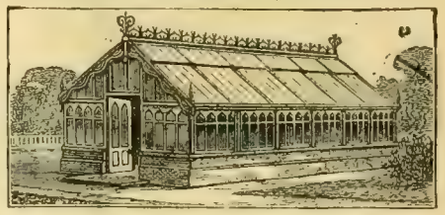
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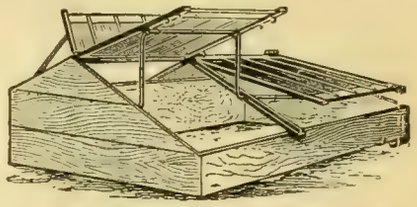
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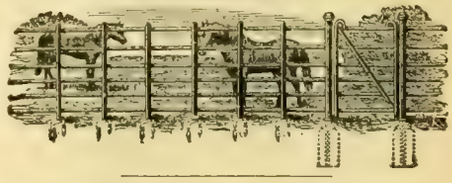
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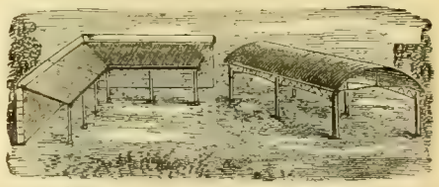
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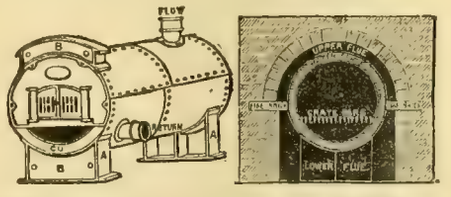
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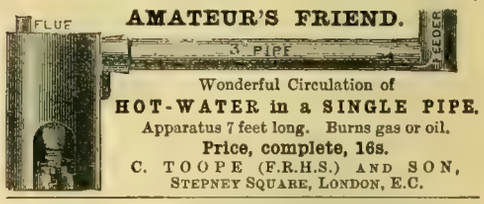
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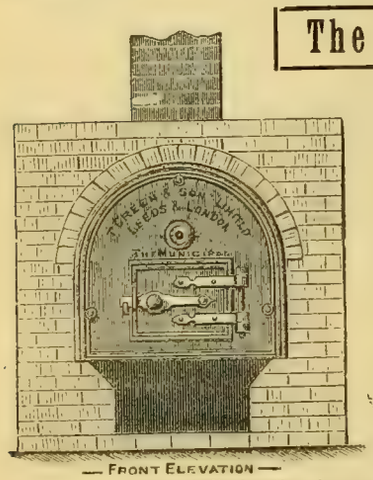
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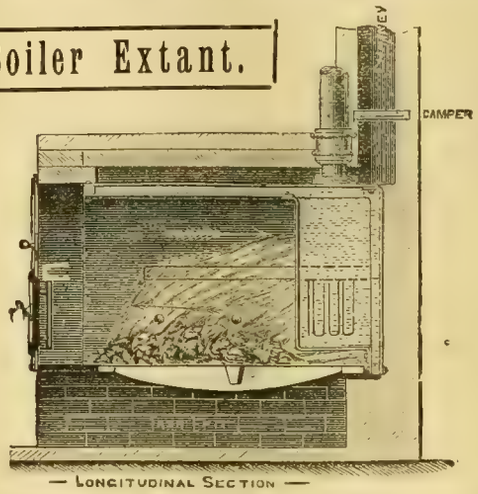
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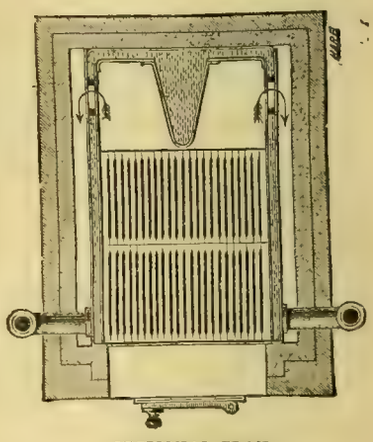
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Wednesday Next.

Choice Named, Standard and Dwarf ROSES, Pyramid and Dwarf-Trained FRUIT TREES, Hardy Ornamental SHRUBS and CONIFERS, AZALEA MOLLIS and INDICA, from Ghent; LILIUMS, from Japan; LILY OF THE VALLEY Clumps and Crowns, CARNATIONS, PINKS, and PICOTEES, SPIRÆA JAPONICA, fine collection of GLADIOLI and NARCISSUS, &c., &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 3, at half-past 12 precisely.

On view morning of Sale, and Catalogues had.

Thursday Next.

Immense Importations, just received from Japan in splendid condition, comprising 20,000 extra fine Bulbs of LILIUM AURATUM, 5000 L. LONGIFLORUM EXIMEUM, 2000 L. SPECIOSMUM ALBUM and RUBRUM, L. KRAMERII, and other LILIES; 5000 TUBEROSES and AMARYLLIS, from S. Africa; 15,000 Berlin LILY OF VALLEY Crowns. Also a large quantity of Dutch BULBS, choice sorts of GLADIOLI, DAFFODILS, BEGONIAS, ANEMONES, and many other BULBS and ROOTS.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 4, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.

GREAT UNRESERVED SALES.

Four times Weekly.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of Named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, together with white Roman HYACINTHS and Paper-white NARCISSUS, all received direct for Unreserved Sale, and lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Tuesday Next.

15,000 LILIUM AURATUM, splendid Bulbs, just received from Japan; English-grown LILIES in variety; a large assortment of NARCISSUS and DAFFODILS, and various HARDY BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, December 2, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday Next.

AZALEA INDICA and MOLLIS, CAMELLIAS, and other Plants from Belgium; a fine Collection of well-grown FERNS and GREENHOUSE PLANTS, from an English Nursery; a large variety of various HARDY BULBS, HERBACEOUS PLANTS, CHRISTMAS ROSES, strong imported Clumps; AFRICAN TUBEROSES, SPIRÆAS, about 300 lots of HYACINTHS, TULIPS, CROCUS, and other Bulbs.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C, on WEDNESDAY NEXT, December 3, at half past 11 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Bedford Nurseries, Haverstock Hill, N.W.

Clearance Sale of GREENHOUSE PLANTS, and General NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. R. J. Wood, who is relinquishing the Business, to SELL by AUCTION, on the Premises, The Bedford Nurseries, Haverstock Hill, N.W., near Chalk Farm Station, on WEDNESDAY and THURSDAY NEXT, December 3 and 4, at 12 o'Clock each day, the whole of the GREENHOUSE PLANTS, comprising the contents of 10 Greenhouses, 200 Specimen CAMELLIAS and AZALEAS, grown specially for cut bloom, the majority being white, and nearly all in pots and tubs; thousands of FERNS, PELARGONIUMS, and BEDDING PLANTS. Also about 2 acres of general NURSERY STOCK, including 5500 Golden and Green Euonymus, 1500 Laurels, 4 to 5 feet; Aucubas, Hollies, Flowering Shrubs, Standard Ornamental Trees, 1000 Irish Ivies, &c.

May now be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—The compact NURSERY, comprising about 3 acres of Land, 13 Greenhouses, Pits, Stabling, and large Show Conservatory, TO BE LET, on long Lease. Particulars of the Auctioneers.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will include in their SALE, on FRIDAY NEXT, some rare MASDEVALLIAS, including Masdevallia campyloglossa, Gaskelliana, Harryana Lowii, nidifica, punctata, radiosa. The original large species, trianistella, Wendlandiana, &c. Also some rare DISAS, crimson, blue, and white; and a few lots of handsome LISSOCHILUS, and other Terrestral ORCHIDS.

On view morning of Sale, and Catalogues had.

Friday Next.

MILTONIA MORELLIANA.

ONCIDIUM CURTUM.

SOPHRONITIS GRANDIFLORA.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, and 213, Park Road, Clapham, S.W., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, December 5, at half-past 12 o'Clock precisely, a large consignment of IMPORTED ORCHIDS, consisting of popular varieties specially adapted for the trade, including Miltonia Morelliana, Oncidium curtum, Oncidium Forbesi, Oncidium Sarcodes, Oncidium Harrisonianum, Oncidium crispum, Sophronitis grandiflora, Colaxjugosus, Lælia clnnabarina, Zygopetalum crinitum, Promenæa citrina and stapelioidis, Ornithocephalus grandifolius, &c. All the above plants are in remarkably fine condition, and sure to give satisfaction to buyers. The Sale will also include some rare Masdevallias and terrestrial ORCHIDS.

On view morning of Sale, and Catalogues had.

Friday, December 12.

MESSRS. PROTHEROE AND MORRIS beg to inform the public that they have been entrusted with the disposal, on the above date, of valuable, rare, and choice CYPRIPEDIUMS, the property of a gentleman who is selling for want of space. Further particulars will appear in a later advertisement.

On view morning of Sale, and Catalogues had.

Friday, December 12.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. Sander, to SELL by AUCTION, on the above date, 50 plants of LÆLIA GRANDIS, the majority of them in sheath, together with rare and valuable Importations.

On view morning of Sale, and Catalogues had.

December 8, 9, 10, 12, and 13.

GREAT NURSERY SALE.

Highly important 5 days' unreserved Sale of beautifully-grown NURSERY STOCK. Must be cleared off.

MR. JOHN OAKS ASH has been favoured with instructions from Messrs. Isaac Matthews & Son, the Old-established Wetley Moor and Milton, late Oaks and Bagnall Nurseries, near Stoke-upon-Trent, to offer for SALE by AUCTION, over 250,000 RHODODENDRONS in variety, large quantity of all the leading EVERGREENS, and other flowering SHRUBS, and Ornamental deciduous TREES, Larch, Scotch Spruce, Alders, Birch, Elm, Oak, Mountain Ash, Hornbeam, Poplars, and all other sorts of Trees for forest planting; quantity of Roses, Fruit Trees, and large quantity of extra strong Thorns, Evergreen Privet, Oval-leaf Privet, Hollies, Aucubas, Box, Portugal and Common Laurels, all clean, well-rooted, well furnished trees. The above are extremely hardy, and all have been recently transplanted.

The whole of the Lots offered for Sale will be on view one week prior to the sale. Catalogues may be had one week prior to the sale, on application. Luncheon each day at 10 o'Clock. Sale at 11 o'Clock prompt. Frequent trains from all parts to Stoke, on the main line. Cabs can be had at this station if required to convey those who wish to the Sale Grounds. Frequent trains to Milton, on the Biddulph and Leek Branch. All trains will be met by a conveyance to take purchasers to the above grounds. Purchasers are particularly requested to come early. The Nurseries, Milton, Stoke-on-Trent, Staffordshire.

Reading, Berks.

Bankruptcy of Oakshott & Millard.

To Seedsmen, Market Gardeners, Farmers, and Others.

MR. JOHN MILLER has received instructions from Mr. Walter Parsons, who has purchased of the Trustee in Bankruptcy the Goodwill and entire Stock-in-Trade of the Business of Messrs. Oakshott & Millard, Home and Export Seedsmen, to SELL by AUCTION, on the Premises, at Blagrave Street, Reading, on TUESDAY, December 9, at 10 for 11 o'Clock precisely, a large portion of the valuable STOCK OF SEEDS, including—in the Agricultural Department: Mangels, Swedes, Turnips, Cabbage, Grasses (Rye and Natural), and Clovers of sorts. In the Vegetable and Flower Department: Cabbage, Broccoli, Savoy, Cauliflower, Carrot, Beet, Brussels Sprouts, Onion, &c., and a large collection of the choicest kinds of Flower Seeds.

Together with the superior Appointments of Principals and Clerks' Offices, comprising Cylinder and Leg Writing Tables, Private Office Furniture, Clerks' Desks, Chairs and Stools, Book Cases, costly Show Cases and Stands, Pigeon-Holes and Side Fittings, Iron Safe, Speaking Tubes, Counters, Bins, Nests of Drawers, and other items.

The Seed-room Fittings, amongst which are Platform Weighing-machines, sets of Measures, Scales, Sieves, Scoops, Clover-dresser and Elevator (by Cooch), two Double Corn-screens (by Coleman & Morton), the complete Stands and Fittings for Agricultural Shows, and packing-cases for same, the whole in perfect condition, as used at the Royal Agricultural Society's Meetings (photograph may be seen at the Premises); also two useful HORSES, Harness, a newly-built Spring Van, two capital Dog Carts, Business Cart, Yard and Stable Utensils, and miscellaneous effects.

N.B.—Mr. Parsons has decided not to carry on the Seed Trade at present, but he will continue the Seed Corn Trade as usual at his own premises, adjoining those lately occupied by the Bankrupts.

May be viewed and Catalogues obtained four days prior to Sale on application at the Place of Sale, or at the Auctioneer's Offices, 37 and 38, Market Place, Reading.

WANTED TO RENT (at once), a NURSERY, with good Greenhouses, suitable for growing Market Stuff.

G. CARR, Fern Villa, Weybridge.

FOR SALE, as a going concern, NURSERY and SEED BUSINESS (old-established).—For full particulars, apply, W. BENNETT, Accountant, Burton-on-Trent.

FREEHOLD LAND, suitable for Garden, Fruit, or Poultry. Lovely neighbourhood, near Whitchurch, Hants; 58 acres, not less than 5-acre lots; or exchange for HOUSE PROPERTY.

B. DOWNES, 52, Cheapside, London.

TO BE SOLD CHEAP, ten years' LEASE of about 4 acres of good GARDEN GROUND, on which are four well-built Glasshouses, each 100 feet long, heated and stocked, and large potting sheds. Twelve miles from London adjoining railway Station.

Apply, J. SIDERFIN, Abbey Wood, Kent.

Important Notice.

To FLORISTS, NURSERYMEN, MARKET GARDENERS, &c.

TO LET, an Old-established BUSINESS, with about 6 acres of splendid Land, well filled with a general assortment of Nursery Stock, situate in the finest position in the County, close to famous market town of Chippenham.—Apply to GEORGE HATHAWAY, Churn Manufacturer, Chippenham.

Landscape Gardening.

MR. ARTHUR M. KETTLEWELL, LANDSCAPE GARDENER, having great experience in all matters pertaining to the artistic arrangement or re-arrangement of Grounds, IS READY TO UNDERTAKE the Designing and Laying-out of Private or Public Gardens, Parks, Cemeteries, &c. Send for his Manual on the "Art of Landscape Gardening," excellently reviewed by nearly all the leading Gardening Papers, post-free, 7*d*.

Address, Titley House, Titley (R.S.O.), Herefordshire.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

NEW DESCRIPTIVE PRICED CATALOGUE

Post-free on application to

THE VINEYARD AND NURSERIES,

GARSTON, near LIVERPOOL.

ORCHIDS.

BRAZILIAN ORCHIDS supplied to the Trade in large or small quantities.

CATALOGUES and particulars on application.

A. H. GRIMSDITCH (Importer), 5, Clayton Square, Liverpool.

Sole Agent for CARLOS TRAVASSOS, Rio de Janeiro.

TO PLANTERS.

We hold a large Stock of the following, all well transplanted, and can offer them at a cheap rate:—

ARAUCARIA IMBRICATA, 2 to 5 feet.
CEDRUS DEODARA, 10 to 16 feet.
CUPRESSUS LAWSONIANA, 3 to 6 feet.
" " NANA, 2 to 5 feet.
" " LUTEA, 1 to 2½ feet.
" " ERECTA VIRIDIS, 2 to 4 feet.
PICEA NORDMANIANA, 2 to 4 feet.
" NOBILIS, 3 to 6 feet.
RETINOSPORA PLUMOSA, 1 to 6 feet.
" " AUREA, 1 to 6 feet.
" SQUARROSA, 1 to 6 feet.
" PISIFERA, 4 to 6 feet.
THUIOPSIS DOLABRATA, 2 to 6 feet.
" BOREALIS, 3 to 5 feet.
THUIA LOBBII, 4 to 7 feet.
ABIES DOUGLASII, 4 to 8 feet.
American ARBOR-VITÆ, 3 to 5 feet.
Irish YEW, 6 to 8 feet.
GOLDEN YEWS, 4 to 6 feet by 4 to 6 feet in diameter.
SEEDLING GOLDEN IRISH YEW, 2 to 5 feet.
AUCUBA JAPONICA, 1 to 3 feet.
LAUREL CAUCASICUM, 2 to 6 feet.
" ROTUNDIFOLIA, 2 to 5 feet.
" LATIFOLIA, 2 to 6 feet.
" Common, 2 to 6 feet.
MAHONIA, BOX, YEWS, HYPERICUMS, &c., &c.
DEUTZIAS, PHILADELPHUS, WEIGELIA, GUELDER ROSE, LILAC, &c., &c.
RHODODENDRONS, with buds, 2 to 6 feet.
" Standards, 4 to 5 feet stem, heads, 2 to 3 feet.
AZALEA MOLLIS, with buds.
KALMIAS, PERNETTYAS, HEATHS, &c.
HORSE CHESTNUTS, 6 to 18 feet.
SYCAMORE, 10 to 18 feet.
BIRCH, 10 to 16 feet.
NORWAY MAPLE, 10 to 14 feet.
FRUIT TREES and ROSES in great variety.

CATALOGUE free on application.

H. LANE AND SON, The Nurseries, Berkhamsted, Herts.

SPECIMEN AZALEAS, PALMS, DRACÆNAS, &c.; chiefly Azaleas, double white, at £4 per 100, are from 8 to 10 inches across; at £5 per 100, from 10 to 12 inches.

We have a lot of larger ones, which are very nice plants.

All kinds of FOLIAGE and FLOWERING STOVE and GREENHOUSE PLANTS, unequalled in Europe.

Sizes and prices will be quoted on application.

EMILE COPPITTERS, Nurseryman, Dumpcort, Ghent, Belgium.

CHRYSANTHEMUMS. — Strong Cuttings best old sorts, buyer's selection, 1s. 6*d*. per dozen, 10s. per 100. For price of new sorts, see CATALOGUE. Many of the best prizes in the country are taken by my customers.—WM. ETHERINGTON, Chrysanthemum Grower, Swanscombe, Kent.

JOHN PERKINS AND SON beg to invite inspection of intending Planters to their large Stock of the following strong transplanted, and well rooted:—

FOREST TREES.

ASH, 2 to 3 and 3 to 4 feet.
BIRCH, 2 to 3 and 3 to 4 feet.
LARCH FIRS, 2 to 3 and 3 to 4 feet.
SPRUCE FIRS, 1½ to 2 and 2 to 2½ feet.
SCOTCH FIRS, 1½ to 2 feet.
OAKS, English, 2 to 3 and 3 to 4 feet.
PINUS AUSTRIACA, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
,, LARICIO, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
SYCAMORE, 2 to 3 and 3 to 4 feet.

Plants for Fox and Game Coverts, Hedges, &c.

BERBERIS AQUIFOLIA, 1 to 1½ and 1½ to 2 feet.
BLACKTHORN, 1½ to 2 and 2 to 3 feet.
COTONEASTER SIMMONSII, 1½ to 2 and 2 to 3 feet.
DOGWOOD, Red, 2 to 3 feet.
HAZEL, 2 to 3 and 3 to 4 feet.
HORNBEAM, 2 to 3 feet.
LAUREL, common, 2 to 3 and 3 to 4 feet.
,, caucasica, 2 to 3 and 3 to 4 feet.
,, rotundifolia, 2 to 3 and 3 to 4 feet.
,, Portugal, 1½ to 2 and 2 to 3 feet.
LAURESTINUS, 1½ to 2 and 2 to 3 feet.
PRIVET, Evergreen, 2 to 3 and 3 to 4 feet.
PRUNUS MYROBALANA, 1½ to 2 and 2 to 3 feet.
ST. JOHN'S WORT, strong transplanted.
SNOWBERRY, 2 to 3, and 3 to 4 feet.
THUJA LOBBII, 2 to 3, and 3 to 4 feet.
English YEWS, 1½ to 2, 2 to 3, and 3 to 4 feet.
QUICK or WHITETHORN, strong, and extra strong, transplanted; &c., &c.

Special offers, free on application.
The Old-established Nursery and Seed Business,
52, Market Square, Northampton.
Nurseries—Billing Road.
Telegraphic address—"QUICK, Northampton."

FOREST TREES, and COVERT PLANTS.

BEECH, extra strong, transplanted, 3 to 4 feet, and 4 to 5 feet.
HORNBEAM, strong for hedges, 3 to 4 feet, and 4 to 6 feet.
LAUREL, common bushy, 1½ to 2 feet, 2 to 3 feet, and 3 to 5 feet.
OAK, English, extra strong, 3 to 4 feet, and 4 to 5 feet.
PINE, Austrian, specimens, 3 to 4 feet, and 4 to 5 feet.
PRIVET, evergreen, bushy, 2 to 3 feet, 3 to 4 feet, and 4 to 5 feet.
THORN, Quick, extra strong, transplanted, 1½ to 2 feet, and 2 to 3 feet.
CHESTNUT, Horse, fine specimen Avenue trees, 10 to 16 feet.

Large quantities of the above, and other Nursery Stock, well-rooted and cheap, of which a priced CATALOGUE may be had, post free.

R. TUCKER, The Nurseries, Faringdon, Berks.

PYRACANTHA LALANDI (Burning Bush), fine plants, 3 to 4 feet, in pots, 12s. per doz.
Irish IVIES, in pots, 5 to 6 feet, 12s. per doz.; 6 to 8 feet, 18s.; 8 to 10 feet, 24s.; 10 to 12 feet, 36s. per doz.
RHODODENDRONS, beautifully set with buds, named hybrids, 18s. and 24s. per doz.; seedlings, 6s. and 9s. per doz.

Descriptive Price LISTS of Plants, Bulbs, Seeds, and all Garden Requisites, free on application.

W. FROMOW AND SONS, Sutton Court Nurseries and Seed Establishment, Chiswick, London, W.

BULBS—BULBS—BULBS.—Our stock of Dutch Bulbs is quite ready for inspection. Customers at liberty to come and select for themselves at the—
NEW HAARLEM BULB WAREHOUSES,
34, Mansell Street, Aldgate, City, London.
Proprietors—MICHAEL RAINS AND CO.
Reg. Tel Address—"BIOTICUS, London." Established 1856.
CATALOGUE on application.
Named HYACINTHS, 2s. 6d. per doz. 1st size Bulbs of any sort.

HARDY AZALEAS.—A selection of the most beautiful, many of which were raised in this Nursery, well furnished plants, covered with buds, from 1½ to 3 feet high.

AZALEA MOLLIS.—Very fine plants up to 2½ feet, well budded.

AZALEA OCCIDENTALIS × MOLLIS.—White, with lemon blotch—very beautiful, offered for the first time.

ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

Standard Trees! Standard Trees!
For Avenue and Street Planting.

JOHN PERKINS AND SON beg to offer fine LIMES, 8 to 10, and 10 to 12 feet.
SYCAMORE, 8 to 10, and 10 to 12 feet.
BIRCH, 8 to 10, and 10 to 12 feet.

The above are stout, well-grown Trees, with straight stems, and good roots. An inspection invited.

The Old-established Nursery and Seed Business, 52, Market Square, Northampton. Nurseries—Billing Road.
Telegraphic address—"QUICK, Northampton."

To Gentlemen Planting.

SPECIAL OFFER of TREES for Immediate Effect. All prepared for removal. Each plant a Specimen. Root matted, and put free on rail for Cash:—

ABIES DOUGLASSI, 10 to 12 feet, 7s. 6d. each.
CRYPTOMERIA ELEGANS, 5 to 6 feet, 2s. 6d. each.
CUPRESSUS LAWSONIANA, 8 to 10 ft., 5s; 10 to 12 ft., 7s. 6d.
PICEA LASIOCARPA, 5 to 6 feet, 7s. 6d. each.
,, NORDMANNIANA, 6 to 8 ft., 5s.; 8 to 12 ft., 7s. 6d. each.
THUIA LOBBI, 8 to 10 feet, 3s. 6d.; 10 to 14 feet, 7s. 6d. each.
,, VERVAEANA, 5 to 6 feet, 5s. each.
,, ELLWANGERIANA, 4 to 6 feet, 3s. 6d. each.
THUIOPSIS BOREALIS, 9 to 12 feet, 7s. 6d. each.
WELLINGTONIA, 6 to 8 feet, 7s. 6d. each.
YEWS, 5 to 7 feet, 5 feet through, 5s. each.
YEWS, untrimmed, for hedges, 5 to 6 feet, 3s. 6d. each.
CEDRUS DEODARA, 6 to 8 feet, 5s.; 8 to 10 feet, 7s. 6d. each.
LAURUSTINUS, 3 to 4 feet, bushy, 18s. per dozen.

ALSO
Extra strong HAWTHORN QUICK, 3 to 5 feet, 35s. per 1000.
CHARLES WHITING, White Cross and Cemetery Nursery, Hereford.

HARDILY-GROWN

FRUIT TREES

TRUE TO NAME: LARGEST STOCK IN THE KINGDOM, Including all the most Popular and Profitable Kinds in Cultivation.

Descriptive Priced List Free on application.

DICKSONS The Nurseries, CHESTER
(Limited).

CHRYSANTHEMUM, LOUIS BŒHMER.

PITCHER & MANDA,

The United States Nurseries

SHORT HILLS, N.J., U.S.A., and HEXTABLE, SWANLEY, Kent, England.

The Original Introducers to Europe of the two Hairy Chrysanthemums—

MRS. ALPHEUS HARDY & LOUIS BŒHMER,

of which we have an extra fine stock, WARRANTED TRUE, as shown by us at the Great Centenary Chrysanthemum Exhibition, Royal Aquarium, Westminster, Nov. 11, 12, 1890, &c.

All orders executed in strict rotation. Price on application.

Our new and descriptive Catalogue ready in January, post-free.

All communications to be addressed to—

A. J. MANDA,
The United States Nurseries, Hextable, Swanley.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON, Nurserymen and Seed Merchants, Highgate Nurseries, N.

ROSES of Best Quality at Lowest Prices.

12 Standards, good heads, and finest sorts, 15s.; 100, £5. 12 grand Dwarf or Bush Roses, 6s.; 100, £2 2s. 12 Climbing Roses, strong plants, 8s. 12 Moss Roses, in variety, 6s. Selection left to me, but only good plants and sorts sent—sure to please all buyers. Purchasers selection at slightly increased prices. Packing free. Cash with Order. CATALOGUE on application.

SEAKALE, fine roots for Forcing and Planting, 10s., 8s., and 6s. per 100.

S. C. RUMSEY, ROSE FARM, WROTHAM, KENT.

The Best Present for a Gardener.

VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5s., post-free 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

Special Offer.
PINUS LARICIO.—PINUS LARICIO.

JOHN PERKINS AND SON offer PINUS LARICIO, extra transplanted fine stuff, with good roots, 1½ to 2½ feet, 10s. per 100; 70s. per 1000.

The Old-established Nursery and Seed Business, 52, Market Square, Northampton.
Telegraphic Address—"QUICK, Northampton."

BARR'S AUTUMN CATALOGUES, free on application.

BULBS OF FINEST QUALITY for all seasons, including many rare and beautiful Bulbs and Tubers.

DAFFODIL CATALOGUE, contains the only complete collection of these beautiful hardy spring flowers, with a List of cheap and showy sorts for large plantings.

PLANT CATALOGUE, describing the best Hardy Herbaceous Perennials for Borders, Rockwork, and Cutting.

BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

TRANSPLANTED FOREST TREES, &c.—Good and Healthy Stock of Alder, Ash, Beech, Birch, Chestnut, Elm, Golden Elder, Hazel, Oak, Austrian Pine, Scotch Spruce, and Silver Firs; also many thousands Strong Thorns and Hornbeam, at very low prices.

Samples on application.
JOS. TREMBLE AND SON, The Nurseries, Penrith.

Evergreen Hedges.—Evergreen Hedges.

JOHN PERKINS AND SON offer:—
ENGLISH YEWS, 3 to 4 feet, 100s. per 100.
THUJA LOBBII, 3 to 4 feet, 70s. per 100.

Fine bushy stuff, all recently transplanted, good fibrous roots.

The Old Established Nursery and Seed Business, 52, Market Square, Northampton.
Telegraphic Address—"QUICK, Northampton."

For Sale.—Extra-sized bearing Peach Trees, from Walls.

WICETON has a few very fine well-balanced, fibrously-rooted Trees to offer, reasonable, viz., Royal George, Half-Standards and Dwarf-trained; Noblesse, Alexander Noblesse, Hale's Early, and other varieties, from 6 to 15 feet through. Prices on application.
Putney Park Lane, S.W.

SCARLET CARNATION "Al. Alegatière."—A most handsome free flowering Tree Carnation, of sturdy compact habit, and bearing in great profusion well-formed brilliant scarlet flowers of great substance.

FINE STRONG PLANTS, covered with buds, in different stages, now ready to pot up for Winter-flowering in Greenhouse. Special cheap offer. 50s. per 100, 7s. 6d. per dozen.

Samples may be seen at 12, King Street.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-yr. old flowering Crowns for forcing, and 2 and 1-yr. old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.

T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

SCOTCH GROWN ROSES.
HYBRID PERPETUALS, from 7s. per dozen.
TEAS, in great variety, from 12s. per dozen.
STANDARDS, from 24s. per dozen.
MOSSES, from 9s. per dozen.

Package and carriage free. All true to name, and well-rooted.
CATALOGUES on application.
THYNE'S, 83, St. Vincent Street, Glasgow.

LARGE BUYERS (also Agents) WANTED for 100 to 200 Ko. German Large-flowered, Summer Stock, GILLIFLOWER SEED, this year's crop. Most superior quality. Any desired quantity given.—Apply to B. 204, care of Haasenstein & Vogler, A.-G., Hamburg.

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ABIES CANADENSIS (Hemlock Spruce), 5 to 8 feet.
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,, ,, GLAUCA, 5 to 7 feet.
,, HOOKERIANA (Pattoniana), 3 to 4 feet.
CEDRUS ATLANTICA, 4 to 7 feet.
,, ,, GLAUCA, 3 to 6 feet.
,, LEBANI (Cedar of Lebanon), 4 to 9 feet.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 4 to 8 feet.
,, ,, LUTEA (Golden), 3 to 6 feet.
JUNIPERUS CHINENSIS AUREA (Golden Chinese Juniper), [3 to 8 feet.
PICEA CONCOLOR, 3 to 7 feet.
,, GRANDIS, 5 to 8 feet.
,, LASIOCARPA, 4 to 8 feet.
,, MAGNIFICA, 3 to 5 feet.
,, PUNGENS, 1½ to 4 feet.
,, ,, GLAUCA (Blue Spruce), 1½ to 4 feet.
PINUS AUSTRIACA, 3 to 7 feet; P. LARICIO, 3 to 4 feet.
RHODODENDRONS, from 3 to 8 feet.
THUIOPSIS BOREALIS, 4 to 6 feet.
,, DOLABRATA and VARIEGATA, 3 to 7 feet.
THUIA LOBBII (gigantea), 5 to 7 feet.
,, OCCIDENTALIS LUTEA (Golden), 3 to 5 feet.
,, WARREANA, 3 to 4 feet, and 8 to 9 feet.
WELLINGTONIA GIGANTEA, 3 to 4 feet.
YEWS, Common, 3, 4, and 5 feet.
,, Golden, of all sizes up to 10 feet, in various forms, Pyramids, Globes, and Standards, in point of variety, size, and quantity unequalled.
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AUCUBA JAPONICA, 2½ to 4 feet.
BAMBUSA METAKE, fine clumps, 4 to 7 feet.
BOX, Green and Variegated, 3, 4, 5, and 8 feet.
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,, HODGINS or NOBILIS,
,, LAURIFOLIA,
,, MYRTIFOLIA,
,, SCOTTICA,
,, Yellow berried, and other sorts } 3, 4, 5, up to 10 feet.
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,, Weeping Perry's (Silver Variegated), on straight stems, with heads of 10 to 15 years' growth.
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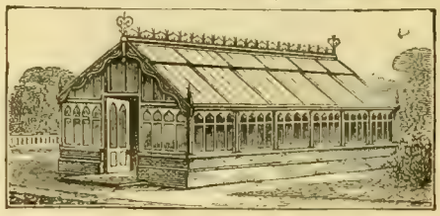
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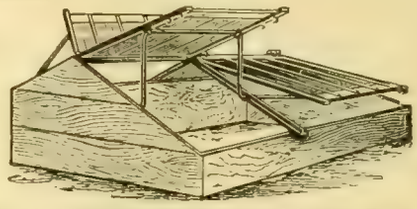
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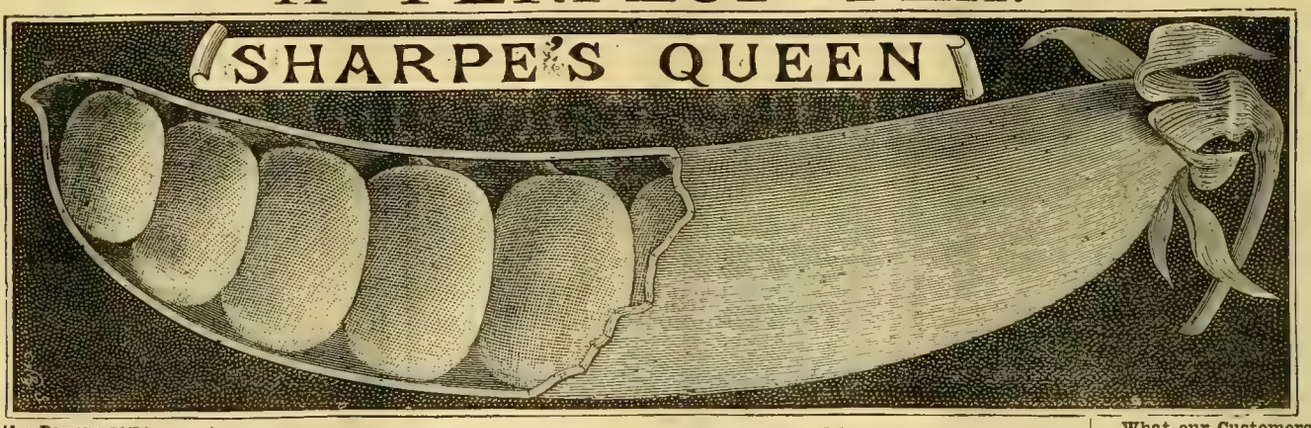
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Gardeners' Magazine, Sept. 6, 1890.—"Sharpe's Queen Pea, in a fresh green state for the market or the table, on the 3rd of September, is an interesting subject. The samples sent, of excellent quality, were from a sowing made the second week in May. The pods are long, packing close, and carrying well. The Peas are of full average size, and of a full green colour. Such a Pea SHOULD MEET WITH UNIVERSAL FAVOUR."

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THE
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SATURDAY, NOVEMBER 29, 1890.

WORSLEY HALL.

SIR THOMAS EGERTON, Lord Chancellor, and a friend of Milton, who wrote *Comus* in his honour, was the founder of the family now represented by the Earl of Ellesmere, the owner of Worsley Hall. The son of Sir Thomas became Earl of Bridgewater, and the fourth Earl became the first Duke of that name, and was the first dreamer in England about canals and inland navigation. The visions of genius often become realities, and the Duke's second son, Francis, third Duke, became the builder of the Bridgewater Canal, which opened navigation from the coal-mines of Worsley to Manchester. From the canal bridge in the village of Worsley we looked into the pool which forms a basin for the narrow coal-barges, and the head of the navigation. Two low arches lead into the sandstone cliff, at whose foot the basin lies, and the canal entering the larger aperture extends six miles into the hill. Forty-two miles of subterranean canals open up the mines between this spot and the neighbourhood of Bolton. The spot is attractive, and so is the subject, but I must be content to refer to Smiles's "Life of James Brindley," in his *Lives of the Engineers*, where an excellent picture of Worsley Basin, showing the foliage of shrubs, and trailers overhanging its precipitous sides, with the graceful spire of the church in the background, will be found. I must refer to the same work for the story of the Duke's difficulties, his zeal and his housekeeping at Worsley on £400 a-year for a time, with his ultimate success and enormous wealth.

The famous duke was a very indifferent gardener. He would have neither conservatory, pinery, flower garden, nor shrubbery at Worsley; and once on his return from London, finding some flowers which had been planted in his absence, he whipped their heads off with his cane, and ordered them to be rooted up. Nevertheless, he seems to have put up with the planting of some Turkey Oaks about the place. This rough, gruff, unlettered and eccentric character, energetic, tough and strong like the people of Lancashire

amongst whom he lived, with his smoke and his snuff, and his short strong snorts, his provincial thees and thous, and his frequent expletives, died in 1803. After him Worsley went, by bequest, to the Marquis of Stafford, afterwards Duke of Sutherland, and then to his second son Lord Francis Gower, who took the name of Egerton, and was created Earl of Ellesmere in 1846. It was this owner of the larger part of the great property created by the Bridgewater Canal, who built the present Hall near the old one which had been occupied by the burly duke.

Entering the grounds by the lodge in the village street, there is a ridge of high ground on the right hand, on the top of which stands a monument to the first Earl of Ellesmere. One soon discovers in approaching the house, that if the duke cared not for gardening, his successor does so in a marked degree. The grass terraces on the right of the carriage drive —formed at the base of the hill—are exceedingly handsome. In fact, landscape gardening and horticulture have found in the Earls of Ellesmere magnicent patrons. Thirty-two gardeners keep this grand place in order. The shrubberies are extensive, the kitchen gardens quite first-rate, and the flower-garden in front of the Hall affords a fine example of terraced gardening. The house stands on a slope, and is well-sheltered behind by the wooded ridge of the same hill that the canals have honeycombed underneath. A level site was formed for the house, and this level space includes a wide sweep of gravel and carriage drive between the house and the hill. The entrance, with its handsome porch, on this, the northern side, of the house. The southern, eastern, and west fronts all look upon the flower garden, and most of the windows look beyond it, over an ornamental sheet of water, and across the park to the canal which runs along its whole length, and forms its furthest boundary.

The great feature of Worsley consists in its terraces, and in the ornamentation of the extensive area they cover, by means of beds for flowers, foliage and other plants. This southern front commands Chat Moss in the distance, and the town of Patricroft on its edge; and I suppose a greater contrast could nowhere be found than that of the dreary treeless Moss and this highly-cultured garden. On the one hand, we have such plants of low type as Nature has provided for an almost bottomless swamp, with some pasture grasses covering the firmer portions of the Moss, and some not very successful farming here and there, and as a set-off to this quagmire, which shakes as the trains pass over it, you have for your delectation several acres of the most costly kind of outdoor floriculture. The bedding-out system is carried on here with all the resources of modern art, with free use of all the plants that have been recently employed for that purpose.

The slope from the mansion to the level of the park is divided into five terraces of unequal length and breadth, each communicating with the other by steps and winding walks; and it may safely be asserted that the landscape gardening and engineering necessarily resorted to in carrying out a highly artificial arrangement has been applied with such success that the formality which invariably attends a series of terraces has been to a great extent obviated, while the general effect is at once magnificent and pleasing.

It should be understood the terraced ground is longer than the front of the house. The main terrace is supported by a wall of stone, covered by a Wistaria, and a handsome Holly fence affords relief to another terrace, without obstructing the view from the windows. A fence of this sort on the bottom terrace would have been a great mistake, serving in effect to level up what is intended as a slope descended by successive steps. The hedge is, in fact, on an upper level, but not in front of the windows, and it serves as one of the devices by which the monotony of constantly repeated flower-beds is averted. There must, of course, be formality in carrying out the general design, but it is a dignified formality, suited to the edifice of which these terraces form the foreground. The space being so great, the beds must needs be almost innumerable, and the plants used in them are countless. A large coloured chart could alone give any idea of the details. One perceives at once the refinement of taste manifested in all parts of the plan, and the extensive resources of the establishment which supplies the necessary materials for carrying it into effect. The most ornate beds are those nearest the house, while in the lower terraces plainer materials have been applied; or in case some persons should object to the word plain, as applied to some of the best and most brilliant of the older bedding plants, it would be better to say that the newest style, with the use of the more rare and costly plants, has been applied on the upper terraces, and an older fashion below. The general effect is ornamental in a high degree.

Quitting this magnificent scene, a gravel walk margined with lawns, leads to the shrubberies; but artifice and ornament still pursue our steps, for these long breadths of lawn are planted with specimen shrubs, and some of these shrubs are surrounded close to their stems—as in the case of a lofty Araucaria—with flower-beds planted with great care and art, with a profuse use of Sedums, Echeverias, and alpines, in the most modern style of high gardening. Dracænas, India-rubbers, Castor-oil plants, Abutilons, Aloes, Alternanthera magnifica, Begonias, and many others, are all employed here with exquisite effect. There are ribbons of Lobelia, Echeveria, and Pyrethrum; beds of single Dahlias, Carnations, and Roses; and basket-shaped beds of Clematis. In the background on either hand are groves and clumps of Rhododendrons. And so we are conducted—beauty on either hand—to an extensive shrubbery, opened up by many walks, one of which leads to the house of Mr. Upjohn, the Aladdin whose lamp of knowledge produces this scene of annual delight.

The extensive shrubbery is planted with Rhododendrons and other shrubs, and among the timber trees are a number of very large Ash, holding their girth high up the stem, and including a great deal of timber. The department of the kitchen garden is as well conducted as the flower gardening. All sorts of fruits are grown, from Pines to Gooseberries and Currants. The Gooseberries netted under shelter of a wall, in a north aspect, last till the end of August. There are eight vineries and four Peach houses, a Pear house, several Peach and Plum houses, and houses for Figs, Pines, Melons, and Cucumbers, with large accommodation for flowers.

As the day was wet, and I was, moreover, accompanied by friends from whose house and in whose company I visited several great gardens in Lancashire, it was necessary to limit my note-taking. Passing over the flowers, except Saxifraga sarmentosa tricolor superba, I must be content with naming a few of the best Pears grown here under glass, as cordons on back walls or as bushes in tubs. These are Marie Louise, Louise Bonne of Jersey, Doyenné du Comice, and Souvenir du Congrès. Out-of-doors, Jargonelle, Beurré Diel, and Easter Beurré, are ripened on walls. The sorts of Plums in the house were too numerous to be noted down.

I observed that Tomatos are grown not in houses, but in frames and tied to supports within a foot of the glass, and it is thought here that Tomatos are best grown so. Strawberries are largely grown. The pits and frames, which we had not time even to peep into, are very numerous. These notes will, I hope, convey some slight idea of the excellent gardening of Worsley. It will readily be understood that there is ample work for the thirty-two gardeners here employed. *H. E.*

JAMAICA. — The September Bulletin of the Botanical Department contains articles on Sugar-cane seedlings, Australian Wattles, and on the cultivation of Rice in Bengal.

New or Noteworthy Plants.

DENDROBIUM × CASSIOPE, *n. hyb.*

Some of the hybrid Dendrobiums which have been raised by various operators are extremely beautiful and floriferous, and are rapidly becoming great favourites in gardens; while their numbers are constantly being increased by new combinations being effected. One of these, which has flowered in the collection of Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne, during the present year, was obtained by crossing Dendrobium japonicum with the pollen of D. nobile albiflorum, and is a most beautiful little plant. It can be well compared with D. × endocharis and D. × euosmum, two of the most elegant little hybrids yet raised. In colour, especially, it closely approaches the last-named, though the flowers are not equally fragrant. It is about intermediate in character, though the habit apparently approaches that of D. japonicum rather more closely than of D. nobile. The flowers are of the purest white, 2½ inches in diameter, with a clear maroon-purple throat to the lip. The shape is exceedingly graceful, the segments being broader than in D. japonicum, but narrower than in D. nobile, all, including the lip, being subacute. The blotch is medium-sized, bright, and very sharply defined. I have little doubt that it will prove as floriferous as D. × endocharis, in which case it is likely to become just as great a favourite. *R. A. Rolfe, Herbarium, Kew.*

Cattleya superba, var. alba, *n. var.*

This beautiful Cattleya, notwithstanding the extensive area over which it is diffused, has shown but little disposition to vary, the differences hitherto observed being chiefly confined to small variations in the size and intensity of colour of the flowers, and in the vigour of the vegetative organs; such differences chiefly depending upon the situations in which the plants grow. A most beautiful albino has now appeared, having been discovered by Mr. Edward S. Rand, of Pará, Brazil, who has sent a flower to Kew, together with several other interesting Orchids. It is evidently a magnificent thing, as Mr. Rand very pertinently remarks, and we may hope to see a good stock of it in due time. Fancy a plant of Cattleya superba splendens with flowers of the purest white, and you have a good idea of our novelty, which in future may be known as the variety alba. Cattleya superba delights in plenty of heat and moisture.

Mr. Rand states that in the immense low-lying tract called the *Varzeas*, extending many miles northwards from the Amazon, which is yearly inundated by the overflowing of the river, and teeming with lakes and swamps, here, on the tops of the lofty trees, fully exposed to the sun and air, Cattleya superba has its home. Further north, in Guiana, Columbia, and Venezuela, it is also chiefly found in the neighbourhood of the great rivers, growing under similar conditions, and flowering with the utmost freedom. *R. A. Rolfe, Herbarium, Kew.*

FRUIT GROWING IN JERSEY.

When on a visit to Jersey early last September, I had the pleasure of looking through the establishments of some of the principal growers not always easily obtainable, for their places being extensive it would take up a great deal too much of their owner's time and that of their assistants to show visitors through. I must, however, say that the greatest courtesy was shown me, and any information which I sought for was readily given.

First, I must note Mr. Bashford's, Morley House, Bagot, St. Saviour's. This is certainly one of the largest and best establishments in the island, and it may interest readers of the *Gardeners' Chronicle* if I draw on a few notes which I made at the time. Vines are chiefly grown, and the first house entered was planted chiefly with two-year-old Black Hamburgh, and a few Black Alicantes and Madres-

field Court, which had made very fine canes whilst carrying a good crop. Most of the Hamburghs were cut; but not so the Alicantes, which were good in bunch, fine in berry, and beautifully coloured. This house is 350 feet long and 45 feet wide, with a hipped-span roof; the rafters on the south side being 35 feet long. Under these Vines last December was sown Pea William Hurst, which crop was cleared off early in April, a bountiful and remunerative crop; afterwards the inner borders were sown with French Beans, which were cleared in due course.

A Gros Colmar house was the next one entered: it was 900 feet long by 45 feet wide, and the Vines had a magnificent crop of bunches, which were finishing off well as regards colour and size, the latter point exceptional, for the berries looked as even in size as if they had been moulded, and when a half-crown piece was placed on a berry the latter could be seen reaching beyond the edges of the coin. The Grapes in this vinery will be kept hanging on the Vines for some time longer before being cut.

The next vinery was for Muscats. It was span-roofed, with rafters of equal length, and was 800 feet long by 50 feet wide. This was the grandest houseful of Grapes I have ever seen, and worth a journey almost any length to see it. There were 7,750 well-shouldered, symmetrical bunches, large in berry and beautifully coloured. Many of the bunches would turn the scale at 5 lb., and on an average they would weigh 2¾ lb. per bunch — the sight may be better imagined than described. The Vines are in splendid health, with not extra strong canes certainly for such a crop, but short jointed and well ripened. The regulating of the foliage and the pinching of laterals is closely attended to. Mr. Bashford has great faith in keeping his Muscat borders well moistened to a much later period than most growers. It takes a man two days to water this house, and this with 1 inch hose and the water at a good pressure.

Adjoining this vinery is a Tomato house, 900 feet long by 50 feet wide, and which had also had crops of Pears, then Beans, and afterwards Tomatos. The plants used consisted of a seedling variety which Mr. Bashford has raised first by crossing Perfection and Trophy, and the progeny of these with a remarkably dwarf variety, and if ever a Tomato deserved the name of "Perfection" it is this one—dwarf in habit, an abundant bearer, bright colour, the flesh firm, and the fruit solid, with an average weight of 4 oz. The next house was also filled with Tomatos, the number of plants in it being 18,000, and since May last there have been gathered and sent to market 5 tons of Tomatos. These plants are not grown on trellises under the roof, but in rows 3 feet by 2 feet 9 inches all over the house, allowing a 4-feet path down the centre of the house, and the plants trained to stakes. The two houses adjoining are of the same size and length, and were also filled with Tomatos, and rather more fruit had been gathered from each of these than from that previously mentioned. Considering the quantity grown here, and the number of growers in the island and elsewhere, it is surprising where such a large mass of fruit is consumed.

Then came a Melon-house, 800 feet long by 45 feet wide, and this, like the Muscat vinery, was an agreeable surprise. It was planted with 4000 plants, which produced 20,000 good marketable Melons, some weighing 8 lb., and finely netted, and evenly swelled. The finest fruit were produced on plants which carried from two to four, others carried six and seven each. These plants are all tied up to stakes, about 5 feet 6 inches high, not grown on trellises, as is usual, and no bottom-heat is attempted, they being simply planted in a prepared flat border. The plants are kept well thinned, laterals and sublaterals are closely pinched off; there was not the least overcrowding, and every fruit had its full share of light and air.

There were many other houses, but these were cleared of their crops, and were not interesting. I may mention the early Black Hamburgh vinery, which is 900 feet long; the Vines were being pruned at that early date, and several others beside; and although the heating power at command is very efficient, it has not been used for two or three years. There are 522,000 feet of glass at Morley House, which is heated with seventeen miles of 4-inch hot-water pipes, connected with twenty-four boilers. The watering arrangements are perfect, the water being pumped into a tower at the rate of 600 tons a day, and this large quantity is, in the growing season, all used, as well as some from other sources. Hydrants fitted with hose-pipes are placed in all the houses.

Although my notes have been confined to the Vines, Melons, and Tomatos, Mr. Bashford is equally successful with Pears. When he bought the land for market-gardening, the water used to bubble up in the lower parts of the property, but this excess of water was obviated by drainage, and the soil was trenched; the trees planted are now in grand health, and are enormously productive, notably, Pitmaston Duchess, Chaumontel, Williams' Bon Chrétien, Louise Bonne of Jersey, Maréchal de la Cour, Beurré Diel, Doyenné du Comice, Glou Morçeau, Easter Beurré, and Beurré Clairgeau. Belle de Jersey is considered here the best culinary Pear. Against walls, horizontal, fan, and cordon-trained trees are adopted, and all answer well. In the open quarter, dwarf bush and pyramidal trees are grown. Mr. Bashford works on scientific principles, and by perfect analyses of each plant that he cultivates, he knows exactly what description of manure to use. Last year he used ten tons of horn shavings, besides several other artificial manures, but little raw manure. Ventilation is all at the top of the house, where the lights are hung to open from the ridge, instead of being hanged to it, thus allowing of a direct current of air passing into and out of the house. This system may do for the island, where the sun is very warm, and the air genial, but it would not do for us on the mainland. *A. Evans, Lythe Hill, Haslemere.*

HARDY WATER AND BOG-LOVING PLANTS.

Hardy water and bog plants are now so plentiful, and the majority of them combine so much beauty with elegance of habit, that no excuse need be offered where facilities obtain in not adding to the interest of the garden by cultivating these plants. So far as attention goes, they require, perhaps, much less than the ordinary run of hardy herbaceous plants, and when grown in conjunction with the Nymphæas, as they always should be, the interest of the bog garden is enhanced. All the Nymphæas are beautiful, and none to my mind more so than N. tuberosa var. flavescens (N. Marliacea of gardens), which has proved quite hardy in England, and promises to be one of our best water plants. When grown, as they often are, in pots or small tubs, sunk in the ground or submerged in water, they always seem to me to lose much of what I take to be the most characteristic of these water plants—they get cramped owing to the size of the tub or pot, and lose greatly in the grace which marks them as wild plants. Of course, we know every garden has not facilities for growing water and bog plants on a large scale, but where such is at hand waiting, and can be utilised, a splendid feature may, with little trouble, be added to the garden.

Many plants which we try to grow in our borders and rockeries, will find a far more congenial home on the margin of a lake or pond; and amongst plants of this class may be mentioned Rodgersia podophylla, Saxifraga peltata, Polygonum vaccinifolium, Lychnis chalcedonica, Monarda didyma, &c. All these and many more may be grown as stated above, on an ordinary border, or in the cool recesses of a rockery, but they will neither grow so robustly or flower so freely, as when they can just have their "toes in the water." Under the latter conditions, these plants may be grown in the full sunlight, and no one will doubt their more heightened colour, and of course more general effectiveness. Our own native plants form a large contingent in both classes, and just as it is in Nature, so we can imitate in the garden, and not unfrequently with a much better general effect. What can be more beautiful or truly English, than bunches of the Marsh Marigold, bordering our lakes or streams? yet how seldom do we see them even in the gardens which have ponds large enough to require a boat. Another English plant, which has been the wonder of most visitors to Kew since early summer, is the Hypophaë rhamnoides, bushes of which, on the margin of the pond near the Palm-house, are literally loaded with bright orange-red berries, giving an effect we have never seen surpassed, nor even approached, at this time of year. Bamboos also do very well in sheltered spots in the border, but to see them planted near water, and fairly started, is to see them grow in very deed. One could run on with such instances, but one more, however, will suffice. Gunnera manicata and G. scabra are often seen growing in the shade, and although they may be well attended to with water, the plants never have the robust appearance they assume on the margin of a pond, where the roots have crept beyond the soil, and begin their multifarious branching on the shallow bottom. The old Cape Pond-weed is a special favourite, and although blooming freely with us all through the summer and autumn months, we notice to-day in the presence of many Hawthorn-scented blooms, that it has not yet given up its original habit of flowering when most of its congeners are going to rest. It is a most charming plant, and when planted on the sides of a shallow pond, it soon makes itself at home. It has been known in the course of a few years to form patches 20 to 30 feet in circumference, and that in a pond from 2 to 4 feet deep. Seeds are freely produced, and these on the fine muddy bottom germinate freely. Another plant of interest is the North American Brasenia peltata, with its pretty floating peltate leaves and upright bunches of large yellow flowers. Pontederia cordata and cœrulea, Sagittarias, Ranunculus lingua, Alisma, Plantago natans and ranunculoides; our English Frogbit, Hydrocharis morsus-ranæ, a very interesting and pretty plant, with its numerous yellow blossoms; the Water-soldier, Stratiotes aloides, perhaps the most curious of all, with its Pine-apple-like bunches of leaves, and pretty white flowers. The old plants seem to fix themselves to the bottom during autumn, and which in the summer send up young ones attached by long stems, to the surface, to flower. Typhas, Arundinaria aquatica, Sparganiums, Iris pseudacorus, and a few Utricularias, may also be grown without much trouble; but they are usually more interesting than beautiful. I have not yet half exhausted the list of plants that may be used as above indicated, but enough are given to show that these plants are deserving of more notice than they generally receive. *D. D.*

HYBRID CISTUS.

When seen at their best, and in suitable positions, there is no group of shrubby plants, taken as a whole, at once so charming, interesting, and, as a rule, so easily managed as the genus Cistus. From what we can glean, and judging from the great number of species and varieties figured in Sweet's *Cistineæ*, this genus must have been a popular one in the old times, when large bushes of the old Laurel Cistus and Gum Cistus were the pride of shrubbery borders. Many of these figures represent what we know to-day as mere forms of others, or perhaps hybrids; but this does not at all detract from the usefulness of the book, nor lessen the value of the immense fund of information to be found there. Everyone who has, or has had, anything to do with Cistuses, knows of the confusion existing regarding their proper classification, this, of course, being materially increased by the readiness with which they hybridise one with the other, and the vast numbers of these hybrids to be found in a wild state.

It seems clear that the genus Cistus will never be studied with success in the herbarium, where they lose many of the characters by which a few of the hybrids are best distinguished. We are told that, between 1860 and 1875, M. Bornet conducted experi-

ments on the different species of Cistus on a rather large scale, in which he is said to have made no fewer than 234 distinct crosses, and by the aid of which he clearly demonstrated the hybridity of a few supposed species. C. longifolius, Lam. (= nigricans, Pourr.), was produced by C. monspeliensis × populifolius; this is the plant well known in gardens under the name of C. florentinus, and is found to be one of the showiest and most useful of the dwarfer kinds, of a compact, close-growing, and bushy habit, smothered in the latter end of May and June with its large, clear white blossoms. C. Corboriensis, Pourr. (hybridus, Pourr.), is also a hybrid, C. salvifolius × populifolius; this plant is often called cordifolius in gardens, and is an extremely quick grower, forming huge bushes in a very few years. The leaves are somewhat like those of the latter parent; the margins are, however, crisped, and undulated, ciliated, and slightly glutinous to the touch. The flowers, when full open, are white, but of a pretty rose in bud. C. dubius, C. monspeliensis × salvifolius; a pretty plant, almost intermediate between the two, with white flowers. The reverse cross, C. salvifolius × monspeliensis, produced C. florentinus, Lam. (= C. albiensi, H. × H., valentinus, Pourr.). C. pourquerollensis, H. × H.; this is the plant usually placed as a variety of C. monspeliensis in Continental floras, in which the flower-stalks are about three-flowered, and the leaves broad, and not sessile, as in C. monspeliensis. C. varius, Pourr. (= C. Ponzolzii, Delile), is C. albidus × monspeliensis; a curious cross, and a most variable plant, almost intermediate. There is still another hybrid in gardens under the name of C. lusitanicus, the parentage of which we have been unable to fine out. It is the best of all for the rockery, the large white flowers having rich purple spots at the base of the petals. *D.*

(*To be continued.*)

ORNITHOLOGY IN RELATION TO AGRICULTURE AND HORTICULTURE.

(*Continued from p. 591.*)

The English Sparrow.

All the offences of the house-sparrow cited are fully and completely recognised by American, Canadian, and Australasian cultivators. The United States ornithologist, Dr. Merriam, in a long and elaborate Report to the Minister of Agriculture, in 1888, formulates a fearful indictment against the English Sparrow, as it is styled, which was first settled in the country in 1853. At this time it has spread over thirty-seven States and six territories, having first invaded "the larger cities, then the smaller cities and towns, then the villages and hamlets, and finally the populous farming districts. As the towns and villages become filled to repletion, the overflow moves off into the country, and the sparrow's range is thus gradually extended. Occasionally, however, it is suddenly transported to considerable distances by going to roost in empty box-cars, and travelling hundreds of miles. When let out again, it is quite as much at home as in its native town. In this way it reached St. John, New Brunswick, in 1883, on board the railroad trains from the West. In like manner another colony arrived March 1, 1884, in grain-cars from Montreal. Similarly it has arrived at a number of towns in the United States." It is calculated that in fifteen years from 1870, the new territory in the United States invaded by the English sparrow amounted to 516,500 square miles, and that the total area now occupied there is much over 885,000 square miles.

In Canada it occupies considerably over 160,000 square miles. Its rapid spread and increase create consternation in agricultural and horticultural circles. At the annual meeting of the Entomological Society of Ontario, the well-known president, Mr. J. Fletcher, remarked that "a subject demanding immediate attention at the hands of economic entomologists as one of the influences which materially affect the amount of insect presence, is the great and rapid increase in the numbers of the sparrow. Introduced into Canada but a few years, it has already increased in some places to such an extent as to be a troublesome pest, and steps should be taken at once to exterminate the audacious little miscreant." Prof. Saunders, late President of the Ontario Entomological Society, said at the same meeting that the extermination of the English sparrow would be a great boon to Canada; and the Minister of Agriculture for Ontario stated that "this destructive bird was no longer under the protection of the Act of Parliament respecting insectivorous birds, and that everyone was at liberty to aid in reducing its numbers."

Australasian cultivators are much alarmed at the increase of the house-sparrow. Agricultural and horticultural societies are taking strong action against it, while entomologists equally denounce it. In a paper read before a congress of Agricultural Bureaux, Mr. F. S. Crawford, a skilful entomologist, divided the various pests of cultivators of the soil into two classes—the Free and Parasitic—and placed among "free animal pests" rabbits, sparrows, locusts, some beetles, certain grubs of beetles, and a few caterpillars." Prizes are offered by many societies in Australia for the largest number of heads of sparrows and of sparrows' eggs.

Besides the direct injuries of house-sparrows, they entail indirect harmful consequences by driving away useful insectivorous birds. They are pugnacious and numerous, so that other birds cannot exist near them. They have been aptly termed "Ruffians in feathers." Swallows and martins are routed from their accustomed haunts and nesting places. Many a householder will remember that a few years ago, swallows' nests were regularly made in corners of their houses, whereas lately it has been quite exceptional to see a nest. It is not alleged that the diminution in the number of swallows is due altogether to sparrows, but it is certain that they have prevented swallows from nesting, as of old, upon buildings, and probably in many cases have prevented them from building at all. Swallows are admittedly the most valuable friends of the cultivator. Their food is altogether of insects, including midges and the Hessian fly, Cecidomyidæ of all kinds, and other aphides, Turnip-flea beetles, and such like devastators of crops. Their large decrease is a national calamity. Colonel Russell suggests that the greater prevalence of the Wheat-midge (Cecidomyia tritici) is due to this cause, and it is not by any means unlikely that the frequent occurrence of Hop-blights from aphides in the last ten years is attributable to the comparative paucity of swallows, as aphides migrate in the winged form from trees of the Prunus tribe, especially Damsons, to the Hop-plants, and from the Hop-plants again to the Damsons. There are two distinct migrations of winged aphides through the air to accomplish this, giving great opportunities to swallows. With regard to other birds useful to cultivators, such as fly-catchers, water-wagtails, and others, they are all driven away by sparrows, which do not tolerate other birds near their homes.

And with respect to aphides it may be said here, in looking on the blackest side of sparrows, that they are exceedingly fond of the larvæ of the Coccinellidæ, which are the great devourers of aphides in all stages. The same complaint is made of the sparrow in the United States and Canada, that it drives away insectivorous insects, and disdains to eat them itself. No less than seventy kinds of birds are said to be molested by the sparrow in the United States, the majority of which are species which nest about houses, farms, and gardens, and are decidedly beneficial to the farmers and gardeners.

Now, looking upon the other side of the picture, in what way do sparrows profit anything or anybody? Do they benefit those who cultivate the land by reducing the number of insects injurious to crops? They undoubtedly take some insects to their young ones; it is believed that this is because other suitable food for the brood is not forthcoming. Several who have watched these birds, hold that small caterpillars and larvæ are given among many other things to the young birds in their early stages. Small beetles, red-spiders, and small flies, are also found in the maws of young sparrows. It has been noticed that the caterpillars are always smooth; hairy caterpillars are not eaten by sparrows at any time. Colonel Russell relates that he once examined, in Essex, the stomachs of forty-seven nestling sparrows, and only found the remains of six small insects in the entire lot, the crops in most cases being filled with green Peas and greens. That sparrows have no appreciable effect upon aphides is proved over and over again by the fact that these insects have swarmed upon Plum, Damson, and other trees, close to where hundreds of sparrows have been born and bred. Aphides upon Roses in gardens near the nesting places of many sparrows are never touched by these birds. And in the recent visitations of caterpillars upon fruit trees of various kinds, the attack has been as virulent in gardens, orchards, and fruit plantations hard by the breeding and roosting places of hundreds of sparrows, as in localities far from their usual haunts. Sparrows may be seen in large flocks in corn-fields after the harvest, and close to Turnips infested with aphides, but they utterly disregard this kind of food. It is well known that they will not look at Pea or Bean aphides, nor at the weevils which sometimes swarm upon Pea and Bean haulm, though directly Peas are formed they attack the pods. Miss Ormerod says, in her seventh yearly *Report of Observations of Injurious Insects*, "I have not received from any quarter a single trustworthy observation of sparrows feeding regularly upon insects. Nobody doubts, however, that they can, and do, *sometimes* take them in special circumstances."

Prof. Riley, the entomologist of the Department of Agriculture in the United States, made a most exhaustive report upon the insectivorous habits of the sparrow, after long and careful investigation, and his conclusion is that "we are justified in concluding that the bird will exceptionally feed upon almost any insects; but I am strongly inclined to believe that the deductions made from my own observations will hold very generally true, and that, in cases where injurious insects have been fed upon, it is not by virtue of any insectivorous habit or preference, but by mere accident." Dr. Lintner, the entomologist of the New York State, has arrived at practically the same conclusion as to the naturally graminivorous, or vegetarian, characteristics of the sparrow, and of its uselessness as an insect destroyer. The verdict of another able economic entomologist, Mr. Fletcher, of Ontario, is that although, during the breeding season, they do destroy many soft-bodied insects as food for their young, this good office is by far outweighed by the harm they do in driving away truly insectivorous birds, and by their direct ravages upon grain crops.

There is a more weighty argument against the usefulness of the sparrow, and directly demonstrating its destructiveness, in the fact that most of the laws of the various States in America, framed to protect sparrows, have been repealed, and regulations of cities to the same effect have practically become dead letters. Bounties have been offered by some towns and counties in the United States. In Michigan State, one halfpenny per head is paid for "English" sparrows. If there were any good in these birds it is quite certain that such practical people as the Americans would not set their faces so steadily against them, and take such active steps by means of poison, trapping, netting, and shooting, to decrease their numbers.

Canadians have also ceased to protect sparrows, and now are compassing their destruction in every possible way. Australian and New Zealand farmers and gardeners are offering rewards and prizes to those who kill the largest number of sparrows and produce the greatest quantity of their eggs, as fatal experience has taught them that they are unmitigated evils.

They have been compelled, moreover, to poison them by wholesale. "Their most successful method

is that of placing poisoned Wheat in a bag with chaff, and allowing it to leak over the tail of a cart along the road. The sparrows are destroyed by the bushel." The Adelaide poet laureate wrote some amusing verses upon the subject, a few of which must be quoted:—

"What means this sadly plaintive wail,
Ye men of spades and harrows?
Why are your faces wan and pale?
It is the everlasting sparrows.

"We may demolish other pests
That devastate the farm and garden;
But spoiled by these voracious guests,
Our prospects are not worth a farden.

"No more your wasted fruits bewail,
Your crops destroyed of Peas and Marrows;
A cure there is that cannot fail
To rid you of these hateful sparrows.

"The remedy is at your feet,
Slay them and wheel them out in barrows;
Poisoned by Faulding's Phœnix Wheat,
The one great antidote to sparrows."

British cultivators have waged war in a half-hearted way against these enemies for a long while. They say now that the time has arrived when prompt and drastic measures must be taken to reduce the number of sparrows, and that they intend to avail themselves of all legal means to accomplish this. Seeing that there is such a consensus of opinion on the part of the agriculturists and horticulturists of at least half the inhabited world with regard to the mischievous and destructive nature of sparrows, the feeble voices of bird lovers and humanitarians, who urge that they should be allowed to increase and multiply at their will and pleasure, will hardly be listened to. *Charles Whitehead, F.L.S., F.Z.S.*

(To be continued.)

Scotland.

PUBLIC PARKS.

The numerous parks and open spaces, which of recent years have been laid out and dedicated to the use of the public, are, happily, not confined to any particular part of the kingdom; many towns, and even some villages have something of a public park or green, in which not only may the manly sports and pastimes of the period be practised, but not unfrequently those places are excellent examples of the art of landscape gardening, and also places where often a considerable amount of skill and taste may be seen in their floral arrangements. Probably the prevailing custom of offering prizes for the best designs for laying-out any particular park has had a stimulating influence on the landscape architect, as oftentimes in such cases the competition is most keen, the result being seen in many modern public parks.

But this is digressing from the heading of this note. The Duthie Park of Aberdeen, which, although of very recent creation, is even now in many respects, far in advance of any similar institution which has come under my notice in Scotland. Everything seemed most complete and to the purpose, even the lodges at the gates come in for a share of admiration for being of artistic design, and built of dressed granite. They had an air of independence about them which was quite refreshing after the squat erections seen at the entrance of some of our historic parks. The park comprises an area of 45 acres, which has been turned to the best account; it is bounded on the north side by the Deeside Railway, alongside of which a broad belt of trees is planted, with an irregular wavy outline of Evergreens in the front, which broadens out into a flower border as it nears the eastern gate, and at the time of our visit, the middle of September, was gay with blocks of choice Dahlias and Gladioli. Near to this boundary, and going westward is a flagstaff placed on a high mound, the sides of which will soon be covered completely with Broom and Furze—two native plants. From this point of vantage, a capital view of the higher part of the park is obtained. On looking a little way in front, some very effective carpet-beds were discovered, filled, as we found, with material that was hardy, or nearly so, such as Gnaphalium lanatum, Pyrethrum, Antennaria tomentosa, and the dark leaved Ajuga reptans—a lot of good plants to give variety of colour to the groundwork and tracery, the whole being enriched by good dot-plants of Gasterias, Kleinia repens glauca, small Agaves, Echeveria metallica glauca, as well as a goodly quantity of E. secunda glauca; in the centre being a graceful plant of Cordyline indivisa. Looking towards the western gate, some brilliant masses of scarlet attracted attention in a dell; these turned out to be Rose beds, which had Gladiolus planted between the Roses, thus carrying the display into the autumn. Near an entrance-gate stood some Eucalypts, chiefly Globulus and Gunni, which were outside all the previous winter; but I am afraid one of those "grand" winters will at last claim them.

Following the walks, and which, it may be mentioned, are of a good breadth, with easy curves and graceful intersections, bearing southwards, a large space near the centre is preserved for the holding of exhibitions and games. A feature of decoration which lent life and colour to the scene was the employment of annuals in variety, where space permitted, along the margins of shrubberies. Specially good were some of the newer Godetias, Clarkias, Linum grandiflorum, Sweet Alyssum, Collinsias, Saponaria calabrica, and the pretty little Linaria purpurea aureo-reticulata. A nice sheet of water, with pretty bits of rocky margin, feeds a second lake; and cascade fashion, a winding streamlet has been formed where the ground slopes naturally, if somewhat abruptly, towards the River Dee, the southern boundary of the park. A bridge across the streamlet connects the higher level walks, and oftentimes the banks at the ends of such bridges are not at all of an interesting character. But here they were objects of beauty, being densely clothed with Cotoneaster microphylla, and the plants were in luxuriant condition, and smothered with fruits. I do not recollect having before seen any similar bank so effectively clad with verdure. Passing along the slope towards the Dee, a neat parterre of chain beds in Box and gravel was noticed that were filled mostly with scarlet and pink Pelargoniums, with brown and yellow Calceolarias, Mangle's variegated Pelargonium, variegated Pelargoniums being here in good form; and the small centre beds had each alternately a plant of Cordyline or Yucca recurva. At the edge of the park, and parallel with the river Dee, were some large beds of Violas planted in zones of colour. The most effective of which were Golden Queen, Countess of Kintore, Thomas Grainger, a good brownish coloured flower; Goldfinder, Souvenir, and Sultan-Lady Diana, of a blue colour; Jeffrey and also Queen and Harlequin, all evidently suitable subjects for the situation. Opposite to these beds are several basins and fountains, and at the end there is a "rootery," well clothed with Ferns and creeping plants, such as Periwinkles, Ivies, and Honeysuckles.

Going back to opposite the ponds, the rock garden is reached, and this struck me as being as yet one of the weak points of the park. The object is not badly conceived, but it is too stony. Moreover, although it is fairly well furnished, yet, owing to lack of variety, it is somewhat deficient in point and interest. With the exception of some Ferns and Saxifrages, the only plants of interest to be seen were Grislinia lucida, Gaultheria Shallon, several species of Cistus and Menziesia polifolia. No doubt as time and circumstances permit, this will be remedied. Just above the rockery, and on the upper level, there is a fine fountain.

On the way back to the eastern gate an effective bed, filled with white, variegated-leaved Pelargoniums, Tropæolum Vesuvius, with edgings of Lobelias Duthie Park, blue and white, was noticed. There is also a good range of greenhouses, where the stock of Tuberous Begonias, Fuchsias, and Pelargoniums were being worked up, as well as decorative subjects for civic festivities.

There is a good refreshment establishment where tea and coffee of good quality are served at reasonable rates, and we were told the public is, as it justly ought to be, highly satisfied with the management of the Superintendent, Mr. Harper, who we believe, also largely assisted in laying out the park. *F. R.*

(To be continued.)

Orchid Notes and Gleanings.

MR. A. SILLEM'S ORCHIDS.

The collection grown by Mr. Sillem, at Laurie Park, Sydenham, contains many well-grown specimens. I alluded, about two years ago, to the remarkable examples of the Moth Orchids, which Mr. Sillem's gardener has grown into immense specimens, some having thirteen leaves on one plant, and long, much branched flower-spikes, and one plant of this species had three flower-spikes. P. Sanderiana was likewise remarkable for the breadth and substance of its leaves. Near by, the plants of P. Schilleriana were throwing out strong spikes, and in most cases a tangle of roots depended from the baskets of teak which held them. There are some excellent flowering-plants of Cypripedium Haynaldianum with three fine scapes of flowers; and of the nearly allied C. Lowii there is a good example or two, but they flower later, or rather earlier, in the year. The varieties C. bellatulum and C. Godefroyæ were charming; these flower late, and last a long time in beauty. It is also the season when C. Spicerianum brings forth its beautiful bloom; this variety is one that may be easily propagated by division, so that a good stock may be obtained from one large plant in a few years. Most Cypripediums like a portion of tough, fibrous loam mixed with the peat in the compost used in potting the plants. Amongst Cattleyas there was a fair display of beautiful plants. There were also observed three forms of the Lælia pumila, of which the typical species is figured in *Bot. Mag.*, t. 3656, under the name of Cattleya pumila. There was a very good variety of Cattleya aurea in flower—the true species, which in colour is distinct from C. Dowiana, and of which it is considered to be merely a variety, for Dowiana is merely a distinct variety of C. labiata. The native habitat of the one is about 600 miles from that of the other. C. aurea was found many years after the habitat of C. Dowiana was known. The lip of this variety is margined crimson-purple, the lip itself being densely streaked, and netted with golden lines. There was a good specimen of Cymbidium giganteum, in flower, and one of the best varieties of it. The plant has produced five spikes, and fifty-three flowers. The yellow-green sepals and petals are freely streaked with crimson; the lip is bright yellow, well spotted round the margin with blood-red. As seen here, it is really a much more beautiful Cymbidium than C. Lowianum; the flowers are also fragrant, a point in its favour. A plant flowering in October and November may also be said to be more valuable than C. Lowianum, which comes in the spring, when Orchid flowers are plentiful. Cymbidiums are easily grown, if a compost of loam and peat be used.

The useful Lycaste Skinneri was in blooms, and a long succession of flowers may be expected from the plants. The pure white variety of Lycaste Skinneri may be found now in most good collections, and very lovely it is in its season. A sprinkling of leaf-mould is an excellent material to mix with the peat and sphagnum for potting Lycaste. The Barkerias are thriving admirably; they require rather peculiar treatment, but of B. melanocaulon there was a fine plant; its soft magenta-purple flowers are charming; they must have plenty of air, and may be placed in the full sun, close to the glass, being freely supplied with water when in growth; they do not like much potting material, and thrive well on blocks. *J. D.*

Cattleya Bowringiana.

I have waited to see if any other correspondents of the *Gardeners' Chronicle* would lay claim to having had a larger spike of this beautiful late-flowering

Orchid than your correspondents, J. Woolford, see *Gardeners' Chronicle*, November 1, p. 506; and "J. G.," on November 8, p. 539. None have done so, and I think I may lay claim to having a finer one than either of the others. Last year whilst in charge of the gardens at Summerville, Limerick, I had one spike of nineteen flowers from a medium-sized pseudobulb; and I had two other plants which made stronger growths than this one, but which had only fifteen and sixteen flowers respectively. The plant which produced nineteen flowers had sixteen flowers on a spike the previous year. *E. Dumper, Somerville, Limerick.*

Cattleya labiata var. Warocqueana.

With respect to the above Cattleya, are we going back to the times of Cattleya imperialis, regalis, and Sanderiana, which, from the way they were introduced, would have led any one not familiar with their habit to believe they were all new and distinct varieties, instead of being forms of a Cattleya known to us for nearly half a century.

I am led to think, from the habit of the plants which are flowering here, that in the case of Cattleya Warocqueana there must be some mistake, and that it will turn out to be the scarce and long-sought-for true "old" autumn-flowering C. labiata. *H. G. C., Langton House, East Molesey.*

Lælia albida.

Amongst the many interesting things now to be seen in Messrs. F. Sander's Nursery at St. Albans, are two lovely specimens of the above. The larger of these is growing in a basket 26 inches wide, and has about 800 pseudobulbs, of which number 300 are furnished with leaves, and there are no fewer than fifty-three large flowering-spikes, each spike averaging ten flowers, which give a total of about 500 flowers —truly a remarkable show! The other specimen is growing in a basket 22 inches wide, and has about 600 pseudobulbs, and twenty-four spikes of flower are now expanded, the number of blooms on each spike averaging the same as those on the larger specimen, but they are of much better quality. The flowers are what may be termed of the button-hole size, that is, between 2 and 3 inches across; the sepals and petals are milky-white; the lip is faintly coloured rose, with an orange-coloured line running through its centre, while down in the throat there are numerous violet spots. This species may be easily grown in the Cattleya-house, and no extraordinary care is demanded by them. *P. W.*

Odontoglossum Cervantesii var. lilacinum.

From the collection of the Right Hon. Joseph Chamberlain, M.P., Highbury, Moor Green, Birmingham, Mr. H. A. Burberry, the Orchid grower, sends two sprays of this charming novelty. The flowers are large and of perfect form, the petals, sepals, and labellum of a bright rosy-lilac colour; the bases of the segments being ornamented by fine crimson lines forming irregular circles round the white column to about one third of the length of each segment. The callus on the lip is yellow, and the whole flower has a very delicate and pretty appearance.

Mr. Dorman's Orchids.

In the above collection, Cypripediums are represented by C. insigne Wallacei, a variety near to C. Chantinii, which variety, in its turn, varies slightly from C. Maulei, and does not differ from punctatum violaceum. These are very beautiful varieties, whose flowers last a long time in beauty during early winter. Another seedling from the same source in flower at Mr. Dorman's is C. œnanthum superbum, a cross between C. Harrisianum and C. insigne Maulei; it is interesting by reason of its being the first cross between garden hybrids. C. cardinale was another that was in good form; it is of the type of C. Sedeni, but much brighter in its deep rose-carmine lip. Mr. Dorman also possesses a fine plant of the best of the C. Roezlii and C. Schlimii seedlings, viz., C. leucorhodum, whose upper sepal is white, with a slight suffusion of rose colour, the whole flower being white, with the most delicate tints of pale pink; it is a vigorous grower, and is now getting moderate in price. There were noticed healthy vigorous plants of C. Spicerianum, also C. purpuratum; this is not a common plant, and is in its way distinct. Messrs. Veitch say, that it was introduced about 1836 by Mr. J. Knight, their predecessor in the nursery at Chelsea, and that its only known habitat is "the island of Hong Kong and the mountains on the opposite Chinese coast, and where it has now become very scarce." In the cool-house some Odontoglossums and Masdevallias were in flower. *J. Douglas.*

Barkeria Lindleyana.

The finest coloured example of this we have seen comes from the Right Hon. Joseph Chamberlain's gardens at Birmingham. The fine spike has flowers 2 inches across, of the brightest rosy-crimson, each flower having a white tip to the column, and white spot on the labellum just below the apex of the column; its colour is rich and glowing, and especially so at night by gas or candle-light. Accompanying B. Lindleyana were sprays of the pretty white, pink, and crimson B. elegans, and the rare B. melanocaulon, which seems intermediate between the other two named. Few succeed in growing these bright and compact-growing Orchids as they are grown at Highbury.

GRAYTHWAITE HALL.

The plan of a garden, and the sections, given in figs. 120 and 121, are from designs furnished by Mr. Thomas Mawson, landscape gardener, Windermere. They show considerable art in providing diversity of effect without any apparent straining after it, and if only the right kinds of native trees are planted in sufficient numbers to give character, as well as good shelter to the whole, and variety be afforded by flowering exotic shrubs, and native ones also, a most satisfying scene will have been created by Mr. Mawson.

The minor features of mere flower-gardening, with its beds and groups, its borders and parterres follow, as a matter of course, after the main features have been once for all determined on, and these therefore are not made visible to any great extent in the plan.

We will let Mr. Mawson explain the plan in his own way:—

The design for these grounds, which are entirely new, is arranged so as to get as much of picturesque effect, and at the same time to involve as little labour as possible. The ground, which is very undulating, lies on bluestone rock, which make any removal of ground very expensive. Generally speaking, the ground falls to the west, and rises to the north-east and south, the mansion being placed towards the north-east end of the pleasure ground. As the ground falls towards it from the east and south and north, and falls from the house towards the west, its position in regard to the main roads would be thought by some persons to be rather unfortunate, as the drive traverses a descent in approaching it, and which gave, previous to the commencement of the work, the appearance of the house being very much in a hole when viewed from the drive itself. This low-lying appearance has now been removed as much as possible, by sinking the drive in one part of its course, by removing a large portion of the hill, by making the main

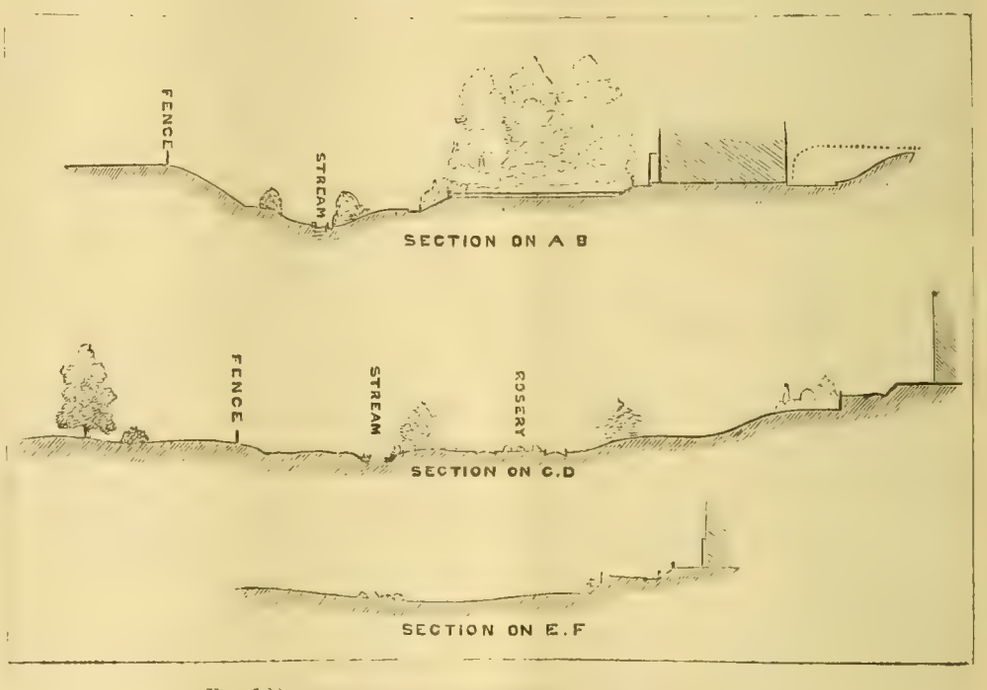


Fig. 120.—Sectional plan of works at Graythwaite Hall.

entrance at the south-east side instead of the west front as at present, and by running the drive forward to the ferry entrance. It is also proposed to give a base to the house, which, when remodeled, will be Elizabethan in style, and is being carried out by R. K. Freeman, F.R.I.B.A., of Bolton, by forming a terrace on the north and west fronts, and sinking these somewhat so as to give greater elevation to the house. A part of this work has already been done, and when completed will give the desired effect. Although situated in a beautiful district, and forming a part of a charming estate, there were practically no views from the house or grounds, owing to the whole of the park and grounds being surrounded by a belt of Oaks about a hundred years old, which gave the grounds a contracted hemmed-in appearance; these Oaks are being broken up into groups by the felling of a number of them, and by this means many very fine views of the surrounding country are obtained. The crest of the hill along section A, bordering the stream has also been cut through, and a view got across the park by the removal of some cowsheds, barns, and a smithy. A very fine view, terminating in a fine rocky hill planted with Scotch Firs, has been brought in from this walk and house (which will not be seen from

the mansion), will be built near here; and along by the side of the stream it is intended to naturalise Daffodils, Spiræas of sorts, Iris, Japanese Anemone, and other hardy free-flowering subjects.

The beds round which dotted lines are run, are intended for choice shrubs in variety, intermixed with herbaceous plants, Lilies, &c.

A walled-in kitchen garden of about 1½ acres, with a very good gardeners' cottage, and a range of glass, has already been put up on the south-east side of, and at some distance from, the mansion.

A number of old trees were found on the ground, some of which have been taken advantage of, and



Fig. 121.—Plan of improvements at Graythwaite Hall, Ulverstone.

Explanation of Reference Letters:—A, House; B, Conservatory; C, Business room; D, Rosery; E, Wellingtonias; F, F, Park; G, G, G, Rocks; H, Rustic tea-house; J, Bridge; K, Seat; L, Ornamental plants, arranged as wind-screen; M, Ornamental Coniferæ.

The building marked business-room is the old lodge, and the stables at present occupy a position near the house, two Ash and two Sycamore trees standing in the stable-yard; these are, however, to be removed, and fine new stables built on ground convenient to the dwelling.

others have been transplanted to their present stations in the park and elsewhere. Conifers have been largely planted for shelter, and large quantities of the choicer Rhododendrons and Azaleas, and Acers are planted to ensure variety and brilliancy of colour during the season.

SUPERSTITIONS IN CONNECTION WITH BAMBOOS.

Some quaint superstitions in connection with Bamboos in India were recently made the subject of a communication to the Agricultural and Horticultural Society of India, and published in their *Proceedings*, from which we gather the following: Bamboos are considered not auspicious planting near houses and on homestead land, certain families are prohibited from planting them, and if they wish to have the plant on their garden lands, they get other persons to do the work of planting for them. Bam-

boos are not cut or planted on a Sunday, and they are not touched even on Saturdays or Tuesdays, so the only days on which they may be cut for domestic use or planting are four days of the week. Out of these four days, if they fall on a new moon or on a *San Krauti*, *i.e.*, the day when the sun leaves one sign of the zodiac and enters another, that day is also observed as a day on which Bamboos should not be disturbed. Bamboos are also preserved from molestation in the month of Bhádia, *i.e.*, from August 15 to about September 15, which period is also considered inauspicious for transplanting or planting Plantains and Bananas.

Whenever Bamboo stumps are planted in a homestead land they generally occupy the western border of the same, for Bamboos on the west of a house are considered auspicious, with a tank on the east of the dwelling.

Young Bamboo shoots, when tender, are eaten as a pot-herb, and to preserve their tenderness, they are covered over with earthen pots, to blanch them. That this food was in use amongst the ancient Aryans, is evident, from the prohibitions therein contained of eating the same by the three upper classes of the Hindoos. Green Bamboo shoots are used by the Nepalese very generally as a pickle, which they prepare by cutting the shoot into small slices, and steeping the same in water in a close earthen jar, where they ferment, and generate a sort of acetic acid. This preparation is called Tâmbi in Nepal. It is a favourite pickle both of the rich and poor, and pieces of the Nepalese round Capsicums, called Khorasani, are thrown into the same.

The Alpine Garden.

ERITRICHIUM NANUM AND ANDROSACE GLACIALIS.

These two plants are certainly the most beautiful of the flowers of the high Alps. They grow at an elevation of from 9100 to 9750 feet, and it is considered to be almost impossible to acclimatise them. For several years I have experimented and tried to do this, and I believe that at last I have succeeded. The soil of the peaks on which these plants grow is always very porous and light, and contains little vegetable mould. It consists chiefly of *débris* of granite rocks, sand, pieces of quartz, or even shale, with an addition of more or less humus, formed of decomposed leaves, &c. During three-fourths of the year these plants are under the snow, then all at once come the long and light days of summer, and the dormant tufts begin to awaken. Its whole strength is put forth in the flowers, which must be as bright as possible, so as to attract the few insects found at such an elevation. The foliage is soon absolutely covered with flowers, to such an extent that it can no longer be seen through the myriads of blossoms packed in and pressed one against another. The constant dampness of the air, and the uniformity of the temperature, tempers the rays of the sun, which would otherwise be so powerful as to scorch the tender parts of these plants.

Now, is this so with us, or (above all) in England? The air is damp, it is true, which is a great assistance to the culture of a good many alpine plants. But the light is deficient, and, above all, there is not the friable soil of the high Alps.

I have, nevertheless, been able to cultivate Eritrichium and Androsace glacialis in the following way. They must be planted in porous pots (as is generally the custom in England), and in a soil composed of eight-tenths of granitic soil, with a little charcoal, a few potsherds, and a tenth part only of peat. If the plants are brought directly from the mountain, care should be taken not to transplant them by dragging them up from the ground at a time when they are in full activity; the annual cycle of their existence should be over, or at least a great part of it, and the plants should have begun their period of relative repose. They should then be transported with their roots wrapped in fresh moss, but with the crown of the plant kept very dry; that is to say wrapped as carefully as possible in stearine paper. When once they are potted and placed in a cool, dry, well-aired frame, the plants soon begin to put out new roots, and then the grower should water them a little; for I forgot to say that the plant should only be watered once when potted, provided that it does not really suffer from drought, as it is rarely likely to do, especially in England. When water is given, care must be taken never to wet the leaves, or the crown, but only the earth, as the least moisture rots the foliage. When the sun becomes less powerful, in September for instance, the plant must no longer be watered at all, the leaves become dry and yellow, but the heart of the plant is still sound. During winter it must be kept quite dry, and in early spring allowed plenty of air, the pots being placed, if possible, in the full sun. I have raised excellent specimens by placing them in March on a wall in the open sunshine. The wall, at the end of winter, is naturally impregnated with water, and, under the sun's influence, this evaporates and surrounds the plants on the top with a refreshing moisture. They may be watered when it is seen that the leaves are developing rapidly, but should still be kept rather dry. By following this treatment, satisfactory results will be obtained, especially with Eritrichium. I have found this out little by little from my experiments, and I can affirm that it is the one and only way by which good blooms of this plant can be obtained.

For Androsace glacialis, A. helvetica, A. pubescens, A. imbricata, A. Pacheri, A. Haussmanni, the results have been less successful, but I should add that the trials on these were not made so carefully as were those on Eritrichium. Androsace glacialis grows naturally among the clumps of Eritrichium, and under the same conditions. Also, I must say that in our garden at Geneva, as in that of the Linnæa in Valais—that is to say, at an elevation of 1300 feet, as at one of 5500 feet, Androsace glacialis has shown less need for dryness, and seems at home in a colder situation than Eritrichium can endure. *H. Correvon, Directeur de le Jardin Alpin d'Acclimatation, Genève.*

Plants and Their Culture.

The Forcing-house and Pits.—Pot Roses for early bloom may now be started, in a temperature of 60° in the day-time, and 7° to 10° lower at night, a slight rise being permissible with warm sunshine. When affording ventilation, strive to avoid letting draughts of cold air reach the plants, or mildew will make its appearance, and no great amount of syringing should be done in dull weather until plenty of leaf be made. Fumigate often, to kill greenfly, and dust the plants with flowers-of-sulphur for mildew when the house is shut up and the foliage moist. If the pots can be placed in a slight bottom-heat, so much the better. Roses planted out in a house or for later forcing should now be cut back, if they have not been as yet attended to, the old top soil removed, and replaced with loam and rotten manure. It is advisable, before closing the house, to give the plants a syringing with sulphur mixed with tobacco-water, to destroy insects. A little warmth in the hot-water pipes is advisable during cold weather, as when the plants are on the move, cold exercises a check, often causing mildew.

Roses in fruit-houses and other places should be thoroughly cleaned before being started, painting the stems and old wood generally with a mixture of sulphur, clay, soft-soap, and tobacco-water. The various plants required for forcing should now be got ready for putting into any fruit-house about to be started, the treatment afforded the fruits bringing on these plants in a satisfactory manner. Such plants as early blooming varieties of Rhododendrons, Kalmias, Prunus, the larger-growing Spiræas, and Viburnums bloom much better when slowly forced at first, and then placed in a somewhat warmer house. Staphylea colchica is another easily-grown plant which bears forcing, and is deserving of general cultivation. There should be no further delay in getting potted all the plants required for forcing, protecting their roots from frost by plunging the pots in coal-ashes.

If there remain any bulbs not yet potted, these should get attention forthwith, retarding the plants when the pots are full of roots being better than keeping the bulbs out of the soil after this date. Hybrid Amaryllis are useful, and should be started in batches, putting them on shelves, and watering them sparingly till the flower-spikes push up, when more may be afforded, and occasionally weak liquid-manure. After the bloom is over, the plants should be given a warm place on a shelf, and encouraged to grow freely and their bulbs matured early. Some plants of the rich crimson A. formosissima, standing in a cold frame here, are now showing bloom-spikes, and these bulbs, if placed in a little warmth, will come in serviceable for decoration at the end of December. These same plants flower every year, and are grown specially for winter blooming. A few pots of the early species of Gladiolus will be found of much use in the spring; The Bride (Colvillii alba) is the best for forcing. *G. Wythes, Syon House, Brentford, W.*

The Orchid Houses.

Masdevallias.—Where many of these plants are cultivated, a house when possible should be utilised for them, for though the plants are of easy culture, their healthy look is quickly spoiled if general conditions are not what they should be. There is no species of Orchid that has come under my notice which has greater need of moisture at the root and in the atmosphere than Masdevallia. From the present time until the end of January it is essential that the quantity of moisture at the root should be lessened, but the plants not allowed to become dry, as this would seriously injure them, and shrinking of the substance of the leaves would commence. The best time for repotting most of the Masdevallias is in the early part of the month of October or in February. They require a large amount of drainage in the pots, so that the compost will not become soon soured from the large quantity of water afforded them during the season of growth. The compost may consist of three parts good fibrous peat, one of sphagnum moss and coarse silver sand, and should it become necessary to shake or pick out all or much of the old potting materials, it is well to insert into the ball some clean crocks, which are better than pieces of charcoal, the roots adhering to these. The plants should be placed upright on the drainage, the top of the roots being just visible in the potting material. The best position for a Masdevallia-house is against a high wall that faces to the north. The roof should be kept as low as will admit of a person moving in the house with comfort. No ventilation at the bottom of the house is necessary, for the greater the amount of moisture it is possible to keep, with but little air afforded by the top ventilators, the better. Draughts of cold air are sure forerunners of the unsightly black spot, which first appears on the underside of the leaves. A temperature of 50° should be maintained during the winter months, and this should be obtained with as little fire-heat as may be. On cold, windy, or frosty nights, the house should be covered with mats or other material, to save the necessity of using much artificial heat. The species of Masdevallias which I find to like a degree or two warmer and a drier atmosphere are Chimæra, Bella, and Tovarense—a temperature of 55° suiting these admirably. *A. G. Catt, Parkfield Gardens, Hallow.*

The Flower Garden.

Bedding Plants.—Constant attention must be paid to stove plants in pits and frames, and any sign of decay and mould immediately removed. If the shoots of old plants which have been taken up and stored away, should show signs of mould, cut them away. Free ventilation should be given whenever the weather is mild and dry, and that as early as possible, especially on fine mornings; and any plants requiring it should then be watered, so that the foliage and drainage may dry up before the pits are closed for the night. Take special precautions against excessive water at the roots, and a too damp atmosphere. Dryness at the root, if not carried to extremes, is not so injurious or to be so much dreaded as excessive moisture. Do not apply heat at night when the pits and frames are closed, except during frosty weather.

Roots.—Do not allow frost to penetrate to the

roots of Dahlias, Salvias, Cannas, &c., before taking them up for storing. If after they are taken up they can be laid in an open or dry shed, where they can dry a little before being stored away, so much the better.

Protection.—Prepare protecting materials for all half-hardy subjects; coal-ashes are about the best to use for the protection of roots, as there is no danger of its being scratched away by birds, as is the case with leaf-mould or cocoa-nut fibre. All climbers on walls should have their roots covered with a good thickness, sufficient to exclude frost; and also such plants as Dielytras, Salvias, Acanthus grandiflorus, Gunnera scabra, Tritonias, Lilium auratum, Fuchsias, Hollyhocks, Aloysias, &c. It is much the best to be on the safe side, and to be prepared, so that no time should be lost in carrying out the above. Where leaf-mould or other litter is used around specimens of any kind standing singly, it should be surrounded by some dwarf wire-netting, or some weed or long straw laid thick and closely, and pegged down, which will, besides keeping the wind from blowing it away, and the birds from digging it out, look neat and tidy, and will remain so till removed in spring.

Roses.—The planting of Roses may still be continued in moderately dry and elevated positions; mulching well to exclude frost. Teas in beds should receive protection for both roots and the shoots. Some cultivators take up their Teas annually, and lay them in under a north wall, where they can be protected from excessive rains and severe frosts. They are taken up about the first week in March, and replanted in their summer quarters, which should be a good sunny position, in soil of a sandy nature not heavily manured, rather selecting a poor soil, and well mulching and watering the plants after planting.

Leaves.—These should be raked and cleared up as soon as possible, stacking them away. They can be used for protection or allowed to rot down for a supply of leaf-mould.

Walks which are in a bad state, should now either be turned or re-gravelled, as the case may require. Pruning of Privet and Laurel hedges, and shrubs in general, should be now carried on, preserving neatness as much as possible as the work proceeds. *D. C. Powell.*

Fruits Under Glass.

Cucumbers.—Old plants in full bearing will be benefited by moderate supplies of weak liquid manure a few degrees warmer than the mean temperature of the bed, which should not be much below 80°. Crop these plants lightly, and keep them thin, so as to maintain the supplies from them till January, after which time the winter Cucumber plants proper may be expected to fruit. The weather having been so far of a mild character over most parts of the country, hard firing will not have been required, and in consequence the plants are free from red-spider, thrips, &c. The small yellow species of thrips is an insidious enemy, difficult to eradicate, seeing that fumigation is dangerous in winter, the foliage being very delicate and very susceptible to injury; at all events, our plants when fumigated in winter seldom recover from it. Continue to give the Cucumber hills top-dressings of fresh loam mixed with fresh horse-droppings and bone-dust, placing a small quantity over any white roots which may show.

Where the heating arrangements are such that hard firing at night becomes a necessity, it is well to assist the heating apparatus by putting hillocks of fermenting material on the floor of the house, regularly turning and refreshing them. This will invigorate the plants and prevent the bad effects of too great heat in the pipes, and if a covering of mats, oiled canvas, or other covering can be drawn over the glass at night, radiation of warmth will be greatly prevented and moisture retained. Day temperature, 70°. Plants coming in for fruiting in February should be trained very thinly over the trellis, but not closely pinched, allowing them to grow on the extension principle, stopping runaway shoots only, and removing unnecessary laterals, so as to build up a vigorous plant with wiry bine. Plants in large pots, if packed round with prepared fermenting material, give good results; whereas, those planted out on rank manure are luxuriant and pleasing to look at, but, like other overfed prodigies, they soon fall victims to the dreaded Cucumber disease, for which there is no known cure.

Orchard-houses. — The houses containing trees which are intended to ripen their fruits in May should be closed, and if the trees are in pots, which I prefer, they should now be arranged—the Figs at the warmest part, Peaches and Nectarines next, and then Pears, Plums, and Cherries, in the order named, and only such trees as have had proper preparation should be forced thus early. A mass of fermenting material placed around the pots will stimulate the buds into growth. The varieties usually selected for this work will stand a slightly increased temperature by day, should the weather continue bright and mild, and air may be freely admitted; but the night temperature should not exceed 45° to 50°, until the trees commence opening their flowers, when 50° may be taken as the minimum. Progress is slow now, but it becomes rapid after the New Year, and time, apparently lost now, may then be fetched up, but there should be no greatly higher temperatures. Continuous and gentle ventilation of the house is at all times necessary, and care taken that the trees are dried once at least in twenty-four hours. Syringing must be regulated according to the degree of moisture escaping from the fermenting material; if that be great, syringing will necessarily be less, the water employed should be warmed rain-water.

The Reserve Ground.—Fill up this division with maidens, or, better still, two years' grafted trees, selecting those in which the union of stock and graft is smooth and perfect, that are free from large scars and wounds, and which may be brought into a fruitful state in two years if grown on suitable stocks. If these small trees are lifted annually, fibrous roots will abound on them, and they will be in readiness to take the place of exhausted trees. These trees, before coming into the orchard-house, should have been grown for one year in a pot. There is a certain amount of prejudice against the cultivation of Peaches, Nectarines, Plums, and Cherries in pots, which I myself once shared; but my success with pot trees made me a convert against my will, and I feel sure that any one who has the necessary enthusiasm to make the attempt will be amply gratified with the results. *W. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

The Bushes and Pyramids in the Garden.—All vacancies should be made good, and any needful rearrangement carried out, and a little fresh dressing in most cases put over the roots, so that the roots may be induced to keep near the surface of the soil.

Raspberries.—If previous directions have not been carried out, no time should be lost in getting the canes thinned out to six or eight to a stool, and made secure. Where canes are tied in as advised, they may now be topped; on the other hand, where the soil is heavy, and the canes are not yet matured, the topping should be left until the spring. These fruit, as well as those of Gooseberry and Currant, should be pricked over, after affording them a mulching of manure, and the poorer the soil, the thicker the mulching should be.

Pruning, Tying, and Nailing.—Advantage should be taken of open weather to push on these operations, as the Cherries, Plums, Pears, and Apples, are now leafless, and quite fit to be attended to. Pruning of fruit trees is always best if performed in open weather; also the washing and dressing of the same—matters which should not be neglected.

Plums and Cherries are attacked with both green and black aphis, and now is the time to wage war against these foes. If the labour can be afforded, the trees should be untied or unnailed, and the branches washed carefully with strong soapsuds with brushes, and also syringed with the same from the garden-engine. The walls, if old, may be washed over with thin cement. Morello Cherries are often eaten up with black-fly in summer, and the trees, after standing in cold aspects, have little recuperative power. The roots of these Cherries should have good drainage and raised borders, the roots being kept to their allotted space. Pears get infested with a minute white scale, which proves injurious by checking the growth of the branches. To get rid of this scale-insect, paint the whole of the wood with a mixture of 10 oz. of Gishurst's soap, added to 1 pint of paraffin, in a gallon of warm water, with some clay to give body to it. This dressing clears the tree of the insect, and gives the bark a shining, healthy appearance. The surface-soil and mulching under trees so affected should be taken away and burnt, and fresh compost, consisting of loam, lime-rubble, burnt earth, may then be spread over the roots. If old, thickly-set spurs are infested, it is well to thin out these, so as to allow of the free working of the scrubbing-brush. Apple trees infested with woolly aphis or American blight should have the cankered parts scraped down to living tissue, and be scrubbed with a solution of Gishurt's soap, at the rate of 8 to 12 oz. to 1 gallon of warm water, and then painted with a mixture like that I have recommended for Pears infested with scale. When this is finished, the surface-soil should be removed as advised for the Pear borders, and the soil soaked with strong soapsuds, not once, but often, at intervals of a fortnight. *A. Evans, Lythe Hill, Haslemere.*

The Kitchen Garden.

The Cabbage Quarter. — Plants which were planted early will have grown rather faster than is desirable, and as a slight check to further rapid growth, a lifting of the plants with a spade or fork, treading the soil firmly about them again, will bring about the desired end. This checking of growth should only be done when the plants are growing very strong, in loose, rich soil; in hard soil it seldom becomes necessary. Keep the hoe in frequent use when the soil is dryish, and draw a little of it up to the stems to steady and protect them. Plants in the seed bed should be transplanted at a few inches apart in other beds, and if these be not required there will be but very little lost in labour or space, and it is as well to be prepared with plants to fill up vacancies. Lime and soot should be freely used among the plants; and should slugs be very troublesome, daily hand-picking is the only certain means of lessening their numbers.

Potatos.—Sets of early varieties should be placed in boxes of light soil, in a warm house, to sprout. The forcing of Potatos may commence at any time after the middle of the month of December, successional lots being planted during January, February, and March. For the first lot, 12 inch pots may be successfully employed; these should be clean, and drained with a few crocks and rough soil, and filled three-parts full with a rather light soil, space being left for moulding. Three sets should be put into each pot, and buried 3 inches deep in the mould, which must be made firm. The crop is usually more satisfactory when the eyes, with the exception of one or two of the strongest, are rubbed off. Stand the pots in a vinery or Peach-house newly started, and afford no water till growth begins.

Hot-beds may be made up with leaves and dung previously heated and turned over, and the beds when finished should stand 3 feet high at the back, and 2½ feet at the front, and wider than the frame; tread the mass to make it firm. Potatos in frames require about 10 inches in depth of soil, and the sets to be put in at from 6 to 8 inches apart. Guard diligently against too strong a bottom-heat, and carefully admit air when the tops appear above the soil, to prevent their spindling. Seed of Radishes may be scattered thinly over the soil when the planting is finished. *H. Markham, Mereworth Castle, Maidstone.*

Pyrus malus.—The Apple—dried sour Apples, *kashta-seb-i-tursh*—is a cultivated tree in the better class of orchards. Immense quantities of Apples are raised in Persia, from whence they are exported to Herat for further exportation. The district round Herat does not produce such fine Apples, or in the quantities that they are grown in throughout Persia. There are two marked kinds, the sweet and the sour, the former are eaten fresh, the latter are usually dried, and are cooked to be eaten with various foods; these are largely exported to Southern Persia, in smaller quantities to Afghanistan. The natives say that in the hills of the Paropamisus range, at its eastern extremity, a wild Apple is common. *J. E. T. Aitchison, "Notes on Products of Western Afghanistan and North-Eastern Persia."*

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	Dec. 1	Dutch Bulbs, Spiræas, Liliums, &c., at Stevens' Rooms. Dutch Bulbs at Protheroe & Morris' Rooms.
TUESDAY,	Dec. 2	Bulbs, Liliums (auratum and others), at Protheroe & Morris' Rooms.
WEDNESDAY,	Dec. 3	Dutch Bulbs, Spiræas, Liliums, &c., at Stevens' Rooms. Greenhouse Plants, Ferns, Tuberoses, and Dutch Bulbs, at Protheroe & Morris' Rooms. Clearance of Nursery Stock, Greenhouses, Plants, &c., at the Bedford Nurseries, Haverstock Hill, by Protheroe & Morris (two days).
THURSDAY,	Dec. 4	Imported Liliums from Japan, Tuberoses, Lily of the Valley Crowns, &c., at Stevens' Rooms Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Dec. 5	Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Dec. 6	Dutch Bulbs, Spiræas, Liliums, &c., at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—41°.3.

Fruit Growing and Consuming.

There are many ways of looking at Apples or Pears—as at most things. Some people value them for their size and weight, others for colour, some for eccentricity in shape—most people esteem them for their flavour. Take us on the whole, we are certainly a fruit-loving people. Nor must one forget or overlook the garden lover, who likes to pop in an Apple tree here and there—just for the sake of the flowers and for the beauty of the coloured clusters of fruit. With very many the Crab is a garden favourite; and there are people who care little for exhibitions at table of the Belle Argervne—not for eating. There are others who value a line of tenderly cared-for cordons, and from all of these folks valuable lessons have come for use in the everyday matter-of-fact fruit growing for profit. Of this the pages of this journal have given proof enough in years past, and in recent times; testimony is also to be found in the pages of our contemporaries, agricultural as well as horticultural. Evidence is also given of our great love for fruit in our monthly paragraph entitled, "Stock-taking," which is a perpetual reminder, as well as an encourager of such among us as desire to encourage fruit culture wherever it is posssible to "stick a tree," tend it properly, and achieve a fair average result. Our last paragraph under this heading informs us that the imports into the country of Apples in barrels amounted (in October) to 586,832 bushels; other but unenumerated fruits ran to 686,262 bushels; in the ten months, Apples figured at 1,691,072 bushels; and the "other fruits" at 3,181,375 bushels. These brief items require no comment; they are a justification for every step taken by every association or society in the country, for every effort made by them to help the fruit-grower, and to increase the number of them. They are, further, a justification to the Fruiterers' Company of the City of London in "approaching" the Lord Mayor recently, with the object of getting together a fund—a national contribution—for the purpose of supplementing the present means and appliances established for furthering and encouraging the proper and widely-extended culture of fruits suited for the climate and soil of this country; there is no doubt about their suitability for the appetite of the true Briton! Supposing the fund to be obtained, how is it to be properly utilised? Surely it would be folly to start any more societies when there are ready to hand such representative bodies as the Royal Horticultural and the Royal Agricultural Societies, and the Fruit Growers' Association. To these add the myriad county and affiliated local societies, and then we have as fine a set of propellers as could be imagined for working by money as a motive power. The movers in this new departure could not do better than, when their way is clear, approach the societies above mentioned, and endeavour to join hands with them. They are well versed in the art of organising—more than that, they know exactly what is required, and they know the difficulties now besetting the path of the fruit-grower and his friends — the fruit-consuming public.

Several things are necessary to the encouragement of fruit growing—one is the making the sale of land as easy as the sale of the produce grown upon it. Not a single word need be added to this, as so much has already been said on this aspect of the subject in these pages. Improved railway tariff means much to the grower for market, and to this also we have already devoted much space. Gathering, packing, sorts to grow —all these things have been attended to here and elsewhere. Of course, much more could be said, and doubtless will be said, in good time and in season; the present is not, perhaps, a fitting season, except in cases where planting operations are about to be undertaken.

Taking all things into consideration, the Fruiterers' Company, whilst deserving the thanks of the community for what they have already so well done, and intend doing, could not do better than ally themselves to those who have already done so much for the promotion of the fruit "interest." Doing that, they bring to their aid the most practical men in the country, as well as men who represent very much of the country's wealth. The mere possession of a big fund will not benefit the subscribers or the nation if experienced guiding heads and hands be wanting at the helm.

Decaschistia ficifolia.—We are indebted to Mr. Bonham Carter for the opportunity of figuring this newly-introduced shrub (fig. 122). Its history was narrated, and a botanical description given in our columns on November 17, 1888, p. 565. In Nature it forms a shrub, or low tree, but Mr. Carter's gardener has treated it like some herbaceous perennial, cutting it down in the autumn, with the result that the flowers are produced on the new wood in the following season. This fact adds greatly to the value of the plant for decorative purposes. It is not everyone who has room for stove shrubs of large dimensions, or who cares to give space to a tree that "takes its time" before it produces flowers. The flowers are like those of a Hibiscus, the essential difference between the two genera residing in the capsule. The general appearance of the flower is shown in our illustration, to which we need only add, that the colour of the flower last seen is a yellowish-buff, with a deep purple eye.

The Late Mr. Hibberd.—It is generally felt that some permanent record should be made, expressive of the sense entertained by horticulturists, of the loss they have experienced in the death of Mr. Shirley Hibberd, and of their appreciation of his disinterested services to horticulture. As the representative Society of the empire, and one which benefited so largely by his counsel, and by his active services on its committees, as well as in the direction of its gardens at Chiswick, it has been suggested that a meeting be held at the rooms of the Royal Horticultural Society, with the sanction and approval of the Council, on December 9, to take the matter into consideration. A request will be accordingly transmitted to the Council to take the necessary steps for carrying out this purpose, and there can be no doubt that the Council will willingly accede to the request.

—— At a largely attended meeting of the committee of the National Chrysanthemum Society, held on Monday evening last, November 24, at Anderton's Hotel, Fleet Street, E.C., Mr. R. Ballantine in the chair, it was unanimously resolved:—"The committee of the National Chrysanthemum Society desire to place on record their recognition of the service to Floriculture, and to the cultivation of the Chrysanthemum in particular, rendered by the late Mr. Shirley Hibberd; their grateful appreciation of his valuable co-operation in reading a paper at one of the conferences, and speaking at the banquet held in connection with the recent Centenary Celebration, and their sense of the great loss to horticulture and horticultural organisations through his lamented death." A copy of this resolution was ordered to be sent to the executors of the late Mr. Shirley Hibberd.

—— The funeral, which took place on Saturday last, at Abney Park Cemetery, was attended by about 200 persons, among whom were Messrs. A. F. Barron, H. J. Veitch, G. Gordon, Dr. Masters, A. Slocombe, R. Ballantine, B. Wynne, C. Warden (Clarendon Park, Salisbury), F. Q. Lane, W. H. Collingridge, H. Cannell, C. T. Druery, J. Willard, P. McKinlay, Col. Mackenzie (Epping Forest), W. Jordan (Regent's Park), A. Turner, H. B. May, H. Williams, J. Weeks, H. J. Laing, W. Watson (Kew), W. Balderson, J. James, T. S. Ware, E. Saunderson, R. Glendinning, C. M. Mitchell, and F. Fitch. The Royal Horticultural Society was represented by its Secretary, the Rev. W. Wilks; Mr. Brewer on behalf of Messrs. H. M. Pollett & Co.; and Mr. Caudwell, of Messrs. Sutton & Sons. Floral wreaths, &c., were numerous, and were from the following:—The United Horticultural Benefit and Provident Society, Mr. and Mrs. Knighton, Mr. and Mrs. Gordon, Mr. and Mrs. A. F. Barron, Mr. L. and the Misses Barron, Rev. S. Goldney, Messrs. H. Cannell & Sons, Mr. and Mrs. Hargreauves, Mrs. Fitch, Miss Roberts, Mr. Charlton, Mr. and Mrs. Crute, G. Stanton, Messrs. Sutton & Sons, *Gardeners' Magazine*, Mr. and Mrs. Jackson, Messrs. W. H. & L. Collingridge, Dr. Hogg, Messrs. G. Bunyard & Co., Messrs. B. S. Williams & Son, Messrs. H. A. and Mrs. C. Turner, Mr. and Mrs. C. M. Mitchell, and Mrs. E. Dixon; while on behalf of his youthful daughter, Nellie, a basket of flowers was sent.

Crystal Palace.—An exhibition, comprising everything appertaining to gardening, such as appliances, buildings, heating apparatus, mowing machines, seeds and plants, soils and gravel, manures and chemicals, earthenware, tools and cutlery, will be held at the Palace from Tuesday, March 3, to Saturday, March 21, 1891. The entire length of the nave of the palace will be apportioned to the several exhibitors, and so arranged as to give the greatest amount of frontage to each for the most advantageous display of goods. It is the intention of the Directors to utilise the great resources of the Company in electric and fairy lighting, in the illumination of the exhibition on those occasions when the closing hour is after dark. There will be two special competitions of exceptional interest—the special arrangements and regulations for which will be sent on application. The first a lawn-mowing competition, to take place in the Crystal Palace grounds, and the second for the best spraying apparatus. Medals or Certificates will be awarded for the above. All correspondence and inquiries to be addressed to Messrs. J. F. Peasgood and William Brooks, Crystal Palace, London, S.E.

Chrysanthemum Exhibition at Ghent.—The first place at the recent exhibition was taken by M. Louis Van Houtte. Among amateurs, M. O. de Meulenaare was to the fore, both showing excellent examples of good culture and good flowers. M. Reydellet, of Valence, showed several novelties. Mixed with the Chrysanthemums were Palms from the Countess Kerchove de Denterghem, and MM. de Smet; Conifers Aspidistra ophiopogon, Aucubas, and many other, plants gave diversity. The exhibition was, we are

informed by our Belgian correspondent, visited by M. Yoshida, Secretary of the Horticultural Society of Tokio.

Chrysanthemums at Antwerp.—The most notable exhibitors at the recent exhibition in the commercial capital of Belgium, and of which our correspondent sends a report, were MM. A. Vanderlinden, Elsen Lunden, and Madame Grisar. Among nurserymen, Messrs. F. Vermeulen, Aug. de Bosschère & Sons, and De Beucker, obtained the highest commendations. M. Vanderlinden showed a specimen of Etoile de Lyon, 3 feet 8 inches in height, a yard in diameter, with twenty-nine enormous flowers. Another Etoile de Lyon attracted attention by the circumstance that while all the other flowers on the plant were rose-coloured, three were white. A specimen of Thunberg, nearly 6 feet in height, 2 feet in diameter, bore twenty flowers, many of them nearly 8 inches across. Messrs. Aug. de Bosschère arranged their plants amid Palms and other decorative plants, an example which, we hope, will be generally followed. Messrs. Cannell exhibited cut flowers of Pelargoniums.

The Diseases of Plants.—The following resolutions were passed at the recent meeting of the International Agricultural and Forest Congress at Vienna:—

1. Considering that the numerous diseases and other injuries to plants cause constant damage, and entail great losses on cultivators and on the public the Congress considers that it is absolutely necessary to establish scientific stations exclusively devoted to the study of the diseases of cultivated plants.

2. In order that these phytopathological stations may more easily be brought into relation with scientific and practical circles, they should be esta-



Fig. 122.—Decaschistia ficifolia: Burmese shrub: flower buff, with a purple eye. (see p. 628).

blished in a central locality in each country, and one well situated with regard to means of communication, and should be Government institutions, formed for the object of helping practical work by making gratuitous analyses and researches in connection with the subject.

3. The Congress considers that observations and trials made on a common plan in all cultivated countries, give the best promise for success in the search for appropriate and sure methods of combating plant diseases. Great outlay could be saved by staying future epidemics, if, thanks to a network of scientific observations extending over all countries, the districts not yet infested by plant diseases, could be prevailed upon to take the necessary measures in time.

4. The Congress considers it necessary that the directors of all these pathological stations in different countries should arrange to meet annually to discuss and pass such resolutions as shall be deemed necessary.

5. The Congress shall elect an International Committee which shall have the right of adding to its members, and which shall be in communication with the Agricultural Society of Vienna, and in a position to consult with this body on the steps to be taken towards the formation of scientific stations devoted to the study of the diseases of plants, and to organise a system of phytopathological inspection in all cultivated districts. *From a Report on the International Agricultural and Forest Congress at Vienna*, 1890.

Mrs. Alpheus Hardy.—This Chrysanthemum was shown both at Ghent and at Antwerp lately, and though the plants were in bad condition, the flowers achieved "*un immense succès de curiosité*." The plant seems to have done badly both in this country and on the continent.

Burmese Plants.—In the last part of the *Journal of the Linnean Society* is an interesting notice of the plants collected in Upper Burmah by General Collett, and technically described by Mr. Hemsley. We cite the following as interesting to gardeners:—"The beautiful Schima Wallichii, with white Camellia-like flowers, and a member of the same natural order as the Camellia, is a common tree, especially on the western border of the plateau. Only two species of Rosa were seen, and both are new. The beautiful R. gigantea is particularly conspicuous, climbing over tall forest trees, from the top of which the long pendent branches, covered with very large white flowers, hang down in rich profusion. This Rose, which has larger flowers probably than any other wild species, is seen from considerable distances in the jungle, reminding one more of a large-flowered Clematis than of a Rose. Though apparently spread over the whole Shan hills, and extending to Muneypore in the north, where it was previously found by Dr. George Watt, it is only locally abundant, chiefly in dark shady valleys. It is most nearly allied to R. indica, which has recently been found wild in China, and is, perhaps, only a fine variety of that species. Vigorous young plants raised from seed collected by myself, are now flourishing in Kew Gardens. [It will be remembered that dried specimens were shown at the Rose Conference at Chiswick.] The other new Rose, Rosa Collettii, Crépin, is less common, but where it occurs it grows vigorously, and is a profuse flowerer. It is never found far from water, and seems to prefer the banks of streams, where I have found it growing almost to the exclusion of other suffruticose vegetation. A big Honeysuckle, Lonicera Hildebrandiana, is, so far as I am aware, a rare plant, though I have been told that the flowers of this species are much used in decorating the temples at Pindiah, near Pwehla. I found it only in one locality, at a season when unfortunately it was almost past flowering, and when the fruit was not sufficiently mature to contain perfect seeds. It is a conspicuous shrub, with large, dark, glossy leaves, and fine crimson flowers 7 inches long, and by far the largest of any known species of Honeysuckle. It is much to be desired that this beautiful shrub may yet be secured, and the plant raised for the adornment of our gardens. . . . Among the Orchideæ are several novelties, two of which are highly curious, and merit further notice. Cirrhopetalum Collettii, Hemsl., is a most singular plant, bearing five or six dark purple flowers in an umbel at the summit of a scape 2 or 3 inches high. The flower has little or no odour, and is remarkable for its extremely long, attenuated sepals, which are highly mobile, and are wafted about by the slightest breath of air. They are also furnished with a number of streamers or banner-like appendages, which, as Darwin remarks of an allied Bulbophyllum, "when blown by a breath of wind wriggle about in a very odd manner." Whether these wonderfully elaborate arrangements have the effect of attracting the notice of passing insects, or what other purpose they may serve, might form a subject for interesting speculation; and I much regret that the small opportunities I had of observing the plant do not admit of my forming any theory on the subject. Suffice it to say, that the spectacle of the long narrow sepals and the little streamers all waving about together, is extremely fantastic and curious, and will, I hope, soon be seen in England, as there are some healthy plants of this species now growing at Kew. The other new Orchid referred to is Bulbophyllum comosum, remarkable for the dense bottle-brush-like raceme of flowers terminating the curved stout scape—in this character quite unlike any other variety of the genus. The flowers are very sweet-scented, and are much prized by the Shan maidens for ornamenting their hair. The plant is very common in some localities, and I have often seen its flowers exposed for sale in the village bazaars. Unfortunately, under the impression that it was well-known, I did not take the trouble to send home living plants, and even my dried specimens are very imperfect, wanting both leaves and pseudobulbs.

Salvia splendens with Chrysanthemums, &c.—In the large conservatory of Haydon Hall, Eastcote, Mr. Fry, the gardener, secures a fine effect by artistically arranging large specimens of Salvia splendens with Chrysanthemums, thus making a pleasant break from the "all Chrysanthemum" displays one sees at this season. The Salvias and Chrysanthemums have been specially fine at this place this year, and the Primulas, Agathæa cœlestis, Poinsettias, and Bouvardias, which are displayed with Ferns and Palms on the side stages of the conservatory, add beauty to the arrangement. Acacia grandis is now a very fine object, 7 feet in height, being literally covered with flowers; other species were likewise well done. Abutilons flowering on the roof are showy; and amongst the few Orchids grown are some plants of the favourite old Zygopetalum Mackayii in bloom.

Linnean Society.—On the occasion of the meeting, November 20, Professor Stewart, President, in the chair, Mr. J. F. Braga and the Rev. E. McClure were elected Fellows. On behalf of Mr. Henry Hutton, of Cape Town, Mr. B. D. Jackson exhibited some follicles and seeds of a somewhat rare Asclepiad Dregea floribunda; and showed also, on behalf of Mr. W. Matchwick, some ripened seeds of Ailanthus glandulosa from a tree at Reigate said to be a hundred years old. Professor Bower exhibited several drawings from microscopic sections of carboniferous nodules belonging to Professor Williamson, and pointed out the peculiarities of structure. Microscopic details of such sporangia being very rare, he remarked that a comparison of the slides showed a peculiar uniformity of type. For comparison with these sporangia from the coal, he exhibited sections of the sporangia of Todea barbara, and while not going so far as to refer these carboniferous sporangia (which are not attached to the plants which bore them) to any distinct genus, he thought the Osmundaceous affinity was unmistakable. Mr. J. E. Hartwig exhibited some original MSS. and water-coloured sketches of birds, fishes, and plants, found in Sussex, by William Markwick, the friend and correspondent of Gilbert White, of Selborne, which had been presented by him to the Society in his lifetime, and had been lost sight of for many years. The drawings are sufficiently well executed to enable the correct determination of several species which the author had failed to identify. At an evening meeting to be held on Thursday, December 4, 1890, at 8 p.m., the following papers will be read:—1, "On the Orchid Genus of Brownheadia," by H. N. Ridley, F.L.S.; 2, "On the Botany of Kandahar," by J. H. Lace, F.L.S.;" 3, "Botanical Visit to the Auckland Isles," by Thos. Kirk, F.L.S.

Caution to Advertisers.—We have to warn gardeners seeking situations to beware of a certain individual, who, by fraudulent means, is obtaining money on the pretence of obtaining situations for them. His nefarious practices, so far as we have been informed, have been confined to the western and south-western parts of the country. The following is a letter which he sent to our informant, and which is published in full, omitting name and address:—"If you are not engaged, can offer you a vacancy at Clifton on the usual terms, viz., booking fee of 5*s*., and a promise to pay 2½ per cent. commission on first year's salary three months after taking situation. Head of three; wages 30*s*. per week, and rooms. Should, of course, expect you to give us a few orders for seeds, &c." [!]

Farewell Entertainment to Mr. Robert Farquhar.—Mr. Robert Farquhar, who has for nearly half a century been gardener at Fyvie Castle, was on Wednesday, November 19, entertained to supper in Mr. Lyon's Hall, by a large number of his friends in Fyvie and neighbourhood. Mr. Farquhar, who has resigned his position as head gardener, is about to leave for America, where he intends to take up his residence, and where a number of his family are in business. If any evidence of the respect in which the worthy gentleman is held in Fyvie was required, the large and representative gathering on Wednesday fully testified to the fact.

Chrysanthemum Sport.—Messrs. Slater & Sons, of Malton, obligingly send us a flower-head of Chrysanthemum Duke of Edinburgh, in which one half of the florets are yellow, the other half white, flushed with pale lilac, in the ordinary manner. The flower is precisely similar to that which was figured in our columns in 1889, November 30, p. 632.

Loess Earth in Thibet.—In a very interesting paper, entitled "An American in Thibet," in the November *Century*, Mr. Woodville Rockhill gives a brief but good account of "Loess," which is a yellowish earth, extremely porous, and, when dry, easily reduced to an impalpable powder. One of its peculiar features is the perpendicular splitting of its mass under the action of the rains, forming chasms or *arroyas*, many of which are hundreds of feet deep. Its porosity has also the effect of rendering it highly suitable for cultivation, as long as the subsoil is sufficiently wet to supply moisture to the roots of the plants by the tubes of the loess. Furthermore, crops planted in the loess do not require to be manured, and 3000 years of cultivation of the Shan-hsi and Shen-hsi [Thibet] loess has not exhausted it in the least. Loess beds, where they are compact, and have a vertical face, are used by the people to make cave habitations. These houses are warm in the winter, and cool in the summer.

The Extension of Fruit Cultivation.—We learn from the *Pall Mall Gazette* that about London, in almost every direction, but especially towards Farningham, in Kent, an added extent of land is being prepared for the growth of fruit. Fields, many acres in extent, are wholly arranged for Strawberries. There are scores of acres being planted with Currant bushes. For the most part this vast area of fruit is destined for jam-making, an industry very large in London, which the policy of

the Government as to sugar at one time placed in jeopardy. An estimate has been published in an official document, that seven of the principal jam-makers and confectioners in London use 34,000 tons of sugar per annum. It has been estimated that the quantity used in Scotland for similar purposes is about 40,000 tons per annum. The soil and climate of parts of Scotland are admirably adapted for Strawberries, and as far north as Aberdeen they are produced very extensively.

The Smoke Nuisance at Salford.—At the Salford Police-court on the 31st ult., before the Stipendiary (Mr. J. Makinson), Messrs. Bailey & Craven, bleachers, dyers, and printers, Agecroft Works, Pendleton, were summoned under the Salford Improvement Act, 1862, for a smoke nuisance. Inspector Thompstone stated that the works are within 500 yards of the borough boundary. In consequence of the furnaces being "pushed," dense smoke was discharged from the chimney for thirty-four minutes in one hour on a recent date. The boilers were constructed to consume their own smoke, but were negligently used. Defendants had been fined twice before. Mr. Holmes, Deputy Town Clerk, who prosecuted, pressed for a continuing penalty. The Stipendiary thought that a continuing penalty could only be applied in cases where the furnaces were not constructed to consume the smoke, and not where action was taken on a single act of negligence, because a single act of negligence could not be "continuing." This, however, was the worst case he had ever heard of. It was monstrous that after all the talk about the smoke nuisance this chimney should be allowed to discharge dense smoke over the borough for so long a time. If it was necessary to raze the whole mill in order to abolish the nuisance it must be done.—A fine of 10*l.* and costs would be imposed. *Manchester Courier.*

Seeds, Fruits, and Seedlings.—Under the title "*Samen, Früchte und Keimlinge*," Dr. Karl Freiherr von Tubeuf has published a small volume devoted to the description and delineation of the seeds, seed-vessels, and seedling plants of the principal trees and shrubs cultivated in German forests. It is a handy little volume, which will be very useful to German students. We have nothing of the kind in this country.

Window Gardening.—Mr. J. C. Tonkin, of Scilly, writing to a local paper, suggests that a pretty bit of window gardening may be brought about in the following manner:—Procure a round, shallow dish (a glass one being preferable). In the bottom put a thin turf, soil uppermost, on the surface of which strew a few bits of charcoal. In the centre, place half-a-dozen bulbs of Narcissus obvallaris, yellow Trumpet Daffodil, one of the earliest to bloom, which can be bought for about 1*s.* 3*d.*; around this plant, rather thickly, Ornithogalum umbellatum, or Star of Bethlehem, a pretty white flower, growing in umbels. Around the edge of the dish plant mixed Crocus; then cover the same with a turf of moss, making holes in the same for the bulbs to push up their growth; a few bulbs of Triteleia uniflora, a pretty little white flower, growing on a slender footstalk about 4 or 5 inches high, and the foliage trailing over the moss, makes a pretty undergrowth. Then water freely, and keep it in a warm room, and you will have a good display in early spring. There are other varieties in the Trumpet section that might be used, but they are more expensive; for instance, Ard-righ, maximus, rugulosus, Achilles, all yellow, may be bought from 4*s.* to 9*s.* per dozen; Empress, Horsfieldii, grandis, bicolor—these range from 9*d.* to 1*s.* 3*d.* a dozen; or the largest of all yellow Daffodils, Emperor, 2*s.* a dozen. A good centre might alone be made with any of the single Incomparabilis section, such as Leedsii, Titan, Cynosure, Figaro, Frank Miles, or the great Welsh Daffodil, Sir Watkin, the largest of that section; or with the poeticus section, as Burbidgeii, poeticus ornatus, early flowering, and poeticus recurvus, one of the latest to flower. Another plan may be adopted:—Procure a deep glass jar, such as is usually sold with 2 lb. of marmalade. In the bottom, place about 2 inches of clean sand, with a few lumps of charcoal; plant on the surface three or four bulbs of any variety, and then fill with sand, just to the crown of the bulb. Water freely. In a short time the roots sent out will push up the bulbs so that the base will just rest on the sand. Keep in a moist room with plenty of moisture (tepid water), if early flowers are wanted. Bulbs thus treated do not exhaust themselves as much as if grown in water alone.

B. S. Williams Memorial Fund.—It being intended to close this fund at an early date, subscribers who have not yet sent in their donations are requested to do so, without further loss of time, to Mr. Harry J. Veitch, Hon. Treasurer, 544, King's Road, Chelsea, S.W.; or to either of the Hon. Secretaries, Mr. John A. Laing, The Nurseries, Forest Hill, S.E.; and Mr. A. Outram, 7, Moor Park Road, Fulham, S.W.

Chemical Manures for Apples.—M. Nicholas recommends, from the experience of ten years, a fertiliser composed of—

	Parts.
Nitrate of soda	75
Superphosphate of lime	150
Chloride of potassium	75
Gypsum	300
	600

Four hundred grammes of this mixture are applied to every square mètre of ground; but the quantity, and indeed the proportion of the ingredients, must be varied to suit different conditions.

Australian Salsolaceous Plants.—Baron Sir Ferdinand von Mueller has published the fourth decade of his monograph on these plants, which are not only of botanical interest, but which possess value as forage plants in salt plains and marshes. As decorative plants they are mostly unimportant, though the colour of their foliage is sometimes brilliant. In some the pistil has the form of an antique lamp.

Fontainebleau.—A botanical laboratory under the direction of Prof. Gaston Bonnier has been established at Fontainebleau. One especial object of the new institution is the study of the diseases of plants, and especially those which affect Vines and forest trees.

Iris Monspur × is a hybrid between Iris Monnieri and I. spuria, raised by Prof. Foster, and figured in a recent number of the *Garden*, where it is spoken of as a glorified I. spuria. The name is formed from a plan devised by Prof. Foster, and according to which the first syllable is taken from the name of the mother parent, the latter half from that of the male parent. The name is thus indicative of the parentage, while the fact of its ending in a consonant shows that the plant is of hybrid origin.

Renovating Orchards.—At the Falmouth Horticultural show on November 12, a paper on "Renovating Orchards" was read by Mr. J. Wright, on behalf of the British Fruit Growers' Association. We may refer to it in a later issue.

Marketing Fruit.—A method of marketing fruit which originated in Schleswig, but which has extended to many other parts of Germany, has proved successful in securing buyers against a bad article, and in giving an opportunity for good growers to make sales of a good article. Samples of various fruits are placed in dishes for exhibition in a sales-room by growers, who are prepared to furnish various kinds. The buyer has only to write his name and address on a card, with the quantity he wishes, and leave it at the central office, with the number of the plate. The order is then forwarded from the office to the grower, who in turn delivers his goods there. Here the fruit is inspected, and if it comes up to the sample in quality, it is forwarded to the buyer. If it proves inferior, it is returned at once to the grower. A grower who, on three occasions, furnishes goods inferior to the samples, is excluded from the market. The office receives 10 per cent. commission for inspecting, forwarding, &c. *Garden and Forest.*

A Gum-producing Plant.—In the last part of the *Icones Plantarum* is an account of Eucommia ulmoides, a most singular Chinese plant, as yet but little known to botanists, and the true affinity of which has yet to be discovered. "The most singular feature about the plant," we read, "is the extraordinary abundance of an elastic gum in all the younger tissues—excepting, perhaps, the wood proper—in the bark (in the usual sense of the word), the leaves and petioles, and pericarp; any of these snapped across, and the parts drawn asunder, exhibit the silvery sheen of innumerable threads of this gum." The trees are raised from seed by the Chinese (Patung and Szechwan are districts named), and when sufficiently grown, are felled, and the bark taken off. To this the natives attribute wonderful medicinal properties, the value of which has yet to be proved by Europeans. Pattens were formerly made from the wood, and the young leaves are sometimes eaten. It is hoped that at no very distant date a fresh supply of specimens will be obtained, which will enable those interested in this wonderful plant to prosecute their researches still further. It is to Dr. Henry that we owe what little we know of this important plant.

Rubus malifolius.—Some Brambles have pinnate, some palmate leaves, some six or seven leaflets. In the current number of *Icones Plantarum*, Dr. Focke describes one with simple leaves. R. malifolius, and a not uncommon plant in gardens, is the New Zealand R. australis, in which there are generally none, though some times traces may be seen.

THE CHÂTEAU DE MARIEMONT.

The extensive and beautiful property of Mons. G. Warocqué, one of the wealthiest of Belgian citizens, is situated in the pleasantest part of Belgium, and near to the historical town of Charleroi. When the town fell into the hands of the French in 1794, where are now the grounds of Mariemont stood the Château of the Prince de Lorraine, the magnificence of which the carefully-preserved ruins amply testify. Here, in one part of the garden, is all that remains of the palatial entrance-gate—the two huge basements, from which rose the columns bearing the arch and supporting the massive gates, which were approached by a bridge over either a natural or artificial branch of the Sambre. In another part of the grounds are the ruins of the extensive barracks occupied by the soldiers, all bearing traces of the ruin brought about by the bombardment, and the various devices of war.

Passing the entrance, and over the broad hard gravel drive, the first objects to be noticed are the lofty Firs and dark Yews beneath them, which are situated at the lower side of the gardens. The healthy appearance of these trees extends to all kinds of plants in the houses, garden, and grounds.

Passing clumps of Kalmias and other flowering shrubs, noble specimens of Sequoia gigantea, and many more stately Conifers, the visitor comes to the play-house, a wonderful structure, built of different kinds of hard polished woods, and used as a place for recreation when the weather is unfavourable for remaining outside. It is a beautiful structure, and one that gives a fine artistic effect, without any such marring of the scene as a badly-designed structure would do. Near by is the Rose garden, and everywhere the eye lights upon coloured autumn foliage in great variety, heightened and relieved by the bright green of the Firs and Cedars of Lebanon, and the silvery hue of the Deodars.

Then on the high ground to the right, the château itself is seen, a squarely built substantial structure of white marble, or of that marble-like hard grey granite so much liked by the wealthy Belgians, for if it is costly and difficult to work, it is also the most durable kind of stone for buildings. The views

from the mansion itself in every direction are pleasant ones; the domestic offices and stabling for some 150 horses are unseen; and the ranges of fruit and forcing houses are screened from view by trees. But an exception is made in the case of the Orchid and plant houses, and the noble winter garden, all of which are built *en suite*, and no concealment is attempted. The plan of the block is this. From the lower terrace to the upper runs a broad flight of granite steps, on each side flanked by lean-to curvilinear-roofed plant houses, one of which, now containing Indian Azaleas, is soon to become a house for growing Cattleyas, and the other containing scores of noble specimens of Anthurium Scherzerianum, some of which have, in their season, close upon a hundred spikes each. Ascending the steps, the Orchid-houses are reached. All have curvilinear roofs, and a glance through the treasures amply shows us that the culture of the plants is of a high order, and creditable in the greatest degree to the septuagenarian Orchid grower, M. Fondu, who, despite his years, is as active as a youth. It is impossible to give any but a general impression of the leading features in the Orchid collection. In several of the houses a superb lot of large specimens of Odontoglossum with noble sprays of flower, were found. O. Alexandræ and O. Pescatorei were the more prominent species, there being over 4000 of the former, but O. Edwardi, O. Uro-Skinneri roseum, O. pulchellum majus, O. mirandum, and O. Reichenheinana, were plentifully in bloom.

In another cool house were some fine Oncidium macranthum, O. prætextum, and others in bloom; and among the Cypripediums which form a rare and complete collection, in flower were noticed large masses of the curious and pretty C. Leechii, C. œnanthum superbum, with over twenty flowers; C. Arthurianum nearly as large; C. Ashburtoniæ expansum, some grand forms of C. Harrisianum, C. Curtisii, C. Io excellens, C. Williamsii, C. politum, C. Leeanum superbum, C. insigne violaceo-punctatum, C. Sallieri Hyeanum, C. Lindleyanum, with a grand spike; C. calurum, and other new varieties.

In the warm houses in which Vanda suavis and V. tricolor were still in flower, are some remarkable specimens of V. Lowii, there being in quantity and quality more of them there than perhaps in any other dozen collections put together. Here also were great specimens of Angræcum sesquipedale, just sending forth their flower-spikes; and a plant of the unique Vanda Warocquéana growing vigorously; some V. cœrulea and various other Vandas, Aërides and Saccolabiums were in flower.

In the Cattleya and Lælia houses masses of Lælia anceps, with twenty to fifty spikes, and many vigorous specimens of all the more showy species were met with.

The most extraordinary specimen noticed in these houses was a large mass of Cattleya Warocqueana, bearing 150 to 200 pseudobulbs. The leaves of this plant are remarkable for their shovel-like form and breadth, which is greater than those on any other specimen imported. When it produces the score or more of flower-spikes, its size indicates as its proper load, it will be worth a long journey to see. Vanda Sanderiana was showing a flower-spike; V. Kimballiana has a spray of fifty flowers; and Lælia Perrini, L. autumnalis, and many other species, were in bloom. In the centre of the block of houses just now inspected is a garden of Tea Roses, which occupies a space that would form an admirable site for a show-house for Orchids.

Forming the background to this garden is the Winter Garden, where are planted the finest specimens of Tree Ferns and Palms. The walls of this building are clad with Ficus repens, and the undulating surface of the bed is planted with mosses and foliage plants, from among which rise the stately Kentias, Cocos Bonneti, Philodendron pertusum, and other handsome plants, whose fronds and leaves reach almost to the ridge of the house, 24 mètres from the floor. Among the most noteworthy plants are the largest plant of Sabal Blackburniana in Europe; an equally large Arenga saccharifera, with spines at the crown like narrow swords; Cocos Bonneti and Chamærops Mazelii, reaching nearly to the roof; Cocos flexuosa likewise, with Philodendron pertusum twining up it. But to the wonders and beauties of the gardens of the château there seems to be no end, and in every part of the gardens there seems to be completeness and perfect neatness. The reason is not difficult to find, for Madame Warocqué, her husband, and Madame Warocqué, his mother, take the greatest interest in the gardens, and Mons. Fontaine, their clever secretary, takes an equal, although more practical, interest in them, knowing every plant and its history at sight, and having a pleasant fund of anecdote about many of them, which it takes but little persuasion on the part of the visitor to draw forth. M. G. Warocqué is President of the Orchidéenne of Brussels. *J. O'B.*

CYPRIPEDIUM ARNOLDIANUM.

This is a new hybrid between C. Veitchii (superbiens) and C. concolor (see fig. 123). Leaves 4 inches long by 2 inches wide, light green, with hieroglyphic-like tesselation of dark green; stem 5 inches high, dark brown, with white short down. Ovary six-ribbed, slightly downy. Flowers large, measuring nearly 4 inches across the petals. Dorsal sepal nearly round, slightly recurved on the sides, lemon colour at the base, extending upwards. The veins are of vinous-purple, slightly shading over the ground colour. The lower sepal is of the same colour, only the veins are not so pronounced. Petals 2 inches long, very broad, the inner portion lemon colour, while the outer portion is shaded with vinous-purple; three-fourths of the inner circle is covered all over with dark spots, as in C. Veitchii. Lip is long, with narrow opening, bright lemon-yellow at the base, with deep vinous-purple veins and dottings in the upper part. The column is light green, and the staminode, which is of a horseshoe-shape, is lemon-yellow, with purple border. This beautiful hybrid, which is well intermediate between the two parents, was raised at Short Hills, in a flowering state, in less than two years.

This is the quickest time on record for Cypripediums, and especially so, if we consider that C. concolor, one of the parents of this hybrid, is a very slow grower. Another noteworthy fact is, that this is the first distinct hybrid of American origin that was raised in a greenhouse open to the public in general; also that it was reared by a young man, Joseph Manda, Jun., whose age is less than the time it takes the average Cattleya to flower from seed. This beautiful distinct hybrid is appropriately dedicated to Hicks Arnold, Esq., of New York City, an ardent amateur of choice Orchids. *W. A. Manda.*

KEW NOTES.

Plants in Flower: *Renanthera coccinea* (Palm-house).—A plant which has been established on the trunk of a tree Fern for about six years. The flower spike had 63 flowers upon it when it first expanded, about a month ago, and it is still in good condition.

Musa ensete (Temperate-house).—This plant has been a conspicuous object amongst the big things in the temperate-house for the last two years. The inflorescence is not particularly attractive. Seeds are ripened freely by this species, in which respect it differs from M. sapientum, M. Cavendishii, and the other cultivated Musas; it also differs from them in producing no suckers, but perishing after flowering, like some of the Agaves.

Seaforthia elegans (Palm-house and temperate-house).—There is nothing unusual in the flowering of this fine Palm, which has produced its handsome inflorescence annually in the Palm-house at Kew for at least the last twelve years. Probably many are unaware of the fact that this Palm thrives in an ordinary greenhouse, and is one of the most suitable plants for tall conservatories.

Solandra grandiflora is still flowering in the Succulent-house (No. 5), where it has been in bloom since August.

Dahlia imperialis (Temperate-house).—A noble plant when well flowered, its immense terminal racemes of large star-shaped, snow-white flowers, being especially ornamental at this time of year.

Cabomba aquatica, in a tank in the Propagating-house, is in fine order just now, its elegant foliage and habit suggesting Ranunculus aquatilis. The flowers are accompanied by peltate leaves, and are yellow. Although not actually in flower, the Lattice-leaf plant (Ouvirandra) has done so well, and flowered so freely in the same tank as the Cabombs, that, to ensure the safety of the plants, the flowers were all removed a few days ago. Large numbers of seedlings have come up in the tank.

Napoleona Whitfieldii (Palm-house), the commoner species, viz., N. imperialis, flowers every year at Kew, but this other only rarely. The flowers are almost white, otherwise they are not unlike those of the last-named. A figure has been prepared for the *Botanical Magazine*.

Bauhinia tomentosa var. glabra (Palm-house).—One of the few Bauhinias which flower in England. It is a shrub 8 feet high, with a good habit, handsome foliage, and cupped flowers 1½ inch across, their colour pale yellow blotched inside with crimson.

Orchids.—Bulbophyllum cupreum, Cirrhopetalum Medusæ, C. Macraei, Angræcum Hildebrandtii, Aeranthus arachnites, Dendrobium McCarthiæ, Phalænopsis Esmeralda, P. Buyssonieri. These are the most interesting of the Orchids in flower now. *W.*

TREES AND SHRUBS.

PLANTING SHRUBS.

Now that planting is in full swing, a few words may not be out of place in regard to this kind of work, seeing that a well-formed and a well-planted shrubbery is an interesting and a beautiful feature in any garden, and, indeed, it forms the chief feature in some. If a good selection of shrubs is made, there is nothing so attractive in the spring and summer as the varied flowers and greens of the young foliage. When the soil is not naturally suitable for any particular plant, it may, with a little thought and labour, be made agreeable to its needs.

Then as to planting. As soon as the plants are received from the nursery, they should be laid in by the heels, if the ground is not ready for them, and receive a good watering. If the land to be planted is found too lumpy, or otherwise unkindly to the roots, some finer soil of good quality should be brought to the spot, and heaped in readiness, so that a shovelful or a barrowload, as the case may be, may be placed round about the roots. These should have all bruised or badly-broken parts cut off before putting the shrub in its place. Let the hole be more than large enough to spread out the roots nicely, and work the fine soil in and among the roots before filling in the staple soil. Tread the soil lightly, if it be in a wet state, leaving it until it is drier before doing so finally. Leave no tree for more than a few hours before making it secure from wind and ground game. In beds or borders a fence of wire-netting is the best guard against animals, but for single specimens a neater and less troublesome way is to bind closely small sticks or stakes around the stem, about the size of one's little finger, so that it is impossible for anything to gnaw it.

It is not often that shrubs require watering, but they should be examined in the dry, windy months of spring; and if watering be thought desirable, a good soaking should be afforded them. This is work that in the spring, when other work is pressing, is very likely to get overlooked; and the best man for the job is the one who planted them. Blue-tit and bullfinches should be shot during the winter, if bad weather prevail for any long period, as either

of these will do much damage in a short space of time. The birds should not be shot whilst on the trees, as worse mischief is sure then to be done. *W. A. Cook, Compton Bassett Gardens.*

Picea pumila Asselin.

This, as shown by M. Baltet recently, before the National Horticultural Society of France, is described as forming a small ovoid head, 4 feet high. It is very hardy, symmetrical, and grafted on the common Spruce. We presume the plant is a variety of the common Spruce, allied to the Clanbrassil variety.

Escallonia macrantha.

This shrub does remarkably well by the sea in Cornwall and elsewhere, and we have hedges of it planted about twelve years ago. These are 8 to 10 feet high, and as many feet wide, and hundreds of feet in length; and nothing can surpass the beauty of these hedgerows when the shrub is in flower. Last spring the young growth of the Euonymus was cut down by frost, but the Escallonias were not touched at all; indeed, it is much more hardy and much quicker in growth than the Euonymus, and sea winds have no effect on it. *J. Macers.*

The Home Nursery.

December is the busiest of months in a nursery, as much of the work of lifting and re-arranging young stock requires attention at this time of the year. The planting of fruit trees in their permanent stations should be completed this month; stocks of all kinds for next summer's budding should be got into the ground without delay, and these will have great advantage over those later planted. Cuttings of Gooseberries, Currants, Quinces, Briars, shrubs, both deciduous and evergreen, ought now to be made and firmly bedded in sandy ground forthwith. Quinces are best got in quantity from layers. Suckers of Damsons, Mussel, Pershore, Dymock, and other coarse Plums should be transplanted without delay, these making good stocks on which to bud or graft choice varieties. I have had shoots 10 feet in length, made in one season from buds put on the Pershore Plum. Good clean heads of Damsons can be had by budding on to the Pershore stock, but I prefer the Myrobolana stock for Plums that are to make cordons. Apple, Pear, and Crab pips may be sown for raising stocks; also Nuts, Walnuts, seeds of Conifers, deciduous and evergreen trees and shrubs may be sown. Cratægus and Holly berries, as well as Rose Haws, after being cleaned of the pulp may be laid in sandy soil, sowing them in spring. Mice and small birds are very destructive to seedlings, therefore should be looked sharply after. On stiff ground if sharp sand be strewed on the surface of the beds, frosts will not heave the seedlings out of the soil to any great extent. *W. Crump.*



Fig. 123.—Cypripedium Arnoldianum = C. Veitchi × C. concolor. (see p. 632.)

Foreign Correspondence.

Anemone fannini.

This plant has flowered with me this year from specimens which I imported direct from Natal in 1887. I have had it growing outside since that time in a border with an eastern aspect, where it grew rapidly, and made enormous leaf growth, but failed to show any sign of flowering until during the month of August of this year, when a few spikes appeared. Judging from the handsome coloured plates in the *Garden* and *Botanical Magazine*, the flowering was anticipated by me with the greatest interest, but whether, owing to the unfavourable sunless weather, or to the abnormal time of flowering (in the *Botanical Magazine* the flowering time is stated to be in April), the flowers did not quite satisfy my high expectations, but were, I am sorry to say, of an ungainly greenish-white appearance, and looked anything but beautiful.

I now intend to replant my stock of this giant Anemone on a warm south border, and I have no doubt that this more favourable and sunnier position will induce my plants to flower more freely, and to produce better-formed blooms than they have hitherto done. *C. G. van Tubergen, Junior, Haarlem.*

Home Correspondence.

Araucaria imbricata—(the Chile Pine).—At the end of an article on Araucaria imbricata in the *Gardeners' Chronicle* of the 22nd inst., I encounter a not disagreeable challenge to report on the wood of a specimen lately tested here. I do not venture to call it timber, as the tree could not have been much more than forty years old when cut down in 1888. It was probably of some size when planted in 1853, as, in December, 1856, I find it recorded as being 8 feet 6 inches high. When it was felled—having been injured by fire—a piece of the butt about 5 feet long, was put aside to season, and in September last was sawn up into three planks, each 3 inches thick by 9 inches in width; unfortunately, no measure of circumference was taken before this operation, but as the butt was squared for the convenience of the sawyers, 9 inches by no means represents its full diameter. Owing to the squaring, no more than twenty-two rings of growth can be counted. They show an annual regularity of thickness not usual in Conifers. I can find no ring much more than 4-16ths of an inch in thickness, and none less than 3-16ths. No special shrinkage of any ring marks the year of final planting out. From the 5th to the 9th inclusive, the rings are of the greater thickness. Nos. 10, 11, 12 smaller; from 13 to 22 inclusive, large again. According to this scale of growth, forty years should give a diameter of nearly 20 inches, but the first few years would not contribute much to bulk. As regards the character of the wood, I may say that it is not unlike good Deal, but from the absence of turpentine, or for some other reason, it is smoother to the touch than the ordinary Deals of commerce. In this respect, its texture is not unlike that of Redwood (Sequoia sempervirens). On testing a thin batten by breakage, it proved to be tough and strong for its size, but the fracture, when effected, was abrupt, and showed little longitudinal fibre. The wood is somewhat heavier than ordinary Deal. It might become useful timber, but its growth is slow, and it is doubtful whether it would thrive if closely planted for economic purposes. In Loudon's *Arboretum*, vol. iv., p. 2432, 2nd edit., there is a full description of Araucaria imbricata, and it is there stated that in 1780 its timber was selected for the repairs of a Spanish squadron lying in the Port of Talcaguana (Bay of Concepcion), Chile. An expert had been sent to examine the trees of this district, and his choice fell upon the Araucaria. Loudon quotes a description of the timber, which states that it is capable of being polished and worked with facility. The qualities of my specimen seem to correspond fairly with this description. I will venture to add a few lines for those who are interested in this remarkable Conifer. I possess some seventy trees, many of them from 30 to 35 feet in height. There are among the smaller ones, some raised from seed ripened on the older trees of this place. The largest specimen here is between 49 and 50 feet in height; its circumference at 3 feet from the ground is 6 feet 10 inches. It was planted in 1842, and has been carefully watched and tended from its youth. For the last five years it has not added more than 2 feet to its height, the increase of growth being rather in a lateral direction. It is healthy and symmetrical, and having outgrown its youthful stiffness, has become, if not a graceful, at least an imposing tree. Most of the Araucarias here have been planted on the old red sandstone, but there are many vigorous plants on the contiguous carboniferous limestone, thriving more especially where deep loam overlies the rock. They are not injured or affected by the prevailing westerly winds which sweep up the Severn valley, in fact many of the best specimens are growing upon exposed hill sides. The Araucaria is worthy of much respect, but during the period of its ungainly youth a little charity is required. The worst oppressors of this denizen of the Cordillera are those who plant it in the garden plots of minute suburban residences; sometimes, I regret to say, in a pot! *Ducie, Tortworth Court, Falfield, Gloucestershire, November 26.*

THE PHYLLOXERA.—Having had some experience in eradicating the Phylloxera, I read Mr. Grant's note on the subject with much interest. I think that all who have had to deal with this insect agree that the stamping-out system is the only safe one; but I am surprised that the pains taken by Mr. Grant were ineffectual. I have had no experience with the drowning-out methods adopted by Mr. Grant, but about the time that we were battling with the Phylloxera I remember that it was generally advocated. In the report from Her Majesty's Consul at Bordeaux it was spoken of as effectual [where the soil is sandy. Ed.], and I heard from the late Mr. Tillery, of Welbeck Abbey, saying that he had practised it with success upon pot Vines. Mr. Dunn, gardener at Dalkeith Palace, also wrote to the *Gardeners' Chronicle*, that drowning the pot would kill the insect, but, he added, it could not be applied with certainty to a Vine border; and this is confirmed by Mr. Grant's experience, for it would be difficult to submerge a Vine border more effectually than he appears to have done. It is twelve years since we uprooted the Vines here in five houses, and replanted them with young Vines, which at the present time are vigorous, and apparently perfectly free from Phylloxera. I described our mode of treatment in the *Gardeners' Chronicle* at the time, and will now repeat it. The old Vines and their roots were burned in early winter, and the soil of which the borders consisted cleared away to a distance; the bottom of the borders were then concreted, and the walls below the surface of the borders, which were penetrated by numerous roots upon which there were traces of the insect, were coated with cement, and all other walls about the borders were syringed with carbolic acid moderately diluted, and twice whitewashed afterwards, while the woodwork received two coats of paint; the new borders were then made, the new Vines being planted the following April. This method of ours was criticised at the time as being expensive and also unnecessary, and I have sometimes thought that these strictures were justified, but after reading Mr. Grant's article I feel satisfied this was a delusion. *T. Coomber, Hendre Gardens, Monmouth.*

THE CHRYSANTHEMUM.—This being the centenary year of the introduction of the Chrysanthemum into England, a word on the subject from its native place, Pekin, may not be out of place. It is not generally known that the Chinese grow the Chrysanthemum as a standard tree! especially for selling; they graft them on to a stalk of Artemisia. There is a species of Artemisia that grows wild, and covers the waste ground round Pekin; it springs from seed every year, and by the autumn attains to a tree 8 or 10 feet high, with a stem 1½ inch thick. The Chinese cut it down, and after drying it, use it as fuel; the small twigs and seeds are twisted into a rope, which is lighted and hung up in a room to smoulder for hours; the pungent smell of the smoke drives out the mosquitos. This plant, after being potted, is cut down to about 3 feet, and used as the stock, the twigs of Chrysanthemum are grafted round the top, and it quickly makes a fine tree; the flowers grow and open, and as the stock soon withers, the whole tree dies, and folks say, "Another ingenious fraud of the Chinamen." A favourite style of growing Chrysanthemums is in the shape of a fan, with eight or ten flowers in different parts of it. If the flowers are not grown on the plant, they are tied on, which also does for selling. The winters in Pekin are very cold, and last about four months, and, having no glass-houses, the Chinese gardeners do not have the chance of producing such a variety, or such fine flowers, as their European brethren; but in the case of Chrysanthemums, they have many curious and beautiful varieties. *Thos. Child, "Nature," November* 20, 1890.

KIEFFER AND OTHER PEARS.—I do not see any notice of the Kieffer Seedling Pear having been exhibited anywhere, so I send you the two first and only fruits I have had of it. They were grown on a small pyramid which I had as a maiden from Messrs. Transon, of Orleans, four years ago. They describe it as a cross between a Chinese and a European Pear, and ripening in October, but, probably, nearly a month must be allowed for difference of latitude. These fell into a net on October 31. They were then a pale green, but now seem to be changing colour for ripening. From the extreme dryness of the season here, from the early spring till the end of October, our fruit had ripened sooner than might have been expected from the coolness of the summer. As Kieffer Seedling has fruited in this very bad year, I suppose it must be taken as inclined to crop, as out of about 300 varieties in the same garden, from fifteen years' old down to maidens, not above twenty produced fruit. Of the older ones, Ruby, Doyenné Gris and Plantagenet on Quince had a crop. Of the remainder, Fertility was the most promising for quantity. I will not praise the quality. Triomphe de Vienne was good in quality and size. Beurré Montecat cropped well, and was of good size, and will be useful, though only second-rate. Two fruited under difficulties, Lahérard, a four-year-old, and Petite Marguerite, one of a dozen maidens. These two had come from Angers late in February, and had been twelve days on the road. My best crops were on Pears grafted on Thorn hedges, a graft of Fertility of 1888 having more than sixty fruits upon it. Bergamotte Esperen, Fondante de Noël, Mouseigneur Affré, and Millot de Nancy, grafted in 1882, had heavy crops, as they have had for the last four years. *J. H. Heyward, Crosswood, Welshpool.*

FROST IN MIDLANDS.—In reply to Mr. Woodford (see *Gardeners' Chronicle*, November 1), our minimum thermometer registered, on the morning of October 28, 29·5, or 2½° of frost. It is a properly-tested instrument, in regulation-box, 3 feet from the ground. *W. B. Latham, Botanical Gardens, Birmingham.*

A MONSTER CAMELLIA. — A double white-flowered Camellia in perfect health, bushy, and well-furnished to below the top of the large square box in which it is growing, and standing 18 feet high from the soil, 54 feet in circumference, and the base of the stem close to the ground measuring 27 inches in circumference, is not met with every day, and it is an open question if another so large a plant is to be found in Britain growing in a tub under glass. This plant is to be seen at The Henbury's, Moseley, near Birmingham, the residence of G. F. Lyndon, Esq., and has for years past been growing in a strongly-made box, 6 feet square and 3 feet in depth. This box is on a revolving frame, such as are in use for reversing railway engines, so that the plant can have the full light of the front of the conservatory when thought necessary. The conservatory, two sides of which are of glass, is almost filled by the Camellia, but in order to prevent its entirely filling the house close pruning is adopted every season, and five years ago quite 6 feet of top growth had to be cut away, the growth having reached to the top of the conservatory. This noble specimen has had upwards of 7000 bloom-buds picked off it recently, to allow the 5000 buds left to develop better. Blooms have been opening on this plant since the end of October, and will continue to do so until after Christmas. The flowers are of fine quality, the foliage of a deep green colour, and good, and the plant is a wonder to all who see it. It is never put out-of-doors, for the simple reason that it cannot be got out, unless the front of the house and a good part of the top were pulled down. The tree when watered is drenched, and it has copious feedings with manure-water when making its growth. Mr. Black, the gardener here, has had the tree under his care for some years, succeeding Mr. Stephen Craythorne, a well-known old gardener of the Midlands. Anyone wishing to see the tree would be welcomed by Mr. Black. *W. D.*

TROPÆOLUM SPECIOSUM.—I read with some interest the accounts of this creeper from the pen of Mr. Divers and others, but I am unable to throw any light on the subject as to whether the most suitable soil for it is that which is wholly deficient in calcareous matter or not; but what I wish here to point out is, that it will thrive very much further south than Mr. Divers supposes. At South Stoneham House, the residence of S. Montagu, Esq., M.P., there is one of the best shows of this fine creeper I have ever seen. The position it occupies is one side of the lawn-tennis ground, where it has a home among the shrubs, which it entirely covers, hanging in festoons from plant to plant. There can be no question about its being at home here, for it is the same beautiful sight each year, and to my knowledge it has been so for many years. The soil in this garden is, I think, comparatively free from lime. Mr. T. Hall, Mr. Montagu's gardener, would, no doubt, answer any questions in regard to the soil and treatment. *C. Warden, Clarendon Park, Salisbury.*

CELOSIA PYRAMIDALIS PLUMOSA.—I send you a small plant of the above, which was raised from seed sown in June last in moderate heat, and grown on in an intermediate-house. The plant, which is in a large 60-pot, has been, with many others in 48's, in flower since the end of September. In order to get larger specimens, the seed should be sown in March, and the plants grown on, so that specimens from 3 to 4 feet high, and of pyramidal form, without stopping the shoots, and in soil such as is used for Pelargoniums. The Celosia is a plant of very easy cultivation—very much more so than the treatment given to the Cockscomb family generally—and as a decorative plant it is invaluable; so very rich in the bright crimson colour, and so long in flower—quite up to Christmas, with plants from seed sown from April to June, and excellent for cutting. Mr. Parker, of Impney, remarked at the Birmingham Chrysanthemum show, that these Celosias were invaluable to him for conservatory, room, or church decoration, and that they had a very gay appearance amongst the host of whites and lighter-coloured flowers in bloom at this time of the year. *D. S. H.* [The plant sent was a pretty object, 20 inches high, beautifully in flower, the colour a rich crimson. Such plants are excellent for *jardinières*, window-baskets, and boxes inside the dwelling, and for dinner-table decorations in company with plants having green or grey foliage and pendent habit. Ed.]

NATIONAL CHRYSANTHEMUM SOCIETY. — I think the Hon. Secretary to the above Society did not give Mr. Wood's letter (p. 567) the serious consideration it deserved. No doubt the Aquarium draws a large number of people, but should not the National Chrysanthemum Society look upon their exhibition in a different manner to the ordinary observer, the attractions of the entertainment notwithstanding? I fear Mr. Dean did not find time to read your leading notes on this exhibition (p. 567), in which you state the Aquarium to be the worst place in which to hold a flower show, owing to the glare and incessant noise. Another leading journal complains of the bad light, the great amount of noise, and the smell of tobacco smoke which filled the place. I certainly do agree with every one of these notes of complaint, especially the last, for it was not pleasant when examining a bloom to get one's nostrils filled with smoke. I do not see how the National Chrysanthemum Society can ever expect to get ladies of rank to patronise the Royal Aquarium whilst there exist these disagreeable features. I do not suppose that the patrons whose names the Secretary gives attended in the evening. I think Mr. Wood's letter a most sensible one, for he not only complains, but at once offers to help to provide a remedy. I well know the difficulty of finding a suitable hall for the purposes of exhibition, but it can be done if the National Chrysanthemum Society cares to do it; but my fear is, they do not care, judging by the way they have met Mr. Wood's offer. I have an idea that the National Chrysanthemum Society should be able to provide for its exhibitions without the assistance the Society gets from the Aquarium Company; if not, then the Society should organise their exhibitions on a reduced scale, till they are able to support themselves. *Exhibitor.*

—— I quite agree with Mr. Wood's remarks on p. 567, for November 15. I paid a visit to the Aquarium for the first time on November 11, and was highly pleased to find such a grand show of Chrysanthemums and vegetables; but I had no idea until then that the shows were held in a place full of tobacco-smoke, with noisy shouting at intervals approaching to what might be expected at a race-meeting, with the additional drawback of being confined in a building; the flowers were covered with dust and blacks after being there a short time, although that was not noticed in the murky atmosphere. I do not wish to blame the managers of the Aquarium for this state of things—if they find it suits their patrons, they have a right to allow it; and my objection to the Aquarium as a place in which the National Chrysanthemum shows are held is based on the above disadvantages I have pointed out, other objections being put aside. That Mr. Wood and others have done good service in calling attention to the matter is perfectly true, and probably the noble ladies and gentlemen mentioned by Mr. Dean, who so kindly patronised and assisted at the opening of the show, were quite unaware of the conditions under which it was held, and had they known them they would probably have given the same amount of assistance, not because they approved of the Aquarium as a place for the exhibition, but from the love they have for the Chrysanthemum; and the same holds good with at least some of the exhibitors and others who went to see the show. It is doubtless very kind of the Royal Aquarium Company to support the show as Mr. Dean says they do; but I rather doubt if they do so solely from their love of horticulture. It seems more like the old

tale of throwing a sprat to catch a mackerel, and if that is the case the show would most likely pay its way if held under happier conditions for the flowers, and for those who admire them and like to see them to the best advantage. If no more suitable place can be found, could not the smoking and touting for the minor shows in the building be stopped during flower shows, and a string band substituted for the one lately in use. This, if carried out, would improve matters considerably, and put no one to any serious disadvantage. *W. H. Divers, Kelson Hall Gardens, Stamford.*

THE WINTER TREATMENT OF STRAWBERRIES.—How often it is, especially in the gardens of amateurs, that one sees Strawberries almost, if not entirely, denuded of their leaves at this season, which is, perhaps, done with a view to tidiness, but it is the worst possible thing that can happen for the plants, as the foliage is their natural winter protection, and when bereft of it, they are quite unable to withstand the hard frost without suffering some injury to the exposed hearts and crowns. Instead, then, of cutting the leaves off and stripping the plants, they should be left intact, that is, if they have had the proper trimming in the removal of runners, and all that needs doing is to clean between the rows, and give a top-dressing, using either any light, rich, leafy soil or rotten manure, or the two combined, according to the nature and texture of the land the beds are made on. This treatment of Strawberries will be found to benefit them greatly, as they, like most perennials, have a tendency to grow themselves out of the ground, as it were, by the way their stems elongate and push up or creep along, and if they can get fresh mould, or become partly or wholly buried, they emit new roots, which greatly add to the strength and health of the plants. Not only do we find people clearing off and removing every vestige of leaf from their Strawberries, but it is quite a common thing to see another error perpetrated, and that is the digging between the rows, which is barbarous in the extreme, as all main roots are cut through or broken, and the plants so disturbed and loosened, that they never fully recover, and always look weak in the spring. *J. Sheppard.*

POT STRAWBERRIES AT SYON.—Opinions vary appreciably amongst growers of Strawberry plants for forcing as to the appearance they should present in the late autumn. When the plants have luxuriant leafage, the remark is made, "What a splendid lot of plants." When, on the other hand, coarse leafage is absent, and the crown foliage is dense and compact, the remark then is, "What plump crowns the plants have." Some seem to prefer one appearance, some another. Now, at Syon, where Mr. Wythes has about 5000 plants in 6-inch pots, all well established, the general aspect is of the latter order, very plump crowns, short compact leafage, and pots full of roots. These are conditions which struck me as being peculiarly satisfactory, and affords the gardener entire satisfaction. It is the rule at Syon to bank the plants for the winter, with the exception of those required for the earliest forcing. Those are housed about the beginning of December in frames, whilst the main crop plants are stacked with ashes, back to back, being laid on their sides. The plan is at once economical and safe, for pots neither crack, or will become waterlogged. In one batch, that of Auguste Nicaise, are a few score of plants layered direct into the fruiting-pots by way of experiment, but the results are far less satisfactory than is the case where layered, as is the rule, into small pots. If the latter course gives rather more trouble, the result is by far the most satisfactory. Whilst amongst those to be earliest forced come King of the Earlies, the fruits of which are so small; there is beside them a small batch of the new American variety, Crescent Seedling, for similar use. The value of the variety for the purpose has to be tested. Very marked, however, is the short green leafage, which shows brighter hue, and wears a fresher aspect than does any other variety. It would be inferred that, being late in resting, the crown would be late in starting. That, however, has to be proved. To the two kinds named above, follow on Keen's Seedling, still such a favourite for pot work; and Vicomtesse Héricart de Thury, which is perhaps the most popular of all for early forcing; then came President, of which some 1500 are grown, as it is the favourite for the main crop. The stock of this variety is of the finest character, all the plants being so stout-crowned and so even. Sir Joseph Paxton follows, a first-class kind, inside or out; and later come British Queen and Waterloo, the latter to be tried in pots for the first time next spring. It is strongly recommended for late pot work by that excellent gardener, Mr. Smith, of Mentmore, who does Strawberries both largely and well. The very latest kinds are really not forced at all, but are allowed to ripen their fruit naturally, without fire-heat. It is noticeable that the new variety, Noble, does not figure in the Syon pot Strawberries. The fact is, it is too soft and flavourless to satisfy the more exacting requirements of the Duke of Northumberland's table. However, it may please the rich worshipper of bulk and of colour. *A. D.*

LATE CAULIFLOWER AND EARLY BROCCOLI.—Taken on the whole, this has been a very favourable autumn for late Cauliflower and early Broccoli, for excepting the one sharp frost that occurred in October, we have had none of any severity since, but the weather has been mild and open, just suiting the two kinds of vegetables above; the first turning in with magnificent heads, and the latter will be quickly forming heads, and standing in need of close attention. I find that by far the finest Cauliflower for late work is Veitch's strain of Autumn Giant, for not only is it large, close and white in the curd, but the plants turn in slowly, and maintain therefore a long succession of good heads. The summer kinds behave quite differently in that respect, and the only time they can be pronounced really good is in June and July, after which they come on with a rush and soon open and become loose in flower. This is always the case with them in the autumn, and therefore I only grow a very few of them for that season, but depend chiefly on Veitch's, which usually stand us in good stead till Christmas and after. To make sure of them at the time mentioned, it is always advisable to take up and lay in a portion of the stock, putting the plants either in cold pits or frames, or on some narrow border under a low wall or fence, or other sunny sheltered position where they can be easily protected, either by throwing a few mats over them or light clean straw, which may be made to rest on rods or rails, to keep the weight off the leaves. If in frames, they may be easily protected, but I like them better outdoors, the plants keeping better, there being less damping off and rotting of the bottom leaves and stems. Any that are wanted for first use will be found to do exceedingly well in a lean-to shed, if laid-in in moist soil, and I have had them good for weeks in such places. The best way to treat early Broccoli is to have them outdoors—at least, it is quite necessary to do so till they form heads; but as soon as they begin to turn in, I like to have them altogether on a warm border, where they can be easily and quickly covered, and thus kept out of harm's way. In taking the plants up and removing them, care should be exercised so as to lift them with good balls and roots, that they may be transferred with as little check as possible, as then they will hardly feel the removal, and the heads will come nearly their ordinary size. The best for early winter use is Snow's, but it is a difficult matter now to get it true; and the most useful before Snow's is Veitch's Giant, which, judging from general appearance, is a late form of their well-known Cauliflower. *J. S.*

LILIES AT WEYBRIDGE.—I send a short note on our Lilies of the past season. The spring was very fine, followed by a frost in the beginning of June, a long spell of cold wet weather, and a beautiful autumn. Lilium auratum were very good, some leaves and flowers were spotted during the wet time, but the later flowers were especially fine; the variety, rubro-vittatum, sometimes erroneously called cruentum, in rather a cold quarter at Wisley, had the leaves much spotted, and I thought the flowers would suffer, and began to fear that this variety could not always be trusted out-of-doors. On visiting my friend, Mr. McIntosh's, garden, I found these Lilies as beautiful as ever, so was comforted, and soon afterwards ours bloomed with quite fine flowers. In the garden here, where we have few places for planting free from the roots of trees and shrubs, I am more than ever convinced of the desirability of securing against the drying and impoverishing effects of these by sinking casks with the bottoms out a little below the surface of the ground, filling them up with Lily soil, and planting the bulbs in them. We have some good evidence of the advantage of this in two casks side by side, which started with bulbs of L. A. macranthum of the same size. The plants in the one which have been protected against roots for two years are much stronger and finer than those in the other cask, which suffered one year from tree-roots before they had the benefit of a cask. We had a number of L. A. rubro-vittatum in pots in the conservatory. These had grand flowers, though, as in the case of out-of-door plants, the fine crimson colour before many days turns to the dull claret. L. speciosum in the different varieties were a good deal cut in the early season, but were especially fine later. Our finest were in a sunk cask in this garden, where they were in full beauty till quite the end of October. Others were nearly as fine in a new and perfectly different situation, planted on a miniature mountain of loam. These planted, some about 8, others 10 feet high, facing east in full exposure, showed no spot on their leaves, and had very fine flowers. L. giganteum made a great show; a bed of seedlings had twenty-three stems, all about the same height, between 7 and 8 feet; others planted with trees as a background had a very good effect. L. cordifolium in a shaded part of the wood flowered well, but the colour was not so good as when in more open places. L. superbum is always thoroughly happy at Oakwood, and gets finer and finer every year. Our tallest plant was 10 feet 4 inches; but plants of all heights flower with much variety in the colouring. I have this year tried an experiment with these Lilies, of which, with your permission, I will report the result hereafter, planting single bulbs at intervals, in the shallow winding ditches by which our wood garden is drained; if these thrive, as I think they will, the effect should be good. L. Browni were fine, but not equal to last year; I do not think they liked the early cold. L. pardalinum, L. californicum, and some L. Humboldti were very good, but some of these latter went off. I have nothing worthy of a note as to the other species of Lilies. Since I began to write, I have heard of the death of my old and valued friend, Mr. McIntosh, of Duncevan; he was for a considerable time the most successful cultivator of L. auratum in this country. The Lilies grown among his choice Rhododendrons were models of cultivation, and proved that under favourable circumstances the bulbs would continue to flower for many years without any falling off in vigour. *George F. Wilson.*

ACCLIMATISATION.—Mr. W. Gollan, in his very interesting communication on the subject of Acclimatisation in India, at page 498, quotes the Rev. Canon Ellacombe's assertion in your issue of August 2nd, viz., that the zonal and Ivy-leaved Pelargoniums may be considered as examples of plants which have for long been cultivated in this country, but which are not now hardier than when first introduced. Mr. Gollan admits this assertion to be quite correct, but at the same time he questions if they have ever been grown during this long period, or from about the year 1710, with a view to their increased hardiness. Mr. Gollan is evidently under the impression that no efforts on the part of the raisers from seeds of new varieties of these plants, have been made to induce, and to secure, increased hardiness. This, I think, I can assure him is far from being the case, as I happen to know that it has been a special object on the part of more than one successful raiser of new and improved varieties of these plants, to secure this desideratum, although hitherto without success. For although it has been found that in large plantations of seedlings the greatest diversity of blooms, habit of growth, and more or less vigorous development may be found, still the depression of temperature which proves fatal to the more weakly varieties proves fatal to all, or the strong as well as the weak, unless something in the form of shelter or protection is afforded to any favoured portion of the plants. So that I have very little, if any, faith in the probability of securing a hardy race of these plants by merely following the suggestion thrown out, viz., the saving of seeds from generation to generation, from the strongest growing, or most robust varieties, when a sharp frost will, at any time, prove them all to be equally tender. If a more hardy race of these, or other tender plants, is ever to be obtained, it will be more likely to be effected by hybridity, or the introduction of the hardy element in the form of pollen from hardy, but more or less closely-allied species, and this does not appear by any means impossible, the species in question, viz., the zonal and Ivy-leaved Pelargoniums, are natives of the Cape of Good Hope, and are, consequently, tender; but they are closely allied to the hardy races of Geraniums, Erodiums, &c., which are indigenous to Europe, some of them to Britain, and are, consequently, perfectly hardy. The inflorescence, pericarp, or seed-vessel, as well as the pollen-grains of the tender and the hardy species,

are very much alike, and if a union has not yet been effected, it is, nevertheless, possible that it may at some time be secured. An account of such plants as the Aucuba japonica would be of interest; which, when first introduced to this country, was treated as a tender or greenhouse plant, but is now found to be as hardy as the common Laurel [hardier]. In some instances the idea prevails that, in the course of cultivation in this country, this plant has gradually increased in hardiness; and some others find it difficult to believe that the Aucuba, when first introduced, was just as hardy as it is now, although cultivators were not aware of the fact. *P. G.*

SOCIETIES.

CHRYSANTHEMUM SHOW AT READING.

The seventh annual exhibition of the Reading Chrysanthemum Society was held on Thursday, November 13, in the large and small Town Halls. It is true that the entries were rather less in number than last year although this is the Centenary of the introduction of the plant into England; but this is easily to be explained by the fact that so many important shows—the Aquarium, Croydon, Oxford, and others were held on Wednesday, the "professional exhibitors" being consequently few at Reading. The main display was confined to the smaller hall, the larger hall being devoted more to the purpose of a musical promenade.

The most important class, that for collections of thirty plants grown in pots, to occupy 50 square feet, was the best filled in the show, there being no less than eight entries; and the quality throughout was so high that had it been possible to allow a little more space to each group, the effect would have excelled that of similar groups at any show this year. Mr. Berkeley Monck's gardener (Mr. Booker) set up a splendid lot of plants, dwarf and well grown, while the development and finish of the flowers left nothing to be desired. This exhibit was pressed very closely for premier honours by the group sent by Mr. W. W. Cowslade (gr., Mr. Hawkins), who also showed level and well-grown plants, including many Japanese and Incurved novelties, and the golden Sunflower. The gardeners of Mr. Monck and Mr. Cowslade are to be congratulated on having beaten so formidable an opponent as the Right Hon. W. H. Smith, M.P., whose gardener (Mr. Perkins), took 1st prize last year, but at this show had to be content with 3rd honours, although he set up a splendid display. The individual blooms were larger, but the quality was not so good, and the plants were a trifle too tall and not well foliaged.

Prizes were offered for six dwarf table or window Chrysanthemums, and in response many capital plants, admirably adapted for the purpose, were entered. The shield-shaped standards, however, were numerous, of high excellence, and—all the flowers being trained to face the spectator—they produced a most striking effect. Single standards did not make a good show.

Cut Blooms were well represented in each class. Sir G. Stepney, Sunninghill (gr., Mr. Popple), carried off the much-coveted chief prize for eighteen incurved distinct blooms.

A finer lot has not been seen anywhere this season than the twelve incurved blooms (Japanese excluded) with which Mr. Allen, gr. to Sir George Russell, Bart., M.P., secured premier honours.

In the class for twelve reflexed, the awards made were equal firsts to Mr. Allen and Mr. Popple respectively.

The show of cut Japanese blooms was indeed a splendid one, but many of the exhibits were disqualified on account of the incurved being mixed up with the reflexed varieties; the judges, very properly, in giving their decisions, following the catalogue of the National Chrysanthemum Society. The Right Hon. W. H. Smith took the chief prize for twelve Japanese incurved—six or more distinct, with large and well-formed flowers; and the competition was also very strong in the class for twelve Japanese reflexed, where Mr. Turton, gr. to Mr. J. Hargreaves, scored with a grand lot of blooms, remarkable for size, colour, and symmetry. After these immense blooms, the Japanese Anemone-flowered class seemed flat, but the two boxes staged of these choice little blooms were much admired by fanciers.

As to the fruit, we may say that the Grapes shown were very fine in quality, but not up to the quality seen last year. Other fruits were good, especially Apples.

Among the articles shown, not for competition, were a collection of Sunflower Chrysanthemums, and a grand lot of cut blooms from Sir George Russell, Bart.; 25 dishes of Apples from Mr. Wells, gr. to Mrs. Ravenhill, of Winkfield; and a table filled by Mr. George Phippen, Reading, with choice plants, wreaths, &c.

SALISBURY.

November 18 and 19.—The exhibition of Chrysanthemums, &c., held in the County Hall, was very successful. Three years ago, four cups were offered for competition, all to be taken three years in succession before being finally won. The trophies, having been won during the two previous shows by the same exhibitors, great interest was evinced as to the chance of their changing hands, which, however, has been the case in one instance only.

Four excellent groups were arranged in competition for the ten-guinea Challenge Cup, Mr. Frank Pearce, High Street, Salisbury, being a good 1st; Mr. Brown, Portland House, Salisbury (who had won the trophy the two previous years), being 2nd.

In the amateurs' class, Mr. Charles Haskins, Poultry Cross, Salisbury, won the Challenge Cup for the third time, with capital exhibits. Dr. Coates, St. John Street, Salisbury, was easily 1st for a group of miscellaneous plants.

Three stands of twenty-four blooms were staged in competition for a ten-guinea Cup, Mr. H. W. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, leading. Mr. Chalonder, Winchester, secured his Cup in the amateur class for the third time.

Mr. Batten, Basingstoke, had the best stand of Japanese blooms in the amateur class. Mr. Neville, gr. to Mr. Flight, Twyford, Winchester, had the best dozen incurved; and for a like number of Japanese, Mr. Robinson, gr. to Sir Massey Lopes, Westbury, led. Mr. Neville was 1st for twelve reflexed.

Fruit was well shown.

YEOVIL.

November 19.—This very successful show of Chrysanthemums, fruits, flowers, and vegetables, was held in the Town Hall. Several good groups of Chrysanthemums were arranged in competition for the three-guinea Cup. Mr. A. Crossman, gr. to J. Brutton, Esq., Yeovil, led with a grand group, the plants being in pots of 8 inches to 3 inches diameter. Mr. Gillam, gr. to J. S. Cable, Esq., Yeovil, was 2nd. Mr. F. Biss, gr. to Jabez Bradford, Esq., Yeovil, was 1st for an effectively arranged group of miscellaneous plants.

Trained plants of Chrysanthemums were well shown by Mr. A. Crossman (who took five 1st prizes with admirably-grown plants), Mr. J. Allen, gr. to the Rev. W. L. Cotles, West Coker; and Mr. Anthony.

Cut blooms were numerous, and were of good quality generally. Several good stands of twenty-four blooms (twelve incurved and twelve Japanese), were staged in competition for the three-guinea Cup. Mr. Copp, gr. to W. E. S. E. Drax, Esq., Holnest, Sherborne, was a capital 1st, staging grand blooms. Mr. A. Crossman was 2nd, the Rev. N. C. Hankey, Maiden Newton, 3rd. Mr. Gillam had the best stand of twelve Japanese, and Mr. Copp the best reflexed, both showing substantial fresh even blooms.

Fruit made a good display. Two collections of six dishes were staged by Messrs. Lloyd and Crossman, who took the prizes in that order. Mr. G. Daley, gr. to Colonel McGregor Mapperton, had the best two bunches of Black Alicante; and Mr. Lloyd the best any other black in Gros Colmar, both staging well-coloured bunches.

Mr. Connolly, gr. to J. R. C. Talbot, Esq., Rhode Uplynne, Lyme Regis, Dorset, was a long way ahead of other exhibitors in the class for two bunches of Muscats. Such fine examples of good cultivation as these were, should be sent up to one of the Royal Horticultural Society's meetings.

Mr. Daley was 1st in the class for any other white Grape, with creditable bunches of Foster's Seedling.

Pears and Apples made a very good show in themselves.

Several excellent collections of ten kinds of vegetables were staged; Mr. Crossman and Mr. Bowers were 1st and 2nd; the same exhibitors occupying a like position in the class for collections of salading.

Non-competing exhibits came from Messrs. Scott & Co., Merriott, and Messrs. Jarman & Co., Chard, who staged respectively between fifty and sixty dishes of Apples.

HULL CHRYSANTHEMUM SHOW.

The Hull and East Riding Chrysanthemum Society held its seventh annual show in the Hull Artillery Barracks on Wednesday and Thursday, November 19 and 20, when, both in the quality and number of the exhibits, all previous efforts were excelled. A special feature was the exhibition of the gigantic L'Etoile de Lyon. In the central hall there were seven groups, arranged for effect, in 100 feet of space, the exhibitors being Messrs. B. Whittaker, of Hessle; Councillor Wheatley, of Hull; Mr. James Reckitt, of Swanland Manor; Mr. D. Wilson, of Cottingham; Mr. R. F. Jameson (Chairman of the Society); Mr. D. Cottam, Jun., of Cottingham; and Mr. C. Alcock, of South Cave. Messrs. Dixon & Sons, of Hull, also showed a splendid group of foliage plants and grasses.

Hull's former weakness in respect to specimen plants in pots is being rapidly wiped out—a remarkable improvement in this respect being this year noticed.

The ladies' classes occupied the gymnasium, and were well patronised, there being seventy entries in the six classes. Eight dessert tables contested the coveted challenge prize, which was taken by Miss Ethel Ayre. Miss Hodgkins, of Manchester, exhibited a splendid collection of skeleton leaves and Ferns; and Mrs. Snout, of Hastings, displayed a great novelty in a table decorated as for a fish dinner, shell plates and seaweeds being much employed.

In addition to local exhibitors, plants and blooms were received from the Duke of Sutherland, Colonel Wingfield, of Shrewsbury; Mr. H. G. Schinty, of Liverpool; Mr. W. O. Harding, of Darlington; Mr. F. H. Anthony, of Leicester; and Mr. Arthur Wilson, of Tranby Croft. Altogether it was a splendid show, and worthy of the Society.

The following is the prize list:—

Open and District Classes.

Cut Blooms.—Forty-eight blooms, twenty-four incurved, in not less than eighteen varieties; twenty-four Japanese, in not less than eighteen varieties.—1st, and Challenge Cup, Duke of Sutherland, Trentham; 2nd, Colonel Wingfield, Shrewsbury.

Twenty-four blooms, twelve incurved, twelve Japanese, in not less than nine varieties of each, and not more than two of one variety.—1st, and Silver Cup, Duke of Sutherland; 2nd, A. Wilson.

Twelve blooms, incurved, distinct.—1st, W. R. King, Ferriby; 2nd, H. G. Schinty.

Twelve blooms, Japanese, distinct.—1st, W. R. King; 2nd, G. A. Carr, Grimsby.

Twelve blooms, large Anemone, or Japanese Anemone, in not less than nine varieties.—1st, Duke of Sutherland; 2nd, G. E. Smith, Paull.

Twelve blooms, reflexed, in not less than six varieties.—1st, Colonel Clitherow, Brough; 2nd, F. W. Jameson, Eastella.

Six blooms, Japanese, Mrs. Falconer Jameson.—1st, J. Browsho, Beverley.

Six blooms, Japanese, Mrs. Alpheus Hardy.—1st, Duke of Sutherland.

Twelve blooms, sweet-scented, in not less than three varieties.—1st, Mr. G. E. Smith.

Twelve bunches Pompons, or Anemone Pompons, with foliage as grown, not less than six varieties.—1st, Mrs. Ross, Elloughton Lodge, Brough; 2nd, G. E. Smith.

Twelve bunches, singles, with foliage as grown, and in not less than six varieties.—1st, G. E. Smith; 2nd, H. Harland.

Twenty-four sprays of Chrysanthemums, any variety, for decorative purposes.—1st, G. E. Smith.

Plants in Pots.—Groups of Chrysanthemums, interspersed with foliage plants, arranged for effect, in a space of 100 square feet.—1st and Challenge Cup, J. Reckitt, Swanland Manor; 2nd, D. Wilson, Cottingham; 3rd, Councillor Wheatley, Hull; 4th, B. Whittaker, Hessle.

Chrysanthemums, distinct variety, bush-grown, but not formally trained, each plant on a single stem.—1st, E. Leetham, Newland; 2nd, T. Smith, Beverley.

Amateur Classes.

Twelve blooms, any variety: 1st, W. Howell, Hessle.

Plants in Pots.—Six Chrysanthemums, any variety: 1st, R. Thirsk; 2nd, R. Petch, Hull.

CARDIFF.

November 18 and 19.—The exhibition was held in the Park Hall, an excellent place for a show, as it has plenty of light. Cut blooms formed the most important feature, although groups were strong. Specimen plants were a long way below the average, the plants having been allowed to grow excessively tall, and too many sticks showing.

For twenty-four distinct blooms, five competed. The best came from Mr. J. Horne, gr. to J. T. Masters, Esq., Cardiff, a medium-sized even lot, half incurved and the remainder Japanese; 2nd, Mr. F. Case, who staged mainly Japanese varieties. For twelve incurved distinct, Mr. N. Ryder, gr. to H. W. Thompson, Esq., Cardiff, led the way with medium-sized even blooms. For the same number of Japanese, Mr. Horne was placed 1st with large and fresh blooms.

Amateurs and cottagers made a good show. Groups of Chrysanthemums to occupy a space of 60 square feet were staged by five competitors, the best coming from Mr. F. Case.

Specimen Chrysanthemums were best shown by Mr. H. W. Thompson. In the class for one incurved or reflexed, Mr. G. Hawkins, gr. to Col. Luberville, Cardiff, staged a capital specimen of Golden Christine, which had sixty fully-developed blooms—a grand plant. The last-named exhibitor also had the best Japanese specimen in Madame de Sevin.

Fruit made a good display, the best coming from Messrs. S. T. Wright, Case, and Hawkins; while for vegetables, Mr. Moore, gr. to G. M. Treherne, Esq., was the leading exhibitor.

SWANSEA.

November 19 and 20.—This was the first exhibition of Chrysanthemums and fruit by the Swansea and District Horticultural Society, and took place in the Drill Hall. Specimen plants were very satisfactory, being dwarf, neatly trained, and well flowered. Groups were numerous and good. Vegetables were a leading feature, being staged in large numbers.

In the cut bloom classes, competition was keen all through. The principal class was that of forty-eight distinct, half to be incurved, and half Japanese; the 1st prize of £8 was well won by Mr. Ireland, gr. to Sir Hussey Vivian, Singleton, Swansea. Other classes were well filled with blooms of even quality. Space forbids the names of winners being given. Messrs. Clibran, Altrincham, staged four dozen blooms of leading new and old varieties of Chrysanthemums, not for competition. Mr. T. Barron, florist, Swansea, had a neat lot of freely-flowered dwarf plants of Chrysanthemums, and also wreaths and bouquets; and Messrs. W. Wood & Sons, Wood Green, London, had a display of horticultural sundries.

BRISTOL.

November 19 and 20.—The twenty-seventh exhibition of the Bristol Chrysanthemum Society was held in the Colston Hall. Cut blooms were especially meritorious, the principal class in this section being for forty-eight. There were four competitors, Mr. C. Cooper, gr. to C. L. Collard, Esq., Taunton, being 1st, with capital blooms, Japanese especially; Mr. J. Aplin, gr. to W. M. Baker, Esq., Gloucester, was 2nd, and also led for twenty-four incurved, with neat blooms of fair size.

For twenty-four Japanese blooms, Mr. Cooper was 1st, with excellent blooms in every respect. Mr. Cooper was also 1st in the class for twelve Anemone varieties, the blooms being well developed, and he was the only exhibitor of twelve reflexed blooms. Mr. Aplin was 1st for a single bloom of Mrs. Alpheus Hardy, with one of the best yet seen.

Groups were not numerous, nor of high quality generally; but that from Mr. G. Marshall, gr. to J. Dole, Esq., Bristol, was decidedly in advance of any other. Poinsettias for table decoration trained low, so that the flower-heads are not more than 6 inches from the top of the pot, are an especial feature at the Bristol show; this year was no exception, Mr. Cave having excellent examples.

For a collection of six dishes of fruit, Mr. Nash, gr. to the Duke of Beaufort, won 1st honours, with capital Grapes, Pears, and a Melon; Mr. G. Pymm, gr. to Mrs. Gouldsmith, being 2nd.

For two bunches of Black Hamburgh Grapes, Mr. Cave was 1st, with well-preserved specimens; and again for two bunches of White Muscat.

In a special class for Alicantes, Mr. Goddard, gr. to R. Cripps, Esq., was 1st; for Lady Downes, Mr. J. Gibson, gr. to Earl Cowley, Draycott Park, Chippenham, led. Mr. Nash was easily 1st for two bunches of Gros Colmar. In the class for two bunches of Mrs. Pince, Mr. G. Pragnell, gr. to J. K. D. Wingfield Digby, Esq., Sherborne Castle, Dorset, was easily 1st, with splendid examples. For two bunches of any other black variety, Mr. Nash led, with Alnwick Seedling; and in a similar class for any white variety, Mr. J. F. Wilkinson was 1st, with Trebbiana.

Pears were a fine display, being numerous and good. For six varieties, Mr. H. Banister, gr. to H. St. V. Ames, Esq., led easily, and he again led for six varieties of dessert Apples.

For ten distinct varieties of vegetables, Mr. Banister led.

Messrs. Garraway & Company staged, not for competition, 100 dishes of Apples, making an attractive display.

ANCIENT SOCIETY OF YORK FLORISTS.

November 19, 20, and 21.—The Chrysanthemum show, held by this Society, was arranged in the spacious exhibition building, affording ample scope for a good display, which, was itself, one of the best ever held in York. Groups were arranged both in circles and semi-circles, the former affording a pleasing change from the usual style. In this class Mr. McIntosh, gr. to J. Kingston, Esq., York, arranged a superior group, and took 1st prize. That in the other class going to Mr. Everard, gr. to Mrs. Gutch, Holgate Lodge The latter also took 1st for four incurved specimens, two Japanese specimens, with plants freely-flowered. Mr. Smith, Norwood nursery, Beverley, being 1st for four Japanese, and four Pompons, with plants in full bloom. Mr. Vear, gr. to Miss Steward, was 1st in the reflexed classes, with large plants.. Other classes, like the foregoing, were well filled.

In the large class for thirty-six cut blooms, equal numbers of incurved and Japanese, Mr. Folkard, gr. to Sir James Walker, Bart., took 1st, with very superior blooms; Mr. Goodacre, Elvaston Castle Gardens, coming in 2nd. Eleven other competitors entered in this class.

For twenty-four, equal numbers of each, as before, Mr. Folkard was again 1st in a keen race for the premier position; Mr. G. Anderson, gr. to A. Milnthorpe, Esq., Tower Hill, Cattal, 2nd.

For twelve incurved, Mr. Folkard was once more 1st; with the same number of Japanese, Mr. Short, gr. to A. Pease, Esq., Darlington, won, with very fine blooms. Anemone-flowered varieties were best shown by Mr. Midgley, gr. to H. Mason, Esq., Bingley; and recurved ones by Mr. Short. Avalanche was 1st in the class for one kind only of Japanese, being staged by Mr. Finlay, gr. to Mrs. Proud, Darlington.

Mr. Letts, gr. to the Earl of Zetland, was a very good 1st for mixed cut flowers, Orchids being his strong feature.

Mr. Letts also succeeded in beating Mr. Goodacre for six bunches of Grapes in three kinds, with fine samples of Barbarossa, Alicante, and Muscats, all well finished. Mr. Dawes put up two fine bunches of Barbarossa, and won 1st for any black kind; Mr. J. Lee, gr. to Sir J. Cowell, Bart., Bedale, being 2nd with Gros Colmar.

Pears were best from Mr. Cuckney, gr. to Sir J. Musgrave, Bart., Eden Hall, Cumberland, and Mr. Hare, gr. to R. Neville, Esq., Grantham.

A fine collection of nearly eighty dishes of Apples was staged by Messrs. J. Backhouse & Son, York, not for competition; and another lot of finely-coloured fruit came from Mr. Watkins, Hereford.

In a special class for not more than fifty dishes of Apples, north of the Trent, Mr. W. Hutchinson, Kirby Moorside, York, was awarded the 1st prize.

Several classes for vegetables were well filled. Special prizes, offered by Messrs. Sutton & Sons, Reading, were closely contested, Mr. Whitehead, Malton, taking the 1st. Mr. Riddell, gr., Castle Howard, was 1st for Tomatos.

NATIONAL CHRYSANTHEMUM.

November 24.—A meeting of the Committee was held at Anderton's Hotel, Fleet Street, E.C., on the above date, Mr. R. Ballantine presiding; there being a large attendance of members. The representatives of several affiliated societies were present, including Mr. Robert Hislop, delegate from the Wellington Horticultural Society, New Zealand. A letter was read from Mrs. Marion Thrower, delegate from the Northern Horticultural Society, Launceston, Tasmania, who is shortly leaving England, acknowledging and thanking the Committee for the great attention and kindness she received at their hands during her sojourn in this country.

Several special awards of cash and medals recommended by the judges at the Centenary Show were unanimously agreed to.

After some discussion, it was resolved that the early exhibition of Chrysanthemums take place on Wednesday and Thursday in the second week in September; the November exhibition on Tuesday and Wednesday in the second week of that month in 1891; and the mid-winter exhibition on Wednesday and Thursday in the second week in January, 1892; that the exhibitions take place, as usual, in the Royal Aquarium, Westminster.

The Hobart Town Horticultural Society, Tasmania; the Campbell Town Institute and Horticultural Society, Campbell Town, Tasmania; the Sittingbourne and Milton Gardeners' and Amateurs' Improvement Association; and the Caterham and District Chrysanthemum Society, were admitted to affiliation. Twenty-five new members were elected, including five Fellows. A vote of thanks to the Chairman closed the proceedings.

November 25.—A meeting of the Floral Committee took place at the Royal Aquarium on the above date, Mr. R. Ballantine in the chair. A large number of fine flowers were staged, much more than could be expected at this season of the year. First-class Certificates were awarded to a singularly bold and striking single Japanese variety named Sunset, with long, broadish florets, red and yellow in colour—a bold and showy variety occasionally semi-double, from Mr. C. E. Shea, The Elms, Foots Cray, Kent. A first class certificate was awarded to Beauty, of Castle Hill, shown by Mr. R. Owen, Castle Hill Nursery, Maidenhead. The same award was made to Japanese Beauty of Castlewood, shown in very fine form by Mr. C. Cox, gr. to John Trotter, Esq., Hertford; and Mr. E. Beckett, The Gardens, Aldenham House, Elstree. This is a fine variety in the way of Mrs. Wheeler, ruby-crimson, with a golden reverse, and fine, bold, broad petals, the flowers from both exhibitors being in very fine character. The same award was made to Mr. R. Owen, for incurved Princess Waldemar, a refined flower in the way of Eve, blush—very pretty. The same award was made to Mrs. E. W. Clarke, a fine full incurved Japanese, and of a pale bright lilac colour; and to incurved Japanese Violet Rose, a flower described by its name—it has well-formed petals. The same award was made to Japanese incurved R. C. Kingston, a fine and distinct variety, chestnut purplish-crimson; and incurved Japanese Danaë, deep yellow, flushed with orange-brown, and having fine broad petals—all from Mr. E. Beckett. A Japanese variety sent by Mr. J. T. Barker, gr., Burton Closes, Bakewell, named Mrs. Needs, is in the way of Belle Paule, but having more colour; it was Commended.

In addition, Mr. C. E. Shea had a flat white Japanese variety, named L. Canning, and George Atkinson, like Mdlle. B. Pigny. Mr. R. Owen had a Japanese incurved, named Gladys Keyes, pale lilac and white; Mrs. W. H. Grenfell, lilac-pink, deepening to lilac; Countess of Lytton, a primrose sport from Meg Merrilies, but too much in the way of Ralph Brocklebank; and incurved, Matthew Russell, which appeared to be similar to Mrs. Coleman. Mr. Cox also had Violet Rose, but not so finely developed as the blooms shown by Mr. Beckett; and incurved Ada Spaulding, which appears to be too coarse to be shown with the refined varieties in this section. Mr. A. G. Hooking, Hurst Side, West Moulsey, had large flowered Anemone S. W. Graystone, a sport from Dame Blanche; and incurved, John Barry, a sport from Golden Eagle, but much resembling Angelina. Mr. E. Beckett had Mrs. Dunnett, a pale blush Japanese, in the way of Stanstead White; and Mont Blanc, a large pale sulphur variety, which the committee desired to see again. Messrs. H. Cannell & Sons, had J. R. Pearson, which was considered identical with Annie Clibran; Chalkhurst, a reflexed variety, pure white, of the Christine type, full and good; and single Guernsey Sunset, of a pale brownish-yellow colour. Mr. E. Molyneux, gr., Swanmore Park, Bishop's Waltham, sent Japanese Anatole Cordonnier, bright pale rosy-pink, full and promising. Mr. A. Greaves, Thwaite House, Cottingham, sent Edith A. Greaves, a blush sport from Fair Maid of Guernsey, but considered too thin, as shown. Mr. H. J. Jones, Ryecroft Nursery, Lewisham, sent Pompon, Howard Crane, a sport

from Vesuve, chestnut-crimson tipped with gold; Anemone, James Weston, white, with yellow centre; and Japanese, Lady Peel, a golden sport from Sarah Owen. Messrs. Reid & Bornemann, nurserymen, Sydenham, sent Japanese Spastra, as a decorative variety, blush, almost white, with thread-like petals; and Miss Esmeralda, an incurved Japanese, of a bronzy-crimson colour. Messrs. J. Laing & Sons, Stanstead Park Nurseries, Forest Hill, had Pompon Anemone, Bessie Flight, a pinkish-lilac sport from Madame Montels, but not considered sufficiently distinct; and Mr. E. Harland, Secretary of the Hull and East Riding Chrysanthemum Society, sent, on behalf of Mr. W. H. Hotham, Brough, East Yorkshire, two blooms of a deep-coloured sport from Golden Empress, large and full, which the Committee desired to see again early next autumn.

WATFORD.

November 11 and 12.—The fifth annual show was one of the best of its kind hitherto held here. As on former occasions, a large group, not for competition, was sent by the President, the Earl of Clarendon; it formed one of the chief attractions, and wherein Mr. Myers, his lordship's gardener, showed what grand flowers could be produced upon dwarf plants.

The 1st prize in the competition (open) for groups, was very cleverly won by Mr. Ashdown, gr. to the Hon. Secretary.

In cut blooms, Mr. E. Beckett, gr., Aldenham House, led in nearly all the classes, and was followed very closely by Mr. Dinsmore, of Harrow Weald.

The competition throughout was keen, and nothing but really good flowers had the remotest chance of success, the show conclusively sustaining the claim of the Watford people as to its being the best and leading show of Hertfordshire.

EDINBURGH BOTANICAL.

November 13.—This Society held the first meeting of the new session at 5, St. Andrew Square, Mr. Lindsay, President, in the chair. The following office-bearers were elected for the current session:—

President.—Robert Lindsay, Royal Botanic Garden.

Vice-Presidents.—Thomas A. G. Balfour, M.D., F.R.S.E., F.R.C.P.E.; Malcolm Dunn, Dalkeith Palace Gardens; David Christison, M.D., F.S.A. Scot.; Professor F. O. Bower, D.Sc., F.R.S.E., F.L.S.

Councillors.—Hugh Cleghorn, M.D., LL.D., F.R.S.E.; George Bird; John Methven; William Craig, M.D., F.R.S.E., F.R.C.S.E.; J. E. T. Aitchison, M.D., LL.D., C.I.E, F.R.S.; Andrew Taylor, F.R.P.S.; William Murray; William B. Boyd, of Faldonside; William Somerville, Dr. Œc., B.Sc., F.R.S.E.; John M. Macfarlane, D.Sc., F.R.S.E.

Honorary Secretary.—Professor Sir Douglas Maclagan, M.D., F.R.S.E.

Honorary Curator.—The Professor of Botany.

Foreign Secretary.—Andrew P. Aitken, M.A., D Sc., F.R.S.E.

Treasurer.—Patrick Neill Fraser.

Assistant-Secretary.—John Wilson, D.Sc.

The President called attention to the very valuable addition made to the Library of the Royal Botanic Garden of books bequeathed by the late Mr. John Ball, F.R.S., some of which were exhibited. This donation had been secured through the influence of Professor Bayley Balfour.

Mr. James Terras, B.Sc., read a paper on the "Distribution of the Sclerenchyma Elements in some Leaves," illustrated fully by a lantern demonstration of the leaves described, viz.:—Phormium, Dracæna, Araucaria, Dammara, Banksia, Hakea, Osmanthus, Thea, &c.

Dr. Wilson submitted observations on the "Floral Structure of Tacca cristata," in which he advanced the view that the stigmatic surface is on the inner side of the over-arching lobes of the stigma.

Mr. Lindsay read his report on "Temperature and Open-air Vegetation at the Royal Botanic Garden":—

July, 1890.—The weather during July was extremely cool and unsettled. Rain fell more or less on twenty-four days. The lowest night temperature was 40°, which occurred on the 7th of the month, and the highest 51°, on the 21st. The lowest day temperature was 61°, on the 1st, and the highest 75°, on the 13th. Roses were in good condition near the end of the month. On the rock-garden, 204 species and well-marked varieties of plants came into flower, as against 258 for the corresponding month last year. Amongst the most interesting were:—Campanula barbata, C. garganica, Calochortus luteus, Gentiana ornata, G. punctata, Galax aphylla, Galium rubrum, Geranium Lambertii, Erica Mackaiana, E. ramulosa, Erythræa diffusa, Hypericum coris, Lilium auratum, L. Krameri, Meconopsis Wallichii, Micromeria piperella, Orobanche rubra, Primula capitata, P. cortusoides, Spiræa astilboides, S. Bumalda, Teucrium pyrenaicum, Tricyrtis australis, Veratrum Maackii, Veronica glauco-cœrulea.

August.—Like the preceding month, August was cold and changeable, with copious falls of rain, rendering it very unfavourable for garden work. The lowest night temperature during this month was 35°, which occurred on the 31st; and the highest, 54°, on the 16th. The lowest day temperature was 59°, on the 11th; and the highest, 76°, on the 5th. Rain fell on fourteen days during the month. On the rock garden eighty-one species came into flower as against ninety-nine during last August. Amongst the most conspicuous were:—Aster sikkimensis, Bahia lanata, Carlina acaulis, Coreopsis verticillata, Gentiana alba, G. Wallichii, Hypericum patulum, Lobelia syphilitica, Monarda Kalmiana, Olearia Haastii, Senecio speciosus, Stokesia cyanea, Sedum Ewersii, Veronica longifolia subsessilis.

September.—September was a most favourable month, being unusually warm and dry for the time of year. No frost occurred; there was a fair amount of bright sunshine, and for gardening work was all that could be desired. The lowest night temperature was 38°, which occurred on the 1st, and the highest 56°, on the 4th of the month. The lowest day temperature was 59°, on the 31st, and the highest 80°, on the 16th.

Herbaceous plants and annuals flowered extremely well, and were at their best during this month. The earlier flowering kinds ripened an abundant crop of good seeds, which were gathered in fine condition.

Roses flowered very freely during September, the blossoms being equal to those developed earlier in the season. On the rock-garden, forty-seven plants came into flower as against thirty-eight during the corresponding month last year, amongst which were the following:—Andromeda japonica, Arenaria montana, Aster spectabilis, Crinum Mooreii, Crocus Imperati, C. nudiflorus, Gaultheria nummularifolia, Geranium Wilfredii, Gladiolus Saundersii, Kniphofia nobilis, Linaria anticaria, Palmerelia debilis, &c.

October.—The month of October was changeable and unsettled, but was a favourable month on the whole. The first frost this season took place on the morning of the 2nd, when the glass registered 32°. The thermometer was at or below the freezing point on eight occasions, indicating collectively 19° of frost for the month. The lowest readings were on the 19th, 30°; 20th, 30°; 26th, 29°; 27th, 29°; 28th, 23°. The lowest day reading was 42° on the 27th, and the highest 68° on the 12th. Rain fell on ten days.

Herbaceous plants continued to flower in fine condition till about the end of the month. The most effective were the various species of Aster or Michaelmas Daisies, Helianthus, Rudbeckias, and other Compositæ, also Japanese Anemones and Kniphofias. All tender plants, such as Dahlias, Pelargoniums, Calceolarias, &c., were destroyed by the severe frost on the 28th.

Leaves of deciduous trees fell off early in the month, and, as a rule, were not so well coloured as usual, many having fallen off in a green state. Autumnal tints have been much less interesting than usual this season, owing to the poor summer we have experienced. Hardy Rhododendrons, Azaleas, and Andromedas are well set with flower-buds for next year. Holly and Hawthorn have an abundant supply of fruit, in marked contrast to their barren condition last year. Trees and shrubs generally have fruited well this season.

On the rock garden twenty-three species came into flower during October as against thirteen for October, 1889. The total number which have flowered since January 1 to the end of October is 1154; during the same period last year 1473 had flowered—a difference of 319, which must be ascribed to the bad summer.

Amongst the most conspicuous in flower were:—Helleborus albifolius, Gentiana Kurroo, Caryopteris Mastacanthus, Saxifraga Fortunei, Oxalis lobata, Hypericum cuneatum, Gynerium argenteum, Liatris odoratissimus, Nardostachys Jatamansi, Veronica chathamica, Crocus asturicus, C. annulatus, C. medius, Schizostylis coccineus, Shuttleworthia pulchella, &c.

Dr. Wm. Craig announced the occurrence of Fistulina hepatica on a Spanish Chestnut in his garden in Edinburgh. As far as he and other mycologists present knew, it had not been noticed before on this tree in Scotland.

Dr. Paterson, Bridge of Allan, sent a fine spike of Cymbidium giganteum; also Vanda suavis, var., and Epidendrum sp.

Mr. John Campbell, Ledaig, sent cut blooms from the open air in his garden of Rhododendron Nobleanum, Cytisus fragrans, Veronica Andersoni var., Passiflora cœrulea, a branch of Olearia argophylla, &c.

W. B. Boyd, Esq., Faldonside, exhibited Galanthus nivalis var. octobrensis in full flower, also a finely crested form of Holly Fern, found by Dr. Craig near Loch Awe.

Iris Bakeriana and Cuscuta reflexa, in flower, were sent from the Royal Botanic Garden.

THE EDINBURGH CHRYSANTHEMUM SHOW.

Under the auspices of the Scottish Horticultural Association, this show was held on the 20th, 21st, and 22nd inst., in the Waverley Market, Edinburgh. In some respects it was superior to the great show of last year; notably in the matter of fruit and vegetables, and in miscellanous plants there was marked improvement. Vegetables were perhaps never shown better than on this occasion, and this was the tenor of comment by all old *habitués* of Edinburgh shows, as well as those whose first acquaintance with northern vegetable growers was made last week. The liberal prizes offered by the Association brought out the best vegetable exhibits that have been seen in the Waverley Market since it was first adopted as the arena for the display of horticultural skill. Such Leeks, Cauliflowers, Celery, Brussels Sprouts, Onions, Carrots, &c., would have done credit to cultivators from a more genial climate than ours.

Fruit also was represented in abundance, thanks also to the liberal prizes offered. Grapes, if not equally abundant with those shown ordinarily at the September Shows of the kindred Society—Royal Caledonian Horticultural—were quite equal in quality to anything that has ever appeared on the tables of that Society. So also with respect to Apples and Pears; many of the varieties shown in both these classes were necessarily different from those staged at the earlier show, but they were nevertheless splendid in size, quality, and finish.

Miscellaneous plants were perhaps fewer in numbers than they were last year, but there was very distinct evidence of improvement shown in the culture and setting up of Cyclamens, Primula sinensis, P. obconica, and other popular winter flowers, whether forced or natural as compared with last year's productions of the same kind.

The arrangements of the show, and the beautiful appearance of the great hall, left nothing to be desired. The market was beautifully decorated at very considerable expense, so as to render it a fit reception hall for the Queen of Winter flowers and her votaries—nothing, in short, was left undone to render the show a great floral entertainment, and the public seemed to appreciate the treat provided for them, for they flocked into the hall in such numbers, notwithstanding the dreary wet weather, as to render the mind of the executive not only easy, but buoyant, about the financial prospect.

Before passing to the schedule, it may be well for us to glance at some highly meritorious exhibits not included in it, and first as a purely cultural and artistic exhibit, a magnificent group of Chrysanthemums in pots, set up by Messrs. Thomas Methven & Sons, at the south-west corner of the hall, commanded our attention. It was some 20 feet wide, in circular, pyramidal form, with ample space on all sides, so that it could be viewed from every point. The plants, all well grown, and abundantly laden with blooms of almost prize-taking size, were grouped in an easy, well-balanced style from a narrow fringe of Ericas, Roman Hyacinths, Ferns, small Palms, &c., on the floor-level to the height of some 14 feet, terminating in a graceful crown of foliage formed by a fine specimen of Kentia Belmoreana. The group was deservedly much admired, and awarded a diploma of honour by the adjudicating committee.

Another greatly appreciated exhibit, placed on the opposite side of the hall at the same end, was an exhibition of drawing-room plants and floral decorations, by Messrs. Todd & Co., Edinburgh, who were awarded the Society's Gold Medal, in ap-

preciation of their much-admired contribution to the attractions of the show.

An exhibit of cut blooms of Chrysanthemums, &c., tastefully grouped on one of the tables, was awarded a Silver Medal on account of the superior merit and novelty of the blooms. The following were some of the more notable varieties in the collection:—Desmond (Japanese), fine rose; Mons. Carrière (Japanese), incurved, blush white; Mrs. J. S. Fogg (Japanese), light canary; Rose Queen (Japanese), in the way of Etoile de Lyon in colour and form, but more compact in build, and having a better centre; No. 614 (Japanese), unnamed, pure white, of distinct type. A perfect bloom of Mrs. Alpheus Hardy gave many Northern growers the first idea of what this peculiar variety is capable of under good culture. The beautiful Anemone-flowered Sabine was probably never seen better condition in the North than in this collection.

Messrs. Clibran, of Altrincham, received a Bronze Medal for an excellent collection of cut blooms of the several classes of Chrysanthemums.

Chrysanthemums in pots claim first attention. In this department there is still much room for improvement in the style of the plants, though several of the competitors gave evidence of being on the right track. Fine specimens of Avalanche and Stanstead White were shown by Mr. D. Jardine, gr. to Miss Gartshore, Ravelston, who, in the class for six plants (distinct), made an excellent 1st; with Mr. Geo. Reid, gr. Rockfield, Dundee, 2nd; and Mr. James Preston, gr., Falcon Hall, Edinburgh, 3rd. The Association's Medal, along with £5, formed the 1st prize.

The best three Pompons were staged by Mr. John Cowan, gr. to Mrs. McDowall, Blackford Road, Edinburgh. Mr. Cockburn, gr., Cottbridge Hall, had the best three reflexed varieties. Mr. Foote, gr., Parson's Green, Edinburgh, staged the finest three Japanese. Mr. Jardine again took 1st honours with three incurved varieties. Limitation of space compels our passing over the succeeding six classes, to notice the twelfth, in which there was some novelty of feature.

For the best standard Chrysanthemum, the Association's Silver Medal was offered, and was gained by Mr. John Machar, gr. to R. Mudie, Esq., Corona, Broughty Ferry. The plant was a remarkable one, in that it was a free and natural production, in which wire or frame-work had no share in the making; but the most striking point was that the head was composed of the following varieties, all in bloom:—Sœur Dorothée Souillé, Sœur Mélaine, Pink Christine, Golden Christine, Roi de Précoces, Mons. A. Dufour, and Chevalier Domage. They were all doing well, and were the result of grafting in spring last.

Cut Flowers.—Forty-eight blooms—Japanese, brought out the most imposing array in the cut bloom classes, there being eight entries for the prize which is known as the City of Edinburgh prize, and of the value of £20, in addition to the Association's Medal. Competition was keen between the three leading lots. The coveted honour fell to Mr. Donald Forbes, gr. to Alfred Holt, Esq., Crofton, Aigburth, whose flowers were characterised by great breadth and substance of floret, and great size and uniformity of build. Satisfaction was pretty general that an English grower had secured this high honour. The 2nd prize fell to Mr. J. Carruthers, gr. to Mrs. Fleming, Hillwood, Corstophine. His stand was a very close rival to that which obtained 1st place, and contained many grand blooms.

The Scottish Challenge Cup, open to Scottish gardeners and amateurs only, brought up even a larger number of competitors than the last-mentioned prize—thirty-six blooms, eighteen Japanese, and eighteen incurved, twelve varieties of each, being the terms. For this prize there were eleven entries; and Mr. John Clark, gr. to S. F. Roberts, Esq., Bannerfield, Selkirk, won the Blue Ribbon with a splendid lot. Mr. John Machar was an excellent 2nd, with larger, but less perfectly-finished blooms.

The finest twenty-four blooms, twelve Japanese and twelve incurved, were tabled by Mr. John Foster, gr. to Mrs. Roberts, Wellwood Park, Selkirk. In the succeeding class—twenty-four Japanese, Mr. D. Forbes again came to the front, with many superb blooms, being again closely pressed by Mr. Carruthers. For twenty-four incurved, Mr. D. Forbes was again 1st, with Mr. Clark as an excellent 2nd. The following class, twelve Japanese, twelve varieties, led to Mr. Forbes and Mr. Carruthers dividing honours in the order named. The only other that space enables us to notice among cut flowers is that of forty-eight blooms, in not less than thirty-six varieties, and open to nurserymen only. For this there were three competitors, all from north of the Border. Messrs. R. B. Laird & Sons, Edinburgh, proved the winners, with splendid flowers of most of the leading varieties in the exhibition classes; and Messrs. Kerr & Sons, Kalemouth Nurseries, Roxburgh, were 2nd.

Groups of Plants for Effect.—In the gardeners' and amateurs' classes there were two sets of these provided for in the schedule—one a group of Chrysanthemums and other flowering and foliage plants, arranged in a circle not exceeding 15 feet diameter; the other a group of Chrysanthemums arranged in crescent form, to occupy a space of 60 square feet. There was only one competitor for the former, Mr. Grossart, gr. to J. Buchanan, Esq., Oswald House, Edinburgh, who set up a charming group composed of single-stemmed and bush Chrysanthemums, light Palms, Ferns, Ericas, Roman Hyacinths, &c.

The 1st prize in the crescent-shaped groups for which there were two competitors, was awarded to Mr. Jardine, and the 2nd to Mr. Donaldson, gr. to H. E. Moss, Esq., Ormelie, Murrayfield. There was also for market growers a prize offered for a group of Chrysanthemums arranged for effect, in a space of not less than 100 square feet, which was competed for by Messrs. Realing & Smith, Logie Green; and Mr. T. Milne, Sunnybank; the former taking 1st prize with a very superior group.

For a miscellaneous group of hardy plants on a space not exceeding 400 square feet, and for a collection of Conifers in pots, both arranged for effect, Messrs. James Dickson & Sons, Hanover Street, Edinburgh, received the 1st prizes. Both groups consisted of very superior plants tastefully arranged.

Fruit.—Grapes were remarkably fine. The principal class—eight bunches, not less than four varieties—brought together eight competitors. 1st, Mr. George Mackinnon, Melville Castle, whose fruit was remarkable for perfect finish; 2nd and 3rd, Mr. John Leslie, gr. to A. Coates, Esq., Pitcullen House, Perth; and Mr. Wm. Murray, gr. to J. L. Learmouth, Esq., Park Hall, Polmont, in that order.

Four bunches.—1st, Mr. Leslie; 2nd, Mr. Murray.

For two Pines, 1st, Mr. McIntyre, The Glen, Innerleithen; 2nd, Mr. McIndoe, Hutton Hall, Guisboro.

In the minor classes of fruit, the competition was keen, and the competitors came from all parts of the country.

The Government of Nova Scotia exhibited a collection of forty varieties of Apples, to which was awarded a Diploma of Honour for their high excellence. Following is the list of sorts contained in the collection:—Flushing Spitzenberg, Dutch Mignonne, Red Calville, Swazee Pomme Grisii, Twenty Ounces, Talman Sweet, Red Pearmain, Juneating, Gloria Mundi, Dutch Codlin, Wagner, Hubbart, Long Stem, Hubbardston, Schaffer, Yellow Pearmain, Lyscome, Buck's County, Delaware, Bailey's Codlin, Kaighn's Spitzenberg, Chester County, Kenwick, Fall Pippin, Œsopus Spitzenberg, Grime's Golden Pippin, Mic-mac, Northern Spy, Nonpareil, Ribston Pippin, Baldwin, Knight's Pippin, Blenheim Bellefleur, Gravenstein, King of Tomkin's County, and Starkes.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending November 22, is furnished from the Meteorological Office:—

"The *weather* was very dull and damp, with much fog and mist, during the greater part of the week, but towards its close the air became drier, and the mist cleared. Rain fell daily at most of the western and northern stations, but in most of the English districts there was very little until the latter end of the period.

"The *temperature* has been much above the mean, the excess varying from 6° over the major part of the kingdom to 8° in the 'Midland Counties' and 'England, S.' The highest of the maxima were recorded at most stations on the 19th, when they ranged from 63° in 'Ireland, S.' (at Dublin), and 62° in the 'Midland Counties,' to 57° in 'Scotland, N.,' 'England, E.,' and 'England, S.W.' The lowest of the minima, which were registered either at the beginning or end of the week, ranged from 27° in 'Scotland, E.,' to 35° in 'England, S.,' and to 47° in the 'Channel Islands.' During the greater part of the period the minima were very high for the time of year.

"The *rainfall* has been more than the mean in 'Scotland, W.,' and 'Ireland, N.,' and equal to it in the north and east of Scotland; in all other districts it has been less than the normal.

"*Bright sunshine* has been very deficient, the percentage of the possible duration having ranged from 5 in 'Scotland, W.,' and 'England, S.W.,' and 7 in 'Scotland, N.,' to 18 in 'Scotland, E.,' and 25 in 'Ireland, S.'"

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending Nov. 22.	Accumulated. Above 42° for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	6 +	34	6	+ 223	— 117	0 av.	242	52.4	7	24
2	6 +	37	12	+ 68	— 86	0 av.	198	30.8	18	30
3	6 +	41	6	+ 185	— 119	4 —	169	22.3	16	30
4	6 +	38	1	+ 92	— 58	4 —	167	21.0	8	37
5	8 +	47	0	+ 73	— 66	4 —	164	20.8	11	33
6	8 +	62	0	+ 105	— 102	4 —	164	23.8	10	35
7	7 +	37	1	+ 122	— 125	4 +	207	50.0	5	31
8	6 +	43	0	+ 173	— 119	5 +	195	33.3	11	29
9	7 +	64	0	+ 25	— 10	3 —	199	34.2	5	36
10	6 +	41	0	+ 152	— 107	6 +	225	35.4	9	29
11	7 +	60	0	+ 170	— 52	2 —	208	37.1	25	32
12	6 +	77	0	+ 128	— 23	7 —	191	29.4	?	?

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

MARKETS.

COVENT GARDEN, November 27.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

Prices remain as last week. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples, ½-sieve	3 6- 7 0	Lemons, per case	20 0-40 0
— Nova Scotia, brl.	15 0-25 0	Melons, each	0 6- 2 0
Cobs, Kent, 100 lb.	65 0-70 0	Pine-apples, St. Michael, each	2 0- 6 0
Grapes, lb.	0 9- 2 9		

Vegetables.—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, each	0 4- 0 6	Lettuces, per dozen	1 6- ...
Beans, French, lb.	1 0- ...	Mushrooms, punnet	2 0- ...
Beet, red, per dozen	1 0- 2 0	Mustard and Cress, punnet	0 4- ...
Carrots, per bunch	0 6- ...	Parsley, per bunch	0 4- ...
Cauliflowers, each	0 4- 0 6	Shallots, per lb.	0 6- ...
Celery, per bundle	1 6- 2 0	Spinach, per bushel	3 0- ...
Cucumbers, each	0 4- 0 6	Tomatos, per lb.	0 9- 1 0
Endive, per dozen	2 0- ...	Turnips, per bunch	0 4- ...
Herbs, per bunch	0 4- ...		

Potatos.—Supply during the past week has increased a little, but prices continue firm at last week's quotations. *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0
Aspidistra, doz.	18 0	42 0
— speci. plants, each	7 6	10 6
Bouvardias, p. doz.	9 0	18 0
Chrsanthem., p. doz.	4 0	18 0
— specimen plants, each	2 6	5 0
Cyclamens, dozen	9 0	18 0
Cyperus, per dozen	4 0	12 0
Dracæna terminalis, per dozen	30 0	60 0
— viridis, per doz.	12 0	24 0
Euonymus, in var., per dozen	6 0	18 0
Evergreens, in var., per dozen	6 0	24 0
Ericas, various, doz.	8 0	18 0
Ferns, in var., per dozen	4 0	18 0
Ficus elastica, each	1 6	7 0
Foliage plants, various, each	2 0	10 0
Hydrangeas, doz.	9 0	18 0
Liliums, various, per dozen	9 0	18 0
Marguerites, doz.	6 0	12 0
Mignonette, per doz.	4 0	6 0
Palms in variety, each	2 6	21 0
Poinsettias, dozen	9 0	15 0
Solanums, per doz.	9 0	15 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0
Bouvardias, per bun.	0 6	1 0
Callæthiopica, 12 bl.	4 0	8 0
Carnations, 12 blms.	1 0	2 0
Chrysanth., 12 bun.	3 0	9 0
— 12 blooms	1 0	3 0
Cyclamens, per doz.	0 3	0 6
Eucharis, per dozen	3 0	6 0
Gardenias, 12 blooms	2 0	4 0
Heliotropes, 12 spr.	0 6	1 0
Hyacinths, Rom., 12 sprays	1 0	2 0
Lilium, var., 12 bl.	2 0	6 0
Maiden Hair Fern, 12 blooms	4 0	9 0
Marguerites, 12 bun.	3 0	6 0
Mignonette, 12 bun.	2 0	4 0
Narcissus (paper white), 12 sprays	1 0	1 6
— French, 12 bun.	4 0	9 0
Pelargoniums, scarlet, 12 spr.	0 4	0 6
— dozen sprays	1 0	1 6
Poinsettias, 12 blms.	4 0	8 0
Primulas, double, 12 sprays	0 6	1 0
Pyrethrum, 12 bun.	2 0	4 0
Roses, Tea, per doz.	0 6	2 0
— coloured, dozen	3 0	5 0
— red, per dozen	1 0	2 0
— Safrano, French, per box of 100	4 0	8 0
— ditto, per dozen	1 0	2 0
Stephanotis, per 12 sprays	4 0	6 0
Tuberoses, 12 blms.	0 4	0 6
Violets, 12 bun.	1 0	2 0
— Parme, Fr., bun.	2 6	3 6
— dark, Fr., bun.	1 6	2 6

ORCHID-BLOOM in variety.

SEEDS.

LONDON: *Nov.* 26.—Messrs. John Shaw & Sons' Seed Merchants, of 37, Mark Lane, London, E.C.' write that to-day's market presented no striking feature either of interest or of novelty. As regards Clover seeds, business just now is in abeyance. Rye-grasses also are for the moment neglected. The cold weather improves the demand for boiling Peas and Haricot Beans. In Hemp seed, a further advance is noted. Canary seed is steady, at the low prices now ruling. Fine white Millet, suitable for birds, is scarce. The trade for winter Tares seems nearly over. Mustard is without change. The Rape seed values keep very firm. Linseed is unaltered.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending November 22, and for the corresponding period last year:—1890: Wheat, 32*s.* 9*d.*; Barley, 28*s.* 11*d.*; Oats, 17*s.* 8*d.* 1889: Wheat, 30*s.* 0*d.*; Barley, 29*s.* 11*d.*; Oats, 17*s.* 4*d.*

FRUIT AND VEGETABLES.

SPITALFIELDS: *November* 26.—Good supplies of all kinds of field and market garden produce; demand steady at late rates. Fruit trade good. Prices:—English Apples, 4*s.* to 10*s.* per bushel; Amer. do., 16*s.* to 24*s.* per barrel; Pears, 5*s.* to 6*s.* per half-sieve; English Tomatos, 4*s.* to 6*s.* per peck; Savoys, 2*s.* to 4*s.* per tally; Cabbages, 1*s.* 6*d.* to 3*s.* 6*d.* do.; Cauliflowers, 3*s.* to 6*s.* 6*d.* do.; Spinach, 1*s.* to 2*s.* per bushel; Brussels Sprouts, 1*s.* 3*d.* to 1*s.* 9*d.* per half-sieve; Curly Kale, 9*d.* to 1*s.* per bushel; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Greens, 9*d.* to 1*s.* 6*d.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Carrots, 1*s.* 6*d.* to 2*s.* 9*d.* do.; Parsley, 1*s.* to 2*s.* do.; Celery, 4*d.* to 9*d.* per bundle; Horseradish, 1*s.* 2*d.* to 1*s.* 4*d.* do.; Parsnips, 4*d.* to 8*d.* per score; Beetroots, 3*d.* to 5*d.* per dozen; frame Cucumbers, 2*s.* to 3*s.* 6*d.* do.; Leeks, 1*s.* 6*d.* to 2*s.* do.; Cabbage Lettuces, 1*s.* to 1*s.* 6*d.* do.; Endive, 1*s.* to 1*s.* 6*d.* do.; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; English Onions, 5*s.* to 5*s.* 6*d.* per cwt.; Spanish do., 6*s.* to 7*s.* 6*d.* per case; Belgian do., 2*s.* 6*d.* to 2*s.* 9*d.* per bag of 110 lb.; Dutch do., 2*s.* 6*d.* to 2*s.* 9*d.* do.; Carrots, 20*s.* to 55*s.* per ton.

STRATFORD: *November* 25.—There has been an excellent supply of all kinds of produce at this market during the past week, and a good trade was done at the under-mentioned prices: — Cabbages, 2*s.* to 3*s.* 6*d.* per tally; Savoys, 3*s.* to 5*s.* do.; Cauliflowers, 3*s.* to 6*s.* do.; Turnips, 30*s.* to 40*s.* per ton; Carrots, household, 35*s.* to 45*s.* do.; do., cattle-feeding, 26*s.* to 32*s.* do.; Parsnips, 2*s.* 9*d.* to 3*s.* 6*d.* per cwt.; Mangels, 17*s.* to 18*s.* per ton; Swedes, 18*s.* to 19*s.* do.; Onions, English, 4*s.* 6*d.* to 5*s.* per cwt.; do. Dutch, 3*s.* to 4*s.* 6*d.* per bag; Apples, English, 3*s.* to 7*s.* per bushel: Celery, 6*s.* to 12*s.* per dozen bundles; Carrots, 2*s.* to 3*s.* per dozen bunches; Dutch Apples, 14*s.* to 15*s.* per barrel; Watercress, 8*d.* per dozen.

POTATOS.

BOROUGH AND SPITALFIELDS: *Nov.* 25.—Quotations:—Hebrons, 60*s.* to 90*s.*; Regents, 50*s.* to 75*s.*; Best do., 80*s.* to 90*s.*; Magnums, 55*s.* to 85*s.*; Scotch, 80*s.* to 110*s.*; Imperators, 60*s.* to 80*s.* per ton.

SPITALFIELDS: *Nov.* 26.—Quotations:—Magnums, 50*s.* to 80*s.*; Regents, 55*s.* to 90*s.*; Champions, 60*s.* to 70*s.*; Imperators, 60*s.* to 90*s.*; Hebrons, 55*s.* to 80*s.*; Victorias, 60*s.* to 70*s.* per ton.

STRATFORD: *Nov.* 26.—Quotations:—Magnums, light, 60*s.* to 75*s.*; do., dark, 55*s.* to 65*s.*; Hebrons, 70*s.* to 80*s.*; Imperators, 55*s.* to 70*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the metropolitan markets during the past week:—Clover, prime, 80*s.* to 102*s.* 6*d.*; inferior, do., 46*s.* to 75*s.*; hay, best, 60*s.* to 87*s.*; inferior, do., 26*s.* to 50*s.*; and straw, 24*s.* to 30*s.* per load.

NOTICES TO CORRESPONDENTS.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

CORRECTION: Tulips, p. 591. *For* plant in "August," *read* plant in "October."

NAMES OF FRUITS: *J. H. Willett.* 1, Cornish Gilliflower; 2, Lord Derby; 3, not recognised.—*Clark, Bros. & Co.* Pear Beurré Clairgeau; 3, Reinette du Canada; 4, Cox's Pomona; others bruised beyond recognition. — *Wentworth.* We cannot undertake to name fruits from rotten specimens. *Captain Symes.* Your handsome Pear is Beurré Clairgeau.—*F. S. D. Apple:* 1, Warner's King; 2, Fearn's Pippin; 3, Claygate Pearmain. *Pear:* 1, not known; 2, Vicar of Winkfield; 3, Huyshe's Bergamot.—*W. N. F.* Apple Blenheim Orange. Pear not recognised.—*R. G.* Your Figs from Madeira are the true white Ischia. They are of excellent quality.

NAMES OF PLANTS: *A Reader.* 1, Poa nemoralis; 2, Dactylis glomerata; 3, Agrostis spica venti; 4, Bromus mollis; 5, Bromus arvensis; 6, Poa pratensis; 7, Calamagrostis lanceolata.—*F. S. D.* 1, Selaginella plumosa; 2, Pteris tremula; 3, Pteris serrulata cristata; 4, Selaginella Wildenovii; 5, Pteris argyræa; 6, Pteris longifolia.—*W. H.* should endeavour to send leaves; 1 and 2 are species of Euonymus; 3, a Pyrus.

ORCHID IN BLOOM: *J. Curry.* You could show the plant at the Royal Horticultural Society's meeting on December 9. Apply to Mr. Barron, Royal Horticultural Society's Garden, Chiswick.

PEARS: *Stangrove.* The spurs are very long, and deficient in vigour, from attacks of scale insects, and from old age. Prune off the spurs down to the old wood—that is, make the branches as smooth as a whip-stock; then scrub the bark with Gishurst soap, 8 oz. to the gallon of water; and if you like to go to the trouble of it, paint them with water in which are mixed clay, lime, cowdung, and sulphur, to the consistency of paint. The branches will bristle with young wood in the early summer, much of which may be rubbed off whilst tender, and good shoots, at 6 to 8 inches apart, left to grow till July, when they may be shortened back to 8 inches, and in winter still further—say, to 2 inches; Pears with naturally long spurs, like Jargonelle and Chaumontel, being left about 3 inches long. Flower-buds will form on these new, cut-back shoots the following summer, and there will also be much young growth, which must be rubbed off, in great part, as soon as it is perceived, and the shoots growing from the spurs themselves reduced to two or three, shortening them in June or July as before, and in winter cutting them back almost to the wood of the year previous. When spurs get long, as they will in time, cut them back, a few annually, leaving a snag of an inch, or a little more. Sometimes wall-trees, and bushes and pyramids, need to have new life put into the old branches, or nothing but miserably poor fruits can be obtained, and this irrespective of the length of their fruit-spurs. To do this, select strong shoots of the current summer growth, and if against a wall, loop them back to the wall somewhat, but let them have play—it will greatly strengthen them. Stop them in July at 18 inches from the point of emission from the old wood. If these shoots break again at the point, let the new growth continue for four weeks, and stop it again within 2 inches of the first stopping. These shoots, whether on free-standing bushes, &c., or on walls, will form flower-buds the next year, and will the next year afterwards bring finer fruits than the old spurs. On walls they may be laid in diagonally, after cutting out each alternate main branch; and in bushes and pyramids means must be taken to avoid crowding. Having got the new fruiting branches into bearing, old spurs may be removed in the manner referred to in the former part of this notice.

PELARGONIUM LEAVES: *Ignoramus.* Consult the answer given to a correspondent in our last issue. The spots are due to a minute fungus, whose growth is favoured by the use of the manure. Burn the leaves at once.

CATALOGUES RECEIVED.

WOOD & INGRAM, Huntingdon — Nursery Stock, Trees, &c.

STUART & MEIN, Kelso, N.B.—Forest Trees, Fruit Trees, Roses, &c.

C. BENNETT, Standard Nursery, Homebash, N.S.W., Australia.

COMMUNICATIONS RECEIVED.—G. F. S. E.—A. G.—E. W. B.—W. W.—Earl Ducie.—B. D. F.—G. S. B.—W. M.—C. de B.—E. J. L.—W. M., Bexley (thanks).—E. J. L. (book, with thanks.)—J. E., Harting.—J. Bygrave (shortly).—H. Elliott.—G. B. C.—T. G.—Ryder & Son.—J. C.—S. Ray.—F. R.—A. D.—R. D.—J. P.—D. C. P.—W. G.—J. S.- A. W. T.

MR. RUSKIN'S GARDEN.—A very interesting account of Mr. RUSKIN's house at Brantwood, Coniston, appears in the November number of *Murray's Magazine.* The following extracts will have a special interest to our readers:—"Now, you must come all over the gardens, or you won't have half seen Brantwood," says Mrs. SEVERN, the best and kindest of cicerones. First, we will go to the Fairfield Seat (the "show" walk at Brantwood, for those who cannot mount the moor in spring-time), walking there through a perfect mist of Hyacinths "opening in flakes of blue fire," an easy, pleasant ascent among woods, from which you come out quite suddenly upon a most gorgeous mountain view. Straight in front of you, Helvellyn and Fairfield rear their mighty heads, nearer come Raven Craggs, Yewdale, "with its grey rocks cushioned with heather up to their summits," and Weatherlam, while the lake and its peaceful little village lie at our feet. . . . A mass of heather and bracken mingled with the late wild Raspberries and Strawberries which abound at Brantwood: the things this little moor grows by Nature, and still further has been made to grow by art, would make a long story! I must be content to tell of the Juniper and Dog Roses clustering everywhere, and mount a little higher by the path which leads over into the Grisedale valley, when we suddenly find ourselves in a Cherry orchard! Mr. RUSKIN agrees to keep this orchard for the benefit of the birds who are his tenants, for there are seldom Cherries to be found there except by themselves; they look upon an orchard in such a position as their own by right of soaring, and succeed easily in keeping possession of their stronghold. Winding down the hill, and a short distance through the wood, is RUSKIN's own garden. Here the Professor permits no other toil than his own, and if some day Mrs. SEVERN slips in with a gardener, she knows she has done a naughty thing, and trembles accordingly. A sudden little green cultivated place in the middle of tall Nutwood, which in spring is full of Daffodils and Cherry blossoms, with the hum of bees and the distant ripple of the lake—such is the spot Mr. RUSKIN has chosen especially for his own, and many an hour has he walked up and down its sunny paths, worked in its plots, or sat in that dearly-loved corner seat, where a peep of the silver lake below reflects the sunshine above. He who has taught us that "the noblest human life was appointed to be led by the cattle-field and in the garden," is prouder of his toil here than of his making of great books and renown.

CHRYSANTHEMUM SEASON.

STANDEN'S MANURE.

Established Nearly 30 Years.

It is now generally acknowledged that this highly concentrated Manure exceeds all others in general fertilizing properties and staying powers, thus rendering its money value at least double that of other Manures.

More prizes have been obtained through the use of this Manure by Chrysanthemum exhibitors than by any other Fertilizer.

It promotes a rapid, healthy, and robust growth to plants generally.

It is a clean and dry Powder, with very little smell.

It is consequently particularly adaptable for Amateurs, equally with Nurserymen.

VOLUNTARY TESTIMONIALS,
the originals of which can be seen if desired :—

MESSRS. CORRY, SOPER, FOWLER & CO.,
"Fareham.

"SIRS,—We have used Standen's Manure for Chrysanthemums, mixed with the mould, when potting their last shift, and an occasional sprinkle over the top of the pots during their growth, especially just before the bud shows. We took last season thirty-one First Prizes, Silver Cup at Portsmouth, £25 Silver Cup, Devizes, and £10. We can highly recommend it for plants, especially Roses, Pelargoniums, Azaleas, Gardenias, and Stephanotis. Our Stephanotis this season we can pick by the gallon, from six to eight pips on each spray."

(Signed) W. & G. DROVER.

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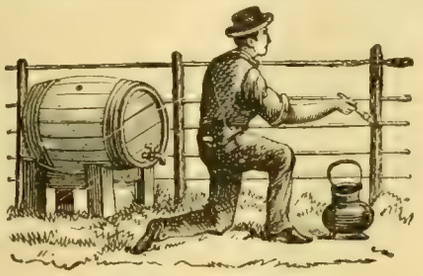
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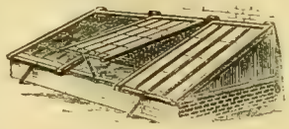
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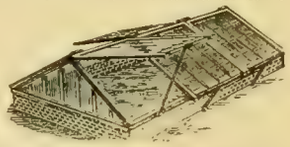


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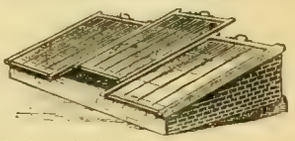


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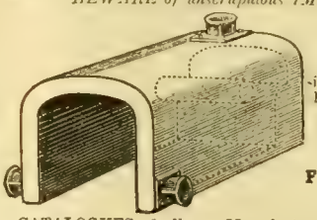
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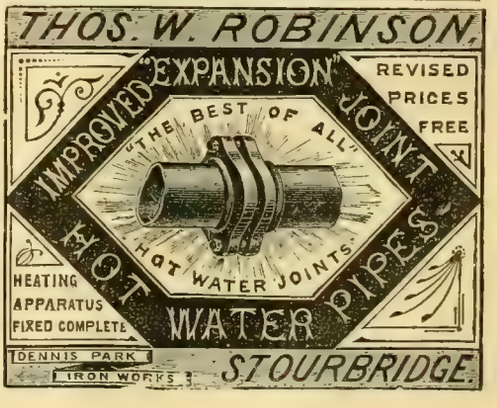
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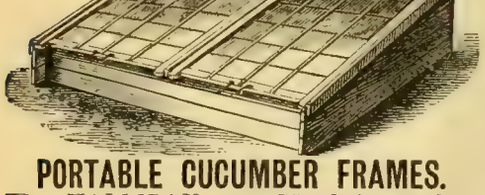
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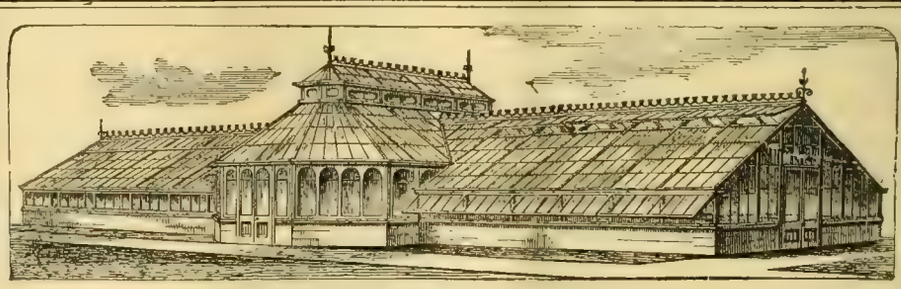
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WANTED, about 60 large Fan or Horizontal-trained PEAR TREES, on Quince, for a wall 16 feet high, viz.:—25 Pitmaston Duchess, 10 Durondeau, 10 Marie Louise, 5 Marie Benoist, 5 Triomphe de Vienne, 5 Gratioli of Jersey. State size, and lowest cash price, to T. ARNALL, Brookside, Headington Hill, Oxford.

WANTED TO PURCHASE, GARDENERS' CHRONICLE, year 1866, or any Number of the same.—G. MILLER, 8, Montagu Place, W.C.

SUTTON'S CYCLAMEN.—SOW NOW.—Sutton's Prize, mixed, 5*s.* and 2*s.* 6*d.* per packet; Sutton's Vulcan, 5*s.* and 2*s.* 6*d.* per packet; Sutton's White Butterfly, 3*s.* 6*d.* and 1*s.* 6*d.* per packet; Sutton's Giant, mixed, 5*s.* and 2*s.* 6*d.* per packet. Mr. H. Berry, Gardener to the Rev. W. Shirley, says:—"Truly a magnificent strain; flowers very large, colours brilliant, and the marbled foliage makes a beautiful contrast." SUTTON'S SEEDS, Genuine only Direct from SUTTON AND SONS, the Queen's Seedsmen, Reading. (All Flower Seeds sent post-free.)

CHOICE FLOWERS AND CHOICE FRUIT. Buyers of the above will secure in all cases the finest quality at the lowest prices, by applying to HOOPER'S Flower and Fruit Agency, Covent Garden, W.C. Consignments of either disposed of on the best market terms, and remittances made immediately. Correspondence invited.

RHODODENDRONS. — Largest and finest stocks, all sizes, grown in peat. RHODODENDRON PONTICUM, 10-inch bushy, 16*s.* per 100; 1 to 1½ feet, 22*s.* per 100; 1½ to 2 feet, 30*s.* per 100; 2 to 2½ feet, 40*s.* per 100; 3 feet, 60*s.* per 100; 4 to 5 feet, 120*s.* per 100. Hybrids, fine named, 2 to 3 feet, 70*s.* per 100; 3 to 4 feet, 150*s.* per 100. RHODODENDRONS, fine stocks, 90*s.* per 1000. GARLIES MITCHELL, Nurseryman, Stranraer.

CHRISTMAS TREES.—Well-furnished SPRUCE FIR, 2 to 3 feet, 20*s.* per 100. Free on Rail for Cash.—SHINGLER AND CHINERY, The Nurseries, Briston, East Dereham, Norfolk.

S. SPOONER AND SONS can offer the following in fine stuff:—Apples—Standard Manks' and Keswick Codlin. Pears—Standard and Half-standard Hazel, 2-yr. Williams' and Hazel, Maiden Pitmaston. Apples—Dwarf-trained. Red Currants. Laurel rotundifolia, 3 to 7 feet; Privet and Cupressus Lawsonianum, 3 to 7 feet; also a good stock of 1, 2, and 3-yr. old Fruit Trees.—Hounslow Nurseries, Middlesex.

50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high, 15*s.* to £10 per 100, free on rail. J. J. CLARK, Goldstone Farm, Brighton.

Special Trade Offer.

30,000 DWARF ROSES, grand plants, 25*s.* per 100 for Cash. List free. Evergreen and Oval Leaf PRIVET, all sizes, cheap. Price on application. A. J. AND C. ALLEN, Nurserymen, Florists, and Rose Growers, Heigham, Norwich.

CLEARANCE SALE of BULBS, all in fine condition. HYACINTHS, TULIPS, DAFFODILS, CROCUSES, SNOWDROPS, SCILLAS, CHIONODOXAS, and other BULBS, at REDUCED PRICES. Clearance LIST free on application to BARR AND SON, 12, King St., Covent Garden.

BOYCE'S CHRYSANTHEMUMS. — Many thousands of well-rooted Cuttings ready in February. Orders booked now. Satisfaction guaranteed. Descriptive Catalogue, with most complete directions upon cultivation, 4*d.* (returned in first order).—W. E. BOYCE, F.N.C.S., Archway Rd., Highgate.

SUPERB ORCHIDS, CHEAP.—Thousands to select from. Write for List, free.—P. MCARTHUR, The London Nursery, 4, Maida Vale, London, W.

Gentlemen.

MY DWARF ROSES are the finest Plants I have ever grown. Many kinds are bushes 3 to 6 feet high. CHARLES NOBLE, Bagshot.

FOR SALE, CYATHEA MEDULLARIS, 5 feet trunk, 6 perfect fronds. Fine specimen. Apply, GARDENER, Saint Ann's, Carlisle.

SEAKALE, extra strong for forcing, 12*s.* 6*d.* per 100. ASPARAGUS, extra strong for forcing, 17*s.* 6*d.* per 100. WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney. WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Dutch Bulbs.

GREAT UNRESERVED SALES, MONDAY, WEDNESDAY and THURSDAY NEXT.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY, WEDNESDAY, and THURSDAY NEXT, at half-past 11 o'Clock precisely each day, extensive consignments of named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, all received direct for Unreserved Sale, and lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

100,000 Havana Cigars.

CLEARANCE SALE, for account of various shippers.

Important to Gentlemen, Cigar Dealers, Hotel Keepers, and others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, December 9, at half-past 12 o'Clock precisely, on account of various Shippers, 100,000 genuine HAVANA CIGARS, comprising Cabañas, Caliope, Carolina, Escepcion, Española Flor de Cuba, Flor el Todo, Henry Clay, Jorge Juan; 50,000 MEXICAN CIGARS and CHEROOTS, consisting of La Prueba, Estudiana, and El. Arte; 10,000 CONTINENTAL CIGARS, 500,000 EGYPTIAN, RUSSIAN, and MEXICAN CIGARETTES, the whole guaranteed genuine.

Samples may be obtained at the Sale Rooms at stated prices, one week prior to the Sale.

Catalogues may be obtained of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. Sander, to SELL by AUCTION, on FRIDAY NEXT, December 12, at half-past 12 o'Clock precisely, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., a quantity of LÆLIA GRANDIS, the majority of them with flower-sheaths. This species is very rare and beautiful, it exists only in small quantities in its native home. The flowers are very handsome with numerous sparkling crystals profusely dotted over their surface, the lip is rich rose-coloured, the interior of the throat being very dark. We can recommend the lots offered as being good healthy flowering plants.

BRASSAVOLA GLAUCA.

A very useful pure white flowering species, resembling B. Digbyana, but without the fringed lip. This plant is most useful for all purposes, cutting and decorative. The plants offered are fine healthy pieces, in splendid condition.

CATTLEYA TRIANÆ VAR. (See dried flowers.)

The Collector found these plants in an unexplored part of Colombia, a great distance from where Trianæ is usually found, and to show the great distinctness between this species and Trianæ some flowers were sent which were gathered from the plants when in flower, and these are truly magnificent, two of the flowers were pure white, and may be seen with the others on the day of Sale. The plants offered for Sale are good large pieces, with sound growths now pushing forth.

LÆLIA HARPOPHYLLA.

Good healthy plants, many now coming into flower. A most useful Orchid for cutting purposes, as it produces large spikes of orange-scarlet flowers, which remain in perfection for a long time.

CYPRIPEDIUM INSIGNE, Sander's Ne Plus Ultra strain, good importation, from which may be found some choice varieties.

CYPRIPEDIUMS.

The following are from a Gentleman's collection, and from one of the best in the country; they are sold for want of room, and consist of good varieties only; there are many very large specimens among them, and can be thoroughly recommended to purchasers.

Cypripedium Arthurianum	Cypripedium œnanthum superbum
,, selligerum majus	,, pleisotochorum
,, ,, platypetalum	,, Sallierii
,, Schroederianum	,, insigne Coulsonianum
,, plunerum	,, nitens
,, Morganiæ	,, Schomburghianum
,, doliare	,, Petrii
,, almum	,, Wallisii
,, grande atratum	,, Measuresianum
,, Harrisianum superbum	,, Io grandis
,, Hornianum	,, Laforcadei
,, Lemoinieri	,, melanoptholmum
,, Godseffiana	,, microcheilum

And many other choice and valuable varieties.

Four New Sobralias.

SOBRALIA WILSONII, A splendid new variety.

Messrs. F. Sander & Co., have just received an importation of the fine Sobralia in splendid condition, each clump is furnished with stout fleshy roots and sound eyes. This variety is very beautiful.

SOBRALIA XANTHOLEUCA.

A rare and beautiful golden-flowering form, many of its rich flowers are produced from one stem, and the plants will flower for three or four months. The plants offered are imported, and are in fine condition, many fine forms may be looked for in this importation, as the plants offered are sound and healthy.

SOBRALIA NIVOSA.

A very handsome white-flowering form. This plant is specially recommended to buyers on account of its beauty and distinctness, the flowers are large, and many are produced from one stem.

SOBRALIA LEUCOXANTHA.

A dwarf-growing species, the flowers are of a snowy whiteness, with an orange-coloured throat to the lip, the latter is beautifully crisped at the margin, greatly adding to the beauty of the flowers. The plants, like the others offered, have been just received, and are in first-rate order.

Also a magnificent importation of **Cattleya Chrysotoxa**, true, in finest possible condition.

On view morning of Sale, and Catalogues had.

Wednesday Next.—Important to the Trade.

10,000 LILIUM AURATUM, splendid Bulbs, just received from Japan, in unusually good condition.

20,000 AFRICAN TUBEROSES.

The whole for Sale, absolutely without reserve,

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE, on WEDNESDAY NEXT, December 10.

On view morning of Sale, and Catalogues had.

Wednesday Next.

LILIES, GREENHOUSE PLANTS, and DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, December 10, at half-past 11 o'Clock, 100 splendid Bulbs of Lilium auratum, from Japan; 20,000 African Tuberoses, an assortment of English grown Lilies, Azaleas, Camellias, and other plants from Belgium; Ferns and Decorative Plants from an English Nursery; Standard Roses, strong imported Clumps of Christmas Roses, Lily of the Valley, a large variety of hardy Bulbs, Daffodils, and about 100 lots of Hyacinths, Tulips, Crocus, Narcissus, and other Dutch Flower Roots.

On view morning of Sale, and Catalogues had.

Shepperton.

By order of the Executors of the late Mr. Bennett, the celebrated raiser of New Roses.

Important to Rose Growers.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors (the Nursery having been let), to SELL by AUCTION, on the Premises, The Pedigree Rose Nursery, Shepperton, Middlesex, close to the Shepperton Station, on TUESDAY, December 16, at 12 o'Clock, the whole of the STOCK in TRADE, consisting of the entire Stocks of two New ROSES, Lady Henry Grosvenor and Capt. Hayward, neither yet in commerce; 2-year-old Seed Plants, H.P. varieties, 2000 Seedling Tea Roses, 200 ditto English Teas, 350 Seedling Roses not yet sent out, 3500 Tea Roses in pots, comprising Lady Mary Fitzwilliam, Princess Beatrice, Baroness Rothschild, Perle du Jardin, and others; 3000 dwarf Roses, of the best sorts; 5000 dwarf Roses, in dormant bud; 3000 Manetti Stocks; 5000 STRAWBERRIES, in pots. Also the Utensils in Trade, several Sets of HARNESS, CART, 300 casts of FLOWER-POTS, Stack of HAY, PLOUGH, HARROWS, Alderney COW, two HEIFERS, 60 head of POULTRY, and other effects.

May be viewed two days prior to Sale. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Twickenham.

Re W. GORDON in BANKRUPTCY. ABSOLUTE CLEARANCE SALE.

Important to Nurserymen, Lily Growers, and others.

MESSRS. PROTHEROE AND MORRIS are instructed by the Official Receiver to SELL by AUCTION, on the Premises, The Wellington Road Nursery, and the Nursery, Staines Road, Twickenham, Middlesex, close to the Fulwell Station, L. S. W. Ry., on WEDNESDAY, December 17, at 12 o'Clock precisely, without reserve, the whole of the choice GREENHOUSE PLANTS, Indian Azaleas, large white and other Camellias, 500 Calla æthiopica, Established ORCHIDS, consisting of large quantities of Cattleyas, Dendrobiums, Cypripediums, and others; HERBACEOUS PLANTS, in great variety, including 1500 Japanese Iris, probably the finest collection in the country; a large quantity of TREE and HERBACEOUS PÆONIES, Japanese MAPLES, an extensive assortment of English-grown LILIES, 2000 Imported LILIUM AURATUM, 1000 old English CLOVES, in pots; named RHODODENDRONS, the Stock of several new Japanese CHRYSANTHEMUMS, not yet in commerce; also the Erections of 8 GREENHOUSES, 1000 feet of Hot-water Piping, Slate Slab Staging, old Bricks, several loose Lights and Frames, a Small Lathe, 20 tons of Orchid Peat, Garden-pots, and other Sundries.

May be viewed the day prior to the Sale. Catalogues obtained on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B.—The beneficial interest in the Leases of the respective Nurseries will be offered on the Premises prior to the Disposal of the Stock.

MESSRS. POPE AND SONS have a good demand at their SALES (TUESDAYS and FRIDAYS) for CHRISTMAS TREES, from 3 feet upwards, either with roots or without. Auction Rooms, 6, Phillips Street, Birmingham.

Tuesday Next, December 9.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, December 9, at half-past 12 o'Clock precisely, immense importations of LILIES, just received direct from Japan, in splendid condition, comprising 20,000 extra-fine Bulbs of Lilium auratum, L. speciosum album and rubrum, 5000 L. longiflorum eximeum, L. elegans incomparabilis, L. Leitchlini, &c.; 10,000 White Roman HYACINTHS, 5000 South African TUBEROSES and AMARYLLIS, 15,000 fine Berlin Crowns of LILY OF THE VALLEY, SPIRÆA JAPONICA, 10,000 GLADIOLI, DAFFODILS, CHIONODOXAS, ANEMONES, HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, and other DUTCH BULBS.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

500 choice named Standard and Dwarf ROSES, including many of the best sorts, from a well-known English grower; Pyramids, Standard, and Dwarf-trained FRUIT TREES, comprising, Apples, Pears, Plums, Nectarines, Peaches, &c. Also BORDER PLANTS, consisting of Carnations, Picotees, Pinks, &c.; SPIRÆA JAPONICA, in large quantity; 10,000 GLADIOLI, LILY OF THE VALLEY Crowns and Clumps, LILIUMS, HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, SNOWDROPS, and other Dutch BULBS.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, December 10 and 13, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Thursday Next, December 11.

MILTONIA SPECTABILIS MORELIANA.
ONCIDIUM CURTUM.
LÆLIA PURPURATA.

MR. J. C. STEVENS has received instructions from Messrs. Charlesworth, Shuttleworth & Co., to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 11, at half-past 12 precisely, a large Consignment of CHOICE ORDHIDS, just received, and consisting of Lælia purpurata, Cattleya intermedia, Miltonia spectabilis Moreliana, Oncidium curtum, Zygopetalum Gautheiri, Oncidium dasytile, Sophronitis grandiflora, Oncidium crispum, Colax jugosus, Oncidium Forbesi, O. concolor, &c. All the plants are in beautiful condition, and sure to give satisfaction to buyers.

On view morning of Sale, and Catalogues had,

Thursday Next.

A fine lot of ESTABLISHED ORCHIDS, chiefly in Flower and Bud, including many rare species and choice varieties; a consignment of CYPRIPEDIUM SPECTABILE, just received in splendid order, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 11.

On view morning of Sale, and Catalogues had.

December 8, 9, 10, 12, and 13.

GREAT NURSERY SALE.

Highly important 5 days' unreserved Sale of beautifully-grown NURSERY STOCK. Must be cleared off.

MR. JOHN OAKS ASH has been favoured with instructions from Messrs. Isaac Matthews & Son, the Old-established Wetley Moor and Milton, late Oaks and Bagnall Nurseries, near Stoke-upon-Trent, to offer for SALE by AUCTION, over 250,000 RHODODENDRONS in variety, large quantity of all the leading EVERGREENS, and other flowering SHRUBS, and Ornamental deciduous TREES, Larch, Scotch Spruce, Alders, Birch, Elm, Oak, Mountain Ash, Hornbeam, Poplars, and all other sorts of Trees for forest planting; quantity of Roses, Fruit Trees, and large quantity of extra strong Thorns, Evergreen Privet, Oval-leaf Privet, Hollies, Aucubas, Box, Portugal and Common Laurels, all clean, well-rooted, well furnished trees. The above are extremely hardy, and all have been recently transplanted.

The whole of the Lots offered for Sale will be on view one week prior to the sale. Catalogues may be had one week prior to the sale, on application. Luncheon each day at 10 o'Clock. Sale at 11 o'Clock prompt. Frequent trains from all parts to Stoke, on the main line. Cabs can be had at this station if required to convey those who wish to the Sale Grounds. Frequent trains to Milton, on the Biddulph and Leek Branch. All trains will be met by a conveyance to take purchasers to the above grounds. Purchasers are particularly requested to come early. The Nurseries, Milton, Stoke-on-Trent, Staffordshire.

Reading, Berks.

To Seedsmen, Market Gardeners, Farmers, and Others.

MR. JOHN MILLER has received instructions from Mr. Walter Parsons, who has purchased of the Trustee in Bankruptcy the Goodwill and entire Stock-in-Trade of the Business of Messrs. Oakshott & Millard, Home and Export Seedsmen, to SELL by AUCTION, on the Premises, at Blagrave Street, Reading, on TUESDAY, December 9, and following day, at 10 for 11 o'Clock precisely each day, a large portion of the valuable STOCK OF SEEDS, including—in the Agricultural Department: Mangels, Swedes, Turnips, Cabbage, Grasses (Rye and Natural), and Clovers of sorts. In the Vegetable and Flower Department: Cabbage, Broccoli, Savoy, Cauliflower, Carrot, Beet, Brussels Sprouts, Onion, &c., and a large collection of the choicest kinds of Flower Seeds.

Together with the superior Appointments of Principals and Clerks' Offices, comprising Cylinder and Leg Writing Tables, Private Office Furniture, Clerks' Desks, Chairs and Stools, Book Cases, costly Show Cases and Stands, Pigeon-Holes and Side Fittings, Iron Safe, Counters, Bins, Nests of Drawers, and other items. The Seed-room Fittings, amongst which are Platform Weighing-machines, sets of Measures, Scales, Sieves, Scoops, Clover-dresser and Elevator (by Cooch), two Double Corn-screens (by Coleman & Morton), the complete Stands and Fittings for Agricultural Shows, and packing-cases for same, the whole in perfect condition, as used at the Royal Agricultural Society's Meetings (photograph may be seen at the Premises); also two useful HORSES, Harness, a newly-built Spring Van, two capital Dog Carts, Business Cart, and numerous Yard and Stable Utensils, and miscellaneous effects.

N.B.—Mr. Parsons has decided to carry on the Seed Corn Trade as usual at his own premises, adjoining those lately occupied by the Bankrupts.

N.B.—The order of Sale will be: on Tuesday, Dec. 9, the Stock of Seeds; on Wednesday, Dec. 10, the Working Plant.

May be viewed and Catalogues obtained four days prior to Sale on application at the Place of Sale, or at the Auctioneer's Offices, 37 and 38, Market Place, Reading.

TO BE SOLD CHEAP, ten years' LEASE of about 4 acres of good GARDEN GROUND, on which are four well-built Glasshouses, each 100 feet long, heated and stocked, and large potting sheds. Twelve miles from London; adjoining railway Station.

Apply, J. SIDERFIN, Abbey Wood, Kent.

FOR SALE, as a going concern, NURSERY and SEED BUSINESS (old-established).—For full particulars, apply, W. BENNETT, Accountant, Burton-on-Trent.

FOR DISPOSAL, a NURSERY and SEEDSMAN'S BUSINESS, in a Borough Town in Essex. It embraces a respectable House, Shop 26 by 16 feet, close to the Market-place. The Nursery Grounds, near, contain not quite 2 acres. Incoming for Stock, Glass Houses, Fixtures, and Utensils, £250. House rent £30. Nursery ground £5 5s. Owner going abroad.

Address, S. X., Messrs. Dawson & Sons, 121, Cannon Street, E.C.

TO BE SOLD, as a Going Concern, 7 Miles from Covent Garden, a MARKET NURSERY, seven Span Houses, 80 feet long, on Acre of Land. Ninety years' lease.

For particulars apply to FLORIST, 207, Belsize Road, Kilburn, N.W.

To Florists and Market Gardeners.

TO LET, on Lease, near Southall Station, about 16 Acres of highly productive GARDEN, well stocked with Fruit Trees and Rose Busher, and having a run of 800 feet of Glass, part of which will have to be taken at a valuation. Good Dwelling-house and 2 Cottages. Increasing home trade in Cut Flowers. Fifteen Acres of Meadow can be had if required.

Apply to R. W. WILD, Auctioneer, Heston, Hounslow.

Important Notice.

TO NURSERYMEN, FLORISTS, and SEEDSMEN.

TO LET, an Old-Established BUSINESS, situate in the finest position in the county. Close to the famous market town of Chippenham, with about 6 acres of splendid Land well filled with a general assortment of Nursery Stock.

Apply, GEORGE HATHAWAY, Churn Manufacturer, Chippenham.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

Landscape Gardening.

B. MALLER AND SONS are prepared to Furnish Plans for, and to carry out all kinds of above work. Burnt Ash Lane Nurseries, Lee, S.E.

Landscape Gardening.

MR. ARTHUR M. KETTLEWELL, LANDSCAPE GARDENER, having great experience in all matters pertaining to the artistic arrangement or re-arrangement of Grounds, IS READY TO UNDERTAKE the Designing and Laying-out of Private or Public Gardens, Parks, Cemeteries, &c. Send for his Manual on the "Art of Landscape Gardening," excellently reviewed by nearly all the leading Gardening Papers, post-free, 7*d*.

Address, Titley House, Titley (R.S.O.), Herefordshire.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

NEW DESCRIPTIVE PRICED CATALOGUE

Post-free on application to

THE VINEYARD AND NURSERIES,

GARSTON, near LIVERPOOL.

ORCHIDS.

BRAZILIAN ORCHIDS supplied to the Trade in large or small quantities.

CATALOGUES and particulars on application.

A. H. GRIMSDITCH (Importer), 5, Clayton Square, Liverpool.

Sole Agent for CARLOS TRAVASSOS, Rio de Janeiro.

TRANSPLANTED FOREST TREES, &c.—Good and Healthy Stock of Alder, Ash, Beech, Birch, Chestnut, Elm, Golden Elder, Hazel, Oak, Austrian Pine, Scotch Spruce, and Silver Firs; also many thousands Strong Thorns and Hornbeam, at very low prices.

Samples on application.

JOS. TREMBLE AND SON, The Nurseries, Penrith.

FOREST TREES, &c.—Alder, 2 feet, 16*s*. per 1000. Ash, 1½ to 2 feet, 14*s*. per 1000; 2 to 3 feet, 17*s*. per 1000; 3 to 4 feet, 22*s*. per 1000. Beech, 2 feet, 16*s*. per 1000; 2½ to 3 feet, 24*s*. per 1000; 4 to 5 feet, 4*s*. per 100. Spanish Chestnuts, 1½ to 2 feet, 16*s*. per 1000; 3 to 4 feet, 22*s*. per 1000; 4 to 5 feet, 30*s*. per 1000. Larch, 1½ to 2 feet, 17*s*. per 1000; 2 to 2½ feet, 24*s*. per 1000; 3 to 3½ feet, 28*s*. per 1000. Spruce Fir, 1 to 1½ feet, 12*s*. per 1000; 1½ to 2 feet, 14*s*. per 1000; 2 to 2½ feet, 16*s*. Scotch Fir, 2 years, 2 years transplanted, 16*s*. per 1000. Silver Fir, 1 to 1½ feet, 17*s*. per 1000. Hazels, 2 feet, 20*s*. per 1000. Hornbeam, 2 feet, 16*s*. per 1000. Oaks, 2 feet, fine, 16*s*. per 1000; 2½ to 3 feet, 20*s*. per 1000. Sycamore, 1 to 2 feet, 12*s*. per 1000; 2 to 2½ feet, 16*s*. per 1000; 4 to 5 feet, 30*s*. per 1000. Thorns, 1 to 1½ feet, 9*s*. per 1000; 1½ to 2 feet, 11*s*. per 1000; 2 to 2½ feet, 13*s*. per 1000; 2 to 3 feet, 15*s*. per 1000; 3 to 4 feet, 18*s*. per 1000.

GARLIES MITCHELL, Nurseryman, Stranraer.

HARDY AZALEAS.—A selection of the most beautiful, many of which were raised in this Nursery, well furnished plants, covered with buds, from 1½ to 3 feet high.

AZALEA MOLLIS.—Very fine plants up to 2½ feet, well budded.

AZALEA OCCIDENTALIS × MOLLIS.—White, with lemon blotch—very beautiful, offered for the first time.

ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

The Best Present for a Gardener.

VINES and VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published. New Edition.

Price 5*s*., post-free 5*s*. 6*d*.

A. F. BARRON, Royal Horticultural Society, Chiswick.





For Market and Private Growers.

ORNAMENTAL TREES, SHRUBS, ETC.

Descriptive CATALOGUES Post-free.

J. CHEAL & SONS Crawley, Sussex.





CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6*s*. per bushel (1*s*. extra per bushel for package), or 6*d*. per cake; free by parcel post, 1*s*.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON, Nurserymen and Seed Merchants, Highgate Nurseries, N.

HARDILY-GROWN

FRUIT TREES

TRUE TO NAME: LARGEST STOCK IN THE KINGDOM, Including all the most Popular and Profitable Kinds in Cultivation.

Descriptive Priced List Free on application.

DICKSONS The Nurseries, **CHESTER** (Limited).

BASON'S WONDERFUL "NEW MILL-TRACK" MUSHROOM SPAWN

is the best, and has achieved more success than any other Spawn in the world, *vide* Press Notices and recent Testimonials, *with dates*, from leading authorities throughout the Kingdom. Price, 6*s*. per bushel of sixteen cakes, the largest ever offered (*cases and packing free*).

Testimonial from Mr. J. W. KIRK, *Gardener to the* Right Hon. Lord Selborne. *Blackmoor, Petersfield, Hants, Nov. 22,* 1890:—"I have a grand crop of splendid Mushrooms from your 'New Milltrack' Spawn. The beds are quite a picture. I cut in exactly 5 weeks from time of spawning. The Mushrooms are of excellent quality. I may say I have grown Mushrooms a number of years with success, *but yours is certainly the best Spawn I ever used.*"

Sole Proprietor and only Manufacturer of the "New Milltrack" Mushroom Spawn for Home and Export, WILLIAM DD. BASON, 25, Victoria Buildings, Wolverhampton.

MANUFACTORIES—Tempest Street; Town Wells Fold; and Finchfield, Wolverhampton.

BIRMINGHAM CHRYSANTHEMUM SHOW

WILL BE HELD

NOVEMBER 11 and 12, 1891.

The same Liberal Prizes for GROUPS of CUT BLOOMS and GRAPES will be offered as at the late Show. All other Prizes equally liberal.

Schedules will be issued in due course.

J. HUGHES, Secretary.

LONDON ROAD CAR COMPANY (Lim.).—TENDERS ARE INVITED for REMOVING THE MANURE from the various Stables of the Company, from January 1 to December 31, 1891. Tenders to be addressed to the SECRETARY, marked "Tender for Removing Manure," from whom full particulars may be obtained, and lodged, not later than Saturday the 13th instant.

9, Grosvenor Road, Westminster, S.W.

December 2, 1890.

FERNS! FERNS!! FERNS!!!—Cheap Trade offer in 25 most saleable sorts, stove and greenhouse, 12*s*. per 100; from stores, 6*s*. per 100, 50*s*. per 1000. Terra-cotta Baskets, 2*s*. doz.; Stumps and Vases, 1*s*. 6*d*. doz., for showhouse, bazaars, &c., packed free. Cash with order.

J. SMITH, London Fern Nursery, Loughboro' Junction, S.W.

For Sale.—Extra-sized bearing Peach Trees, from Walls.

W. ICETON has a few very fine well-balanced, fibrously-rooted Trees to offer, reasonable, viz., Royal George, Half-Standards and Dwarf-trained; Noblesse, Alexander Noblesse, Hale's Early, and other varieties, from 6 to 15 feet through. Prices on application.

Putney Park Lane, S.W.

CAUTION. CAUTION.

DEVERILL'S PEDIGREE STOCKS OF ONIONS.

The New Seed of my "AILSA CRAIG" ONION, as also "ANGLO SPANISH," "ROUSHAM PARK HERO," "IMPROVED WROXTON," and my other kinds harvested in 1890, is now ready for distribution, and is only to be obtained TRUE in my Sealed Packets. Most of the varieties may be had from the principal Seed Firms, but none is Genuine unless offered in my Sealed Packets.

A Special Descriptive Onion List, giving the cultivation of the Onion, and particulars of Onion Prizes, value £15, to be awarded at Banbury in September next, may be had gratis and post-free.

Mr. G. H. COPP, *Holmest Park Gardens, Dorsetshire*:—"September 5th, 1890.

"Please send me a Packet of your 'Ailsa Craig' Onion Seed. Send it true, as last spring I was supplied by Messrs. —— with what turned out utterly worthless."

H. DEVERILL,

ROYAL SEED ESTABLISHMENT,

BANBURY.

Come and See.

OUR CHRYSANTHEMUMS, occupying Five Houses, 100 feet each in length, both Plants and Cuttings, for immediate sale also our PRIMULAS, Seven Houses, 100 feet each; and our ZONAL PELARGONIUMS, Six Houses, 100 feet each; and other Nursery Stock. The greatest expert will say:—"Nothing to equal these has ever yet been seen." Next Tuesday, the 9th inst., at the Drill Hall, we hope to show the superiority of our pure country-grown plants, and make such an exhibit of Zonal Pelargoniums as never before displayed in December.

Send for our New and Specially Revised lovely Illustrated CHRYSANTHEMUM CATALOGUE, faithfully describing all the coming important kinds, together with all the best older varieties, post-free.

H. CANNELL & SONS,

SWANLEY, KENT.

SPECIAL TRADE OFFER.

THE FIRST ARRIVAL.

LILIUM AURATUM.—Just arrived, in grand solid condition. Extra strong bulbs, measuring 9 inches, 5*s.* 6*d.* per dozen; ditto, measuring 10 to 11 in., 8*s.* per dozen, 42*s.* and 55*s.* per 100.

JAPANESE LILIUM LONGIFLORUM, large bulbs, for early forcing, 3*s.* per dozen, 16*s.* per 100.

LILIUM SPECIOSUM ALBUM KRAETZERI, extra fine bulbs, 8*s.* per dozen.

☞ **All Orders Packing and Cases Free.** ☜

Order early—All Orders taken in rotation.

W. H. HUDSON, Direct Japanese Importer, 199, High Road, Kilburn, London, N.W.

Address for Telegrams, "AURATUMS, London." Established in 1877.

FRUIT TREES A SPECIALTY

STRAWBERRIES.—One of the best collections in the Trade, including Noble, and all the best and newest varieties. Descriptive List on application.

FRUIT TREES.—Apples, Pears, Plums, Bush Fruits, and all kinds of hardy fruit trees. New and rare sorts not obtainable elsewhere. Special quotations for market varieties in quantity. Catalogues free. Descriptive List, one of the most complete in the Trade, giving much valuable information, 6*d.*

CABBAGE PLANTS.—Leading garden or field varieties, very cheap, in quantities.

JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford.

THOMAS PERKINS AND SONS,
34, Drapery, Northampton,
Have a large Stock of the following, well-grown, and good Roots:—

ASH, common, 2 to 3, 3 to 4, and 4 to 5 feet.
ALDER, 2 to 3, and 3 to 4 feet.
BEECH, 2 to 3, and 3 to 4 feet.
BIRCH, 2 to 3, and 3 to 4 feet.
BLACKTHORN, per sample.
BROOM, white, 2 to 3 feet.
DOGWOOD, red. 2 to 3 feet.
CHESTNUT, Horse, common, stout for avenues.
FIR, Larch, 1½ to 2, 2 to 3, and 3 to 4 feet.
,, Scotch, 1 to 1½, and 1½ to 2 feet.
GORSE, common, transplanted and seedling.
HAZEL, 2 to 3, and 3 to 4 feet.
HORNBEAM, 2 to 3, and 3 to 4 feet.
LABURNUMS, 5 to 6, and 6 to 8 feet.
LIMES, 6 to 8, 8 to 10, and 10 to 12 feet.
PINUS AUSTRIACA, 1½ to 2, and 2 to 3 feet.
,, LARICIO, 1½ to 2 feet.
POPLARS, Black Italian, fine, 10 to 12 feet.
,, Balsam, 6 to 8, and 8 to 10 feet.
,, Ontario, 10 to 12 feet.
PRIVET, Evergreen, fine, 2 to 3, and 3 to 4 feet.
PRUNUS MYROBALANA, 2 to 3 feet.
SWEET BRIAR, 2 to 3, and 3 to 4 feet.
SYCAMORE, common, 3 to 4, and 4 to 5 feet.
WHITETHORN or QUICK, the largest stock in Great Britain.
ARBOR-VITÆ, American, 2 to 3, and 3 to 4 feet.
BOX, broad leaf green, 1 to 2 feet.
COTONEASTER SIMMONDSII, 3 to 4 feet.
LAURELS, Caucasica, 1½ to 2, 2 to 2½, and 3 to 4 feet.
,, rotundifolia, 1½ to 2, 2 to 2½, and 3 to 4 feet.
,, latifolia, 2 to 3, and 3 to 4 feet.
,, Portugal, fine, 2 to 3 feet.
THUJA Lobbii, 4 to 5 feet.
YEWS, English, the largest stock in Great Britain.
,, Irish, 2 to 3, and 3 to 4 feet.
IVIES, Irish very fine, 4 to 5 feet.
JESAMINES, white, in pots.
Very many other articles in large quantities.
CATALOGUES, and SPECIAL PRICES given.
Extent of Kingsthorpe Nurseries, 100 acres.
TELEGRAMS. — "PARAGON, Northampton."

Many Acres of Lilies of the Valley!

T. JANNOCH, Largest Grower of LILIES OF THE VALLEY in the Kingdom, offers 3-yr. old flowering Crowns for forcing, and 2 and 1-yr. old Crowns for planting out, of unsurpassed quality. Hundreds of testimonials. Time of sending out, November 1 to May 1. Prices and terms on application.

T. JANNOCH (Lily of the Valley Grower by special appointment to H.R.H. the Prince of Wales), Dersingham, King's Lynn, Norfolk.

SMALL SHRUBS.—Sweet Bays, 3-yrs, 4*s.* per 100; C. macrocarpa, 8 to 10 inch, 60*s.* per 1000; Erecta viridis, 6 to 8 inch, 50*s.* per 1000; do, 8 to 12 inch, 80*s.* per 1000; C. Allionii, 1 foot, 12*s.* per 100; Cotoneaster Simonsii, 1 foot, 40*s.* per 1000; Cedrus atlantica, 2-yrs., 6*s.* per 100; C. deodara, 1-yr., 7*s.* per 100; Escallonea macrantha, 9 to 12 inch, 10*s.* per 100; Pinus cembra, 3-yrs., 30*s.* per 1000; P. insignis, transplanted, 9 to 10 inch, 60*s.* per 1000; P. excelsa, 2-yrs., 4*s.* per 100; P. Nordmannia, 2-yrs., 4*s.* per 100; P. nobilis, 2-yrs., 6*s.* per 100; Oaks, evergreen, 2-yrs., 9 inch, 60*s.* per 1000; Oaks, scarlet, 2-yrs., 2*s.* per 100; Retinospera plumosa, 6 inch, 40*s.* per 1000; 2 years transplanted, 8 inch, 80*s.* per 1000; R. squarrosa, 6 inch, 40*s.* per 1000; 8-inch, 80*s.* per 1000; Rhododendron ponticum, 3-yrs., 25*s.* per 1000; 4 to 6 inch, 40*s.* per 1000; 6 to 9 inch, 60*s.* per 1000. Stocks, clean, 90*s.* per 1000; Thuia Lobbii, 10 inch, 45*s.* per 1000; 15 inch, 60*s.* per 1000. English Yew, 1-yr., 25*s.* per 1000; 6 to 8 inch, 80*s.* per 1000. Spanish Whin, 6 inch, 6*s.* per 100.

GARLIES MITCHELL, Nurseryman, Stranraer.

ASPARAGUS, 5-yrs. old for forcing, grand roots, 7*s.* 6*d.* per 100; 3-yrs. old for planting, 25*s.* per 1000. Cash with order. My Asparagus always makes top price at Covent Garden.

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No. 1, 4 to 6 inches in circumference, £2 per 1,000.
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ROBERT BUIST, JR.,
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A FIRST-EARLY WRINKLED MARROW,
of finest flavour, and very productive.

THE NOVELTY OF THE SEASON.

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QUEEN'S SEEDSMEN, EXETER.
AND ALL THE PRINCIPAL WHOLESALE SEEDSMEN.

2*s.* 6*d.* *per Packet* (½-*pint*). *Trade Price on application.*

TRANSPLANTED
FOREST TREES.

Good stock of ASH, ALDER, BEECH, BIRCH, HAZEL, CHESTNUT, LARCH, 2, 3, to 4 feet, well transplanted.

QUICK.—Special offer can be given for these, having an overstock.

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Strong Roots, 4*s.* per 100. Plants in small pots, 16*s.* per 100; ditto in large pots, 25*s.* per 100. Descriptive LIST free.

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FINE STRONG BULBS, fresh imported, 6*s.* per dozen, 40*s.* per 100.
EXTRA FINE BULBS, splendid value, 9*s.* per dozen, 63*s.* per 100.

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FRUIT TREES—FRUIT TREES.

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Offer, of good quality, and will esteem favour of Orders:—

APPLES.—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed, Pyramids, Standards.
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DAMSONS FARLEIGH PROLIFIC.—Dwarf Maidens, Pyramids, Standards.
PEACHES and NECTARINES.—Dwarf Maidens, Dwarf Trained, Standards, Standard Trained.

Quantity Large.—Quality Good.—Prices Moderate.

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Home-grown Bulbs, own saved seed from their best varieties, fine Bulbs that bore from 6 to 12 flowers each this summer, 6*s.* to 9*s.* per dozen.

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Have a large stock of the undermentioned ORNAMENTAL, STANDARD, and FOREST TREES, EVERGREENS, CONIFERÆ, &c., to offer, at very reasonable prices. An inspection of the stock is invited. CATALOGUES free, by post.

Norway MAPLE, 8 to 10, and 10 to 12 feet.
ELMS, English and Scotch, 8 to 10 feet.
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POPLAR, Canadensis nova, Black Italian, &c., 6 to 8, 8 to 10, and 10 to 12 feet.
ALDER, 8 to 10, and 10 to 12 feet.
OAKS, English, 6 to 8 feet.
Mountain ASH, 6 to 7, and 7 to 8 feet.
LIMES, SYCAMORE, CHESTNUT, and FLOWERING TREES, in great variety.
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CUPRESSUS LAWSONIANA.
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RHODODENDRONS, ponticum, hybridum, and best named varieties.
PICEA NORDMANNIANA, fine specimen plants, 3 to 4, 4 to 5, and 5 to 6 feet.
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SCOTCH FIR, 2 to 2½, 2½ to 3, 3 to 4, and 4 to 6 feet.
Also a large stock of ABIES of sorts.
CYPRESS, RETINOSPORAS, CRYPTOMERIA, THUIOPSIS, YEWS, HOLLIES, and FLOWERING SHRUBS, in great variety.

FOR PLEASURE AND PROFIT.

FRUIT. Nothing so profitable and easy to grow. 74 Acres in stock.

See CATALOGUE for simple Instructions and kinds of Trees to suit all soils.

ROSES. 20 Acres. Bushes, 8*s.* per dozen; 60*s.* per 100. STANDARDS, our selection, 21*s.* per dozen, 140*s.* per 100.

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ROSES IN POTS, from 15*s.* per dozen.

ORNAMENTAL TREES, 91 Acres.
4 Acres of Glass.

CLEMATIS (80,000), 12*s.*, 18*s.*, and 24*s.* doz.

SEEDS & BULBS. Vegetable, Flower, and Farm.

Descriptive LISTS free.

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THE CAPETOWN BOTANIC GARDENS Solicits Trade Orders for their Native Bulbs. Delivery in February. Retail Orders for Collections only, up to any given price.

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SELECT NOVELTIES IN FLOWER SEEDS FOR 1891

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Electros of this Block to be had.

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(Chrysanthemum carinatum fl. pl.)

This valuable and most unique Novelty has resulted from carefully hybridising and selecting for several years the semi-double varieties of this useful annual already existing, until a high degree of doubleness has been attained. They are extremely variable, and it is impossible to describe the beautiful forms which have been produced, as conveyed by our engraving. Some are pure white, yellow, or crimson, but the prevailing types are bronzy-yellow, the florets tinged with red; and lilac-rose, the imbricated ray florets beautifully pencilled; others have rich crimson centres with clear yellow guard petals. Although mostly very double, there will still be an occasional semi-double or even single, but these are almost equally charming. The Horticultural Press have given most favourable comments respecting this Novelty—see all the leading Gardening Papers of August 9, 1890. Amongst others the *Journal of Horticulture* gave a full page engraving and complete description of them, whilst the *Gardeners' Chronicle*, *The Garden*, and *The Gardening World*, the latter of August 16, gave most favourable reviews.

At present we offer it in finest mixture of all varieties.

Prices on application.



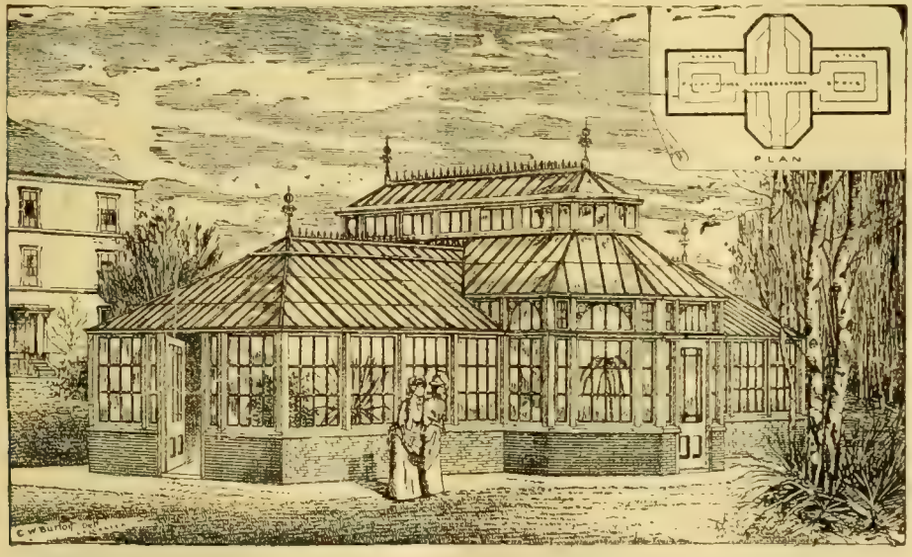
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There is no class of flowers more popular than the various types of Poppy. The present Novelty is a pure white single selection from the ordinary Papaver somniferum, the flowers of large size, and the petals nearly entire at the margin. It will be a great acquisition for cutting purposes, the flowers requiring to be cut as soon as barely expanded, and put in water for a few hours before being taken to market; they will then stand a considerable time.

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GARLIES MITCHELL, Nurseryman, Stranraer.

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NEW HAARLEM BULB WAREHOUSES,
34, Mansell Street, Aldgate, City, London.
Proprietors—MICHAEL RAINS AND CO.
Reg. Tel. Address—"BIOTICUS, London." Established 1856.
CATALOGUE on application.
Named HYACINTHS, 2*s.* 6*d.* per doz. 1st size Bulbs of any sort.

PYRACANTHA LALANDI (Burning Bush), fine plants, 3 to 4 feet, in pots, 12*s.* per doz.
Irish IVIES, in pots, 5 to 6 feet, 12*s.* per doz.; 6 to 8 feet, 18*s.*; 8 to 10 feet, 24*s.*; 10 to 12 feet, 36*s.* per doz.
RHODODENDRONS, beautifully set with buds, named hybrids, 18*s.* and 24*s.* per doz.; seedlings, 6*s.* and 9*s.* per doz.
Descriptive Price LISTS of Plants, Bulbs, Seeds, and all Garden Requisites, free on application.
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WICETON has still a most extensive stock of all the leading varieties suitable for Winter Gardens, House Decorations, &c., and many thousands fit for Table Work. Prices on application.
Putney Park Lane, S.W.; and Stands 129 and 130, Covent Garden, W.C.

QUICK, for Hedges, strong transplanted, 15*s.*, 20*s.*, 25*s.*, and 30*s.* per 1000.
ELMS, English, fine trees for avenues, or singly in parks, 2*s.* 6*d.* each.
EVERGREEN HEDGES.—The best are formed of American Arbor-vitæ, 3 to 4 feet, 12*s.* per dozen; Thuia Lobbii, 12*s.* per dozen; English Yew, 2 to 2½ feet, 9*s.* per dozen.
SEASIDE EVERGREENS.—Austrian Pine, 3 to 3½ feet, 9*s.* per dozen; Arbutus, nice plants, 2½ feet, 12*s.* per doz.; Bays, 12*s.* and 18*s.* per dozen; Euonymus, best green, 4*s.* and 6*s.* per dozen; Evergreen Oaks, in pots, 3 feet, 18*s.* per doz.; Escallonia macrantha, in pots, 9*s.* per doz.
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BULBS.—Special Cheap Offer.—Polyanthus Narciss floribundus, the popular variety from the Scilly Isles, a grand trusser, and forces well, fine bulbs, 8*s.* 6*d.* 100, 1*s.* 6*d.* doz.; Grand Monarques, ditto, fine bulbs, and true, 10*s.* 6*d.* 100, 2*s.* doz.; Grand Soliel d'Or, ditto, very early, 8*s.* 6*d.* 100, 1*s.* 6*d.* doz.; Narciss poeticus, Pheasant's Eye, 1st size, 13*s.* 1000, 2*s.* 100; unsorted sizes, 10*s.* 1000, 1*s.* 6*d.* 100; Narciss biflorus, Twin Narciss, 1st size, 12*s.* 6*d.* 1000, 1*s.* 6*d.* 100; Narciss Double White Gardenia-flowered, 30*s.* 1000, 3*s.* 6*d.* 100; Double Daffodils, Telamonius plenus, 30*s.* 1000, 3*s.* 6*d.* 100; Ixias, beautiful bright scarlet, 30*s.* per 1000, 3*s.* 6*d.* per 100.
Shallots, good sample, sound English, per cwt., 15*s.*
PONTEY'S Wholesale and Retail Bulb and Seed Establishment, Plymouth. (Established nearly a century).

JOHN PERKINS AND SON beg to invite inspection of intending Planters to their large Stock of the following, strong transplanted, and well rooted:—

FOREST TREES.

ASH, 2 to 3 and 3 to 4 feet.
BIRCH, 2 to 3 and 3 to 4 feet.
LARCH FIRS, 2 to 3 and 3 to 4 feet.
SPRUCE FIRS, 1½ to 2 and 2 to 2½ feet.
SCOTCH FIRS, 1½ to 2 feet.
OAKS, English, 2 to 3 and 3 to 4 feet.
PINUS AUSTRIACA, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
" LARICIO, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
SYCAMORE, 2 to 3 and 3 to 4 feet.

Plants for Fox and Game Coverts, Hedges, &c.

BERBERIS AQUIFOLIA, 1 to 1½ and 1½ to 2 feet.
BLACKTHORN, 1½ to 2 and 2 to 3 feet.
COTONEASTER SIMMONSII, 1½ to 2 and 2 to 3 feet.
DOGWOOD, Red, 2 to 3 feet.
HAZEL, 2 to 3 and 3 to 4 feet.
HORNBEAM, 2 to 3 feet.
LAUREL, common, 2 to 3 and 3 to 4 feet.
" caucasica, 2 to 3 and 3 to 4 feet.
" rotundifolia, 2 to 3 and 3 to 4 feet.
" Portugal, 1½ to 2 and 2 to 3 feet.
LAURESTINUS, 1½ to 2 and 2 to 3 feet.
PRIVET, Evergreen, 2 to 3 and 3 to 4 feet.
PRUNUS MYROBALANA, 1½ to 2 and 2 to 3 feet.
ST. JOHN'S WORT, strong transplanted.
SNOWBERRY, 2 to 3, and 3 to 4 feet.
THUJA LOBBII, 2 to 3, and 3 to 4 feet.
English YEWS, 1½ to 2, 2 to 3, and 3 to 4 feet.
QUICK or WHITETHORN, strong, and extra-strong, transplanted; &c., &c.
Special offers, free on application.
The Old-established Nursery and Seed Business,
52, Market Square, Northampton.
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Telegraphic address—"QUICK, Northampton."

ODONTOGLOSSUM CRISPUM ALEXANDRÆ.

BEST (PADRO) VARIETY.

GUILLERMO KALBREYER begs to offer the above well-known and justly-prized Orchid at the following prices, free on board of Royal Mail Company's steamers, at Savanilla:—**£40 per 1000 good and healthy pieces.**

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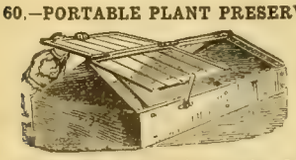
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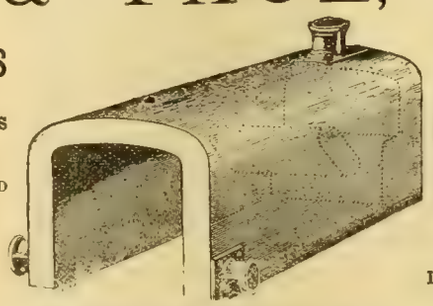


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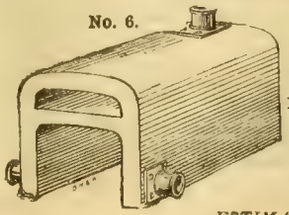
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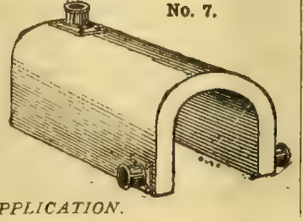
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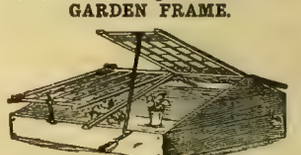
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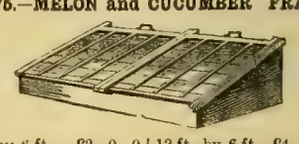
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THE GARDENERS' CHRONICLE,

Vol. VII., Third Series, JAN. to JUNE, 1890.

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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 6, 1890.

BIRNAM AND BUSKETTS.

[SEE SUPPLEMENTARY SHEET.]

THERE is something rather incongruous in the association of Birnam with gardening. The "blasted heath" might be "laid out." Some enterprising builder might (the suggestion is possible), "bid the tree unfix his earth-bound root." Great Birnam Wood might be plotted out as eligible building land. "High Dunsinane Hill" might furnish sites for desirable villa-residences, but all these things would grate on our feelings and shock us by their incongruity.

The view which we now give is taken from St. Mary's Tower, Birnam, the Scottish seat of the Duke of Rutland, to whose kindness we are indebted for permission to publish the illustration, and it shows that those who have had the responsibility of forming the garden have been duly impressed with what Pope and Addison would have called the *genius loci.* While here and there flower-beds have been made, they have been strictly subordinated to the glorious stretches of Heather and Broom, which indeed are pressed into the service as "bedding plants." Scots Firs, of which a fine specimen is shown in the illustration, constitute the wood of Birnam, and existing trees must be descendants of those from which Malcolm enjoined that—

"Every soldier hew him down a bough,
And bear't before him: thereby shall we shadow
The numbers of our host, and make discovery
Err in report of us."

Poor conscience-stricken, "fear-tainted" Macbeth looking on the "moving grove," begins—

"To doubt the equivocation of the fiend
That lies like truth! 'Fear not till Birnam Wood
Do come to Dunsinane,' and now a wood
Comes toward Dunsinane."

Of course, the critical historians of the present

day will throw doubt and discredit on the whole story. What matter? The hill is there, and the wood is there. It does not require any very great stretch of the imagination to be able to bring before the mind's eye all the details of the great tragedy, and we can even sympathise with Macbeth in his declaration that he—

" will not yield
To kiss the ground before young Malcolm's feet,
And to be baited with the rabble's curse,
Though Birnam Wood be come to Dunsinane!"

The view here given formed the subject of a picture by Sir John Millais, which had for title "Winter Fuel," the artist having introduced into the foreground a cart laden with wood. Our illustration is from a photograph by Mr. A. F. Mackenzie.

Busketts, Lyndhurst Road, Hampshire.

A strong contrast between north and south is illustrated in our juxta-position of a garden scene in the New Forest with a similar scene in Scotland.

The residence of Dr. Lawson Tait, built in 1886, in a charming spot in the New Forest, a few miles below Southampton, and is surrounded by a garden in which the true art of the landscape gardener is well displayed, the more modern style of gardening, nearest to the house, being cleverly arranged to harmonise with the rugged beauty of the Pine and Oak forest, with its beautiful undergrowth of Bracken, which forms the chief feature in the estate, and which it would be a pity to mar.

To Mr. R. W. Horsman, of Forest House, Lyndhurst Road, was entrusted the work of laying out, and he has well sustained the reputation gained by many successful works on a larger scale. In getting over the one great difficulty of merging the garden proper into the wild garden bordering the edge of the forest, Mr. Horsman has been particularly happy in diverting and utilising a stream, so that the edge of the wood is fringed by running water. There are little islands here and there, and rustic bridges span the stream at intervals. Thus, on one side of the brook we have the modern garden, with its borders, and bed of richly-coloured herbaceous perennials, its beds of Roses, Iris, Carnations, Gladiolus, Phlox, Tigridia, Pavonia, and other showy flowers; while on the other side of the water, and, gradually merging into the Bracken, Equisetum, and Brambles of the Pine forest, appear perennial Sunflowers, the scarlet Gladiolus Brenchleyensis, tufts of the elegant Eulalia japonica zebrina, clumps of the blue Agapanthus, and, especially at this season, innumerable spikes of the white Hyacinthus candicans, which is a plant particularly well suited for planting in such situations. In this manner the transition from the efforts of Art to the realms of Nature is made in the best possible, because the most natural, manner. Near the house we find a grand specimen of Araucaria imbricata, several of Libocedrus decurrens, *Abies* nobilis, and P. n. glauca; Sequoia gigantea, and several forms of Cupressus Lawsoniana, the most remarkable of which is one of very close and Fern-like character of growth, named C. L. densa. It is very distinct in habit, and very compact, the plant at Busketts being only 4 feet or so in height, although stated to be thirty years old. Rhododendrons thrive well, and many tender plants succeed outdoors.

Planted at the edge of the wood we find many large specimen Azalea indica which have been planted here permanently, and which have evidently flowered well; the Camellia also thrives, and makes good growth; the beds of Azalea mollis, and the specimens of Japanese Maple, have a far more luxuriant growth than is usually seen in British gardens; and a huge specimen of Pampas Grass, planted on top of a rocky mound, will be a magnificent object when its plumes are fully developed. Tritoma Uvaria also assumes gigantic proportions, and is most prolific in the production of its tall showy spikes of bloom—one clump alone must have more than a hundred of them. In fact, all things seem to thrive marvellously well.

Perhaps the most noteworthy feature in the whole garden is the American log-hut, which appears in the forest at the end of a vista (fig. 123, 653). This is a favourite retreat of the Doctor, and it is fitted up with all the requisites for a short stay night or day. Its exterior is most picturesque, built as it is of rough Fir logs, and thatched with Heather, and its sanded floor in the lower part, and cool rough apartments above, into which the grateful fragrance of the Pine forest penetrates, must have a peculiar charm for one who finds such solitude a pleasant relief from the hurry and bustle of ordinary life. Harmonising well with this primitive structure, are a few pieces of furniture in antique carving, but for connoisseurs of such things, the mansion contains an unique collection, much of it unmatchable, and of great value.

In planting, care has been taken that every season has its display of bloom, the Snowdrop, Narcissus, Anemone, and other spring flowers, being followed in unbroken succession by the plants of the season. One great evidence of the purity of the air was observed in the Vacciniums bearing flowers, and perfect red berries, while still persisting, and in sound condition, but of course partially dried, were the fruits of last year, with, in some instances, the remains of those of a still previous year.

Nor has the kitchen garden, and garden under glass, been neglected. A fine range, by Hope, of Birmingham, is devoted to the culture of Grapes, Peaches, Tomatos, Figs, Cucumbers, and Melons, and some of the divisions are fitted for plant culture. In these we found a good show of Pelargoniums, Fuchsias, &c., as well as some specimen Allamandas, Stephanotis, flowering Pancratiums, Amaryllis, a few Orchids, &c.; and adjoining the dwelling is an ornamental conservatory furnished with stately Palms and Tree Ferns. Here the Begonias are well bloomed, and the back wall, which is fitted at the top with two rows of terra-cotta shelving, containing Maidenhair Fern and flowering plants, well exhibit our best conservatory climbers. Clothing the walls and pillars are many pale blue trusses of Plumbago capensis, the white Passiflora (Constance Eliott), Habrothamnus elegans, Abutilon vexillarium variegatum, Heliotropes, Diplacus glutinosus, and other suitable flowers. In fine, the gardens at Busketts were well designed and admirably carried out, in spite of numerous difficulties which the nature of the ground presented.

New or Noteworthy Plants.

HYBRID ANTHURIUMS.*

Hero×.—This new hybrid has been raised by Mr. W. Bull, who kindly sent a specimen to Kew in October last. It is a hybrid between A. Veitchii and A. crystallinum, and from what I have seen of it, appears to be a fine foliage plant, and probably it will attain to the noble proportions of its parents. The dimensions given below are those of the specimen seen, and will probably increase with the age of the plant. *N. E. Brown.*

A. Baron Hruby×.—In the autumn of last year I received from Baron Hruby, of Petschkau, Bohemia, a specimen of an Anthurium, which was stated to be a hybrid between A. Ferrierense and Spathiphyllum floribundum, raised by Mr. Skopec, who had formerly the management of the Aroids cultivated at Vienna by Schott. Naturally I examined the specimen with some interest, but failed to find any resemblance to Spathiphyllum floribundum in it, or the slightest trace of any of the peculiarities of minute structure which Spathiphyllum possesses, and was at first led to think that the plant was a mere seedling variety of A. Ferrierense.

Mr. V. Faus, gardener to Baron Hruby, has kindly sent further material and a living plant to Kew, which I have carefully re-examined, and whilst I find no trace of Spathiphyllum influence, I now certainly believe the plant to be a true hybrid, and not a seedling variety, as I at first thought. There can be no doubt, I think, that its female parent is A. Ferrierense, but its male parentage is not so clear, although the bullation of the leaves, and the tendency of the petioles and scape to be slightly winged, indicate the possibility of A. splendidum or A. Waluievi being the male parent. Let it be what it may, the hybrid resultant is one of considerable merit, and well worth a place with A. Lindeni, A. Ferrierense, A. hybridum, and others of like nature. This new hybrid I propose to call Baron Hruby.

The plant seen was about 18 inches high, with petioles 6 to 12 inches long, terete, with a slightly flattened face, edged with very narrow wings, and occasionally another similar wing or two on the back, green, tinged with dull purple, and speckled with paler. Blade 6 to 14 inches long, 4 to 9 inches broad, cordate, with obtusely-rounded basal lobes, and a sinus 2½ to 4 inches deep between them; the apex is cuspidate-acute. The leaf is concave above, and strongly bullate, bright dark green, paler beneath; in the young leaves the space between the principal veins is of a lighter green. Mid-rib with seven to twelve primary veins on each side, two of them arising at its very base on each side, and all uniting and forming an intramarginal vein about ⅛ inch from the margin; the hind branches of the mid-rib, which go into the hind lobes, are denuded at the sinus for about ½ inch, and is divided into three or four branches, which all run out to the margin without uniting with the intramarginal vein. Scape longer than the petioles, terete, with one to three very narrow wings, dull green. Spathe, 3 inches long, 1½ inch broad, ovate-acuminate, slightly cordate at the base, varying from light carmine-rose to nearly white, horizontally spreading. Spadix terete, 3 inches long, 3½ lines thick, green at first, changing to flesh colour. *N. E. Brown.*

* Anthurium Hero, *new hybrid.*—Petioles 12 to 15 inches long, terete. Blade of the leaf 18 inches long by 10 inches in breadth, peltate, drooping as in A. Veitchii, ovate, cuspidate-acuminate at the apex, and with a narrow basal notch about 1 inch deep; mid-rib and principal veins prominent above, less so beneath; lateral veins about ten on each side, and a stouter one on each side at the very base of the mid-rib, curved (but not backwards as in A. Veitchii), and all uniting into an intramarginal vein about ½ an inch from the margin; in the united hind lobes are two very much arched veins all uniting at their base, and inserted on the top of the petiole in a straight line with the mid-rib; upper surface dark green with a satiny sheen, the nerves being of a light green, making a good contrast; under-surface uniform paler green. Scape longer than the petioles, terete and angular; spathe deflexed, 5 inches long, 1 inch broad, lanceolate-acuminate, very pale pinkish, with well marked green veins. Spadix 4 to 5 inches long, ⅜ of an inch thick, terete, green. *N. E. Brown.*

List of Garden Orchids.

(Continued from p. 242.)

Lælia.

L. pubescens, Lem. = ? L. rubescens.

(26.) L. purpurata, Lindl., in Paxt. *Fl. Gard.* iii. (1852-3), t. 96, also p. 112, with fig.; *Pescatorea*, i., t. 37; *Ill. Hort.* i., p. 54, with fig.; *id.*, iii., t. 83; *Fl. des Serres*, t. 1183; Warn., *Sel. Orch.*, i., t. 40; Jenn., *Orch.*, t. 22; *Gard. Chron.*, 1880, pt. 2, p. 45, fig. 12 (abnormal); *id.*, 1883, pt. 2, pp. 530, 533, with plate; Veitch, *Man. Orch. Pl.*, pt. 2. p. 80, with fig.; *Revue Hort. Belge*, 1888, p. 201, with plate. *Bletia purpurata*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 423. *Cattleya Brysiana*, Lem., *Jard. Fleur.*, iii. (1853), t. 275. *Lælia Casperiana*, Rchb. f., in C. Koch, *Wochenschrift*, ii. (1859), p. 336. *L. Wyattiana*, Rchb. f., in *Gard. Chron.*, 1883, pt. 2, p. 426.—Brazil. Discovered in 1847 in the province of Santa Catherina, in Southern Brazil, by Devos, who sent plants to M. Verschaffelt's horticultural establishment at Ghent. It was also sent in 1850, from the island of Catherina to M. Brys, of Bornhem, near Antwerp, where it flowered the following year, and was soon afterwards described as Cattleya Brysiana. In this country it flowered first with Messrs. Backhouse, of York. L. Casperiana is described as allied to L. purpurata and L. crispa, but judging by a tracing sent by Reichenbach to Lindley, now

in the Herbarium of the latter, I think it may be a somewhat abnormal form of the present species. L. Wyattiana was described as a supposed natural hybrid between L. crispa and L. Boothiana, which appeared in the collection of Mr. G. Nevile Wyatt, at Lake House, Cheltenham; but after examining a flower from the type plant, received through Messrs. Veitch, I can only consider it a variety of L. purpurata. Many varieties of this fine species have been described, as follows:—

Var. alba, *Gard. Chron.*, 1869, p. 561.

Var. atropurpurea, Williams, *Orch. Gr. Man.*, ed. 6, p. 636.

Var. Aurorea, Rchb. f., in *Bonplandia*, iv., p. 328. *Bletia purpurata* var. *Aurorea*, Rchb. f., *Xen. Orch.*, ii, p. 53, *Bull Soc. Tosc di Ortic.*, xi., p. 297, t. 12.

Var. bella, Veitch, *Man. Orch. Pl.*, pt. 2, p. 81.

Var. flenheimensis, Hort., Warn. and Will., *Orch. Alb.*, viii., t. 346.

Var. Brysiana, Hort., Williams, *Orch. Gr. Man.*, ed. 6, p. 366. *Cattleya Brysiana*, Lem., *Jard. Fleur*, iii., t. 275.

Var. Lowiana, Rchb. f., in *Gard. Chron.*, 1887, pt. 1, p. 799.

Var. "Mr. Brooman White's variety," Rchb. f., in *Gard. Chron.*, 1888, pt. 1, p. 681.

Var. Nelsii, Verschaffelt, *Ill. Hort.*, xv. t. 569; *Gard. Chron.*, 1869, p. 136.

Var. pallida, Rchb. f., *Xen. Orch.*, ii., p. 53, in note. *Bletia purpurata*, var. *pallida*, Rchb. f., *l.c.*, p. 53.

Var. prætexta, Rchb. f., in Otto and Dietr., *Alg. Gartenz.*, xxiii., p. 241; *id. Xen. Orch.*, i., p. 175, t. 61. *Bletia purpurata* var. *prætexta*. Rchb. f., in Walp., *Ann. Bot.*, vi., p. 431.

Var. rosea, Regel, *Gartenflora*, xxi., p. 223, t. 730.

Var. Russelliana, Williams, in Warn. and Will., *Orch. Alb.*, vi., t. 269. *L. Russelliana*, Hort., Williams, *Orch. Gr. Man.*, ed. 6, p. 366.

Var. Schrœderi, Rchb. f., in *Gard. Chron.*, 1885. pt. 1, p. 786. *Lælia Schrœderi*, T. Moore, in Warn. and Will., *Orch. Alb.*, i., t. 2.

Var. superba, Veh. *Man. Or. Pl.*, pt. 2, p. 81.

Var. Whiteana, Rchb. f., in *Gard. Chron.*, 1888, pt. 1, p. 681.

Var. Williamsii, Hort, Williams, *Orch. Gr. Man.*, ed. 4, p. 196; Warn. and Will., *Orch. Alb.*, i., tt. 9, 10.

L. Rivieri, Carrière = L. Boothiana.

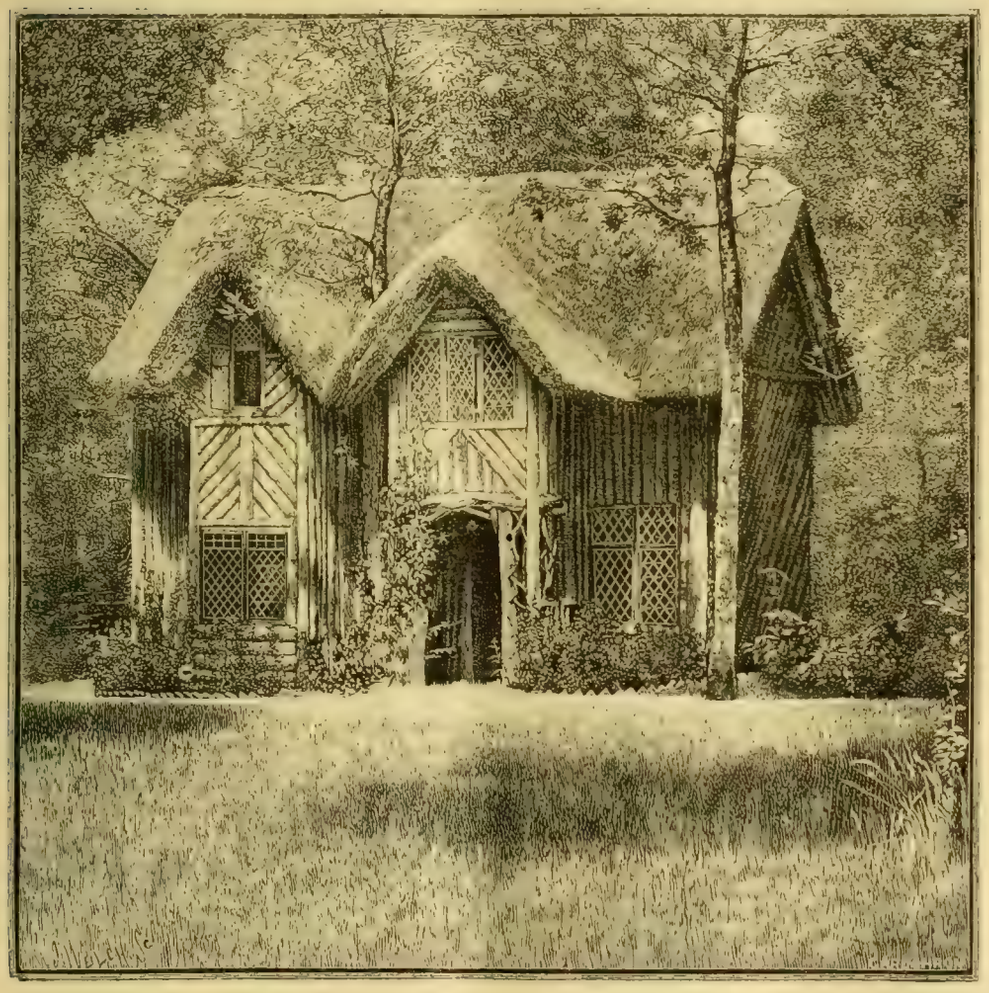


Fig. 124.—BUSBETT'S: THE LOG HUT. (SEE P. 652.)

(27.) L. rubescens, Lindl., *Bot. Reg.*, xxvi. (1840). t. 41; *Fl. des Serres*, t. 742; Veitch, *Man. Orch. Pl.*, pt. 2, p. 81, with fig. *Bletia rubescens*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 425. *Lælia acuminata*, Lindl., *Bot. Reg.*, xxvii. (1841), t. 24; Paxt., *Mag. Bot.*, x., p. 49, with plate; *Fl. des Serres*, t. 742; *Bot. Mag.*, t. 4905. *Bletia acuminata*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 427. *Lælia pedunculatis*, Lindl., *Bot. Reg.*, xxviii. (1842), *Misc.*, p. 9; *id.*, xxxi., t. 69; *Bot. Mag.*, t. 4099; Warn. and Will., *Orch. Alb.*, iv., t. 173. *Bletia pedunculatis*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 426. *Lælia pubescens*, Lem., *Jard. Fleur.*, ii. (1852), *Misc.*, pp 79, 99. *Lælia violacea*, Rchb., f., in *Bonplandia*, ii. (1854), p. 89. *Bletia violacea*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1871), p. 426.—Mexico and Guatemala. A very variable species, if the above are all correctly referred to one and the same, as they are by Messrs. Veitch. Lælia rubescens seems to have been originally imported by Mr. Joseph Knight, of Chelsea, from whom it was purchased by Mr. Barker, of Birmingham. Flowers were sent to Dr. Lindley, in 1840, without any indication of habitat. The original figure shows the peduncle with nine medium-sized flowers. L. acuminata was discovered by Hartweg, in Guatemala, growing on the Calabash tree. Specimens were sent to the Horticultural Society, where they flowered in January, 1841; also in the collection of Sir Charles Lemmon, Bart., at the same time. The Guatemalese are said to call the plant the "Flor de Jesus." Its flowers are larger than in typical L. rubescens, and the lip somewhat different in shape. L. pedunculatis is still larger, and with darker-coloured flowers. It appeared in the collection of Mr. Barker, of Birmingham, at about the same time as the preceding. L. pubescens is said to be from Surinam, but I do not know how it can be distinguished, and therefore suspect some error has been made in the locality. I only know it by description. L. violacea appeared in the collection of Herr Keil, at Leipsic, and is evidently very near typical L. rubescens. The materials at hand are too scanty to decide whether any of the above can be retained as distinct, though I believe not.

(28.) L. rupestris, Lindl., *Bot. Reg.*, xxviii. (1842), sub t. 62. *Bletia rupestris*, Rchb. f., in Walp. *Ann. Bot.*, vi. (1861), p. 431—Brazil. Originally discovered by Gardner, at Lavrinha, at the southern extremity of the Serra, in a hollow surrounded by rocky hills, in company with L. flava, in July, 1840. There is a coloured drawing of the lip in Lindley's Herbarium, labelled "Mr. J. T. Mackay, Trin. Coll., May 26, 1845," from which it is evident that the plant was then in cultivation. In November, 1886, a living flower was sent to Kew by Colonel E. S. Berkeley, for determination, labelled "Lælia from South America." This is the only evidence I have of its being in cultivation at present. It is a very pretty little species.

L. × Schilleriana, Rchb. f. = Lælio-Cattleya × Schilleriana.

L. Schrœderi, T. Moore = L. purpurata var. Schrœderi.

L. × Sedeni, Rchb. f. = Lælio-Cattleya × Sedeni.

L. × Stelzneriana, Rchb. f. = Lælio Cattleya Schilleriana var.

(29.) L. superbiens, Lindl., *Bot. Reg.*, xxvi. (1840), *Misc.*, p. 46; Batem., *Orch. Mex. and Guat.*, t. 38; Paxt., *Mag. Bot.*, xi., p. 97, with plate; *Bot. Mag.*, t. 4090; Hook., *Cent. Orch. Pl.*, t. 23; *Fl. des Serres*, t. 1178; Warn., *Sel. Orch.*, ser. i., t. 20; Warn. and Will., *Orch. Alb.*, vi., t. 244; *Revue Hort.*, 1886. p. 324, with plate. *Bletia superbiens*, Rchb. f., in Walp. *Ann. Bot.*, vi. (1861), p. 418.—Guatemala. First discovered by Mr. Skinner, in 1839, in the village of Sumpango, planted by the Indians in front of their doors; and in the following year in its native habitat in the barrancas, about 20 leagues north of the city of Guatemala. It was sent in 1842 to the Horticultural Society of London, by Hartweg, and flowered for the first time in this country in February, 1844, in the collection of Mrs. Wray, at Oakfield, near Cheltenham. It is a large and magnificent species, and is called by the Indians, "La vara del Señor San José," or "The Wand of St. Joseph." Mr. Skinner saw specimens with flower-stems 4 yards in length, bearing upwards of twenty flowers tha bulbs 22 inches high.

Var. decorata, Rchb. f., in *Gard. Chron.* 1888, pt. 1, p. 200.—A variety with narrow sepals and petals, and dark purple lip, which appeared in Mr. Dorman's collection at Sydenham.

Var. Quesneliana, Hort., Warn. and Will., *Orch. Alb.*, viii., t. 383.—A fine variety, with richly coloured lip and prominent yellow keels, which appeared in the collection of M. Quesnel, of Havre, France.

L. × triophthalma, Rchb. f. = Lælio Cattleya × triophthalma.

L. × Turneri, Warn. = LÆLIO-CATTLEYA × ELEGANS var.

L. × Veitchiana, Rchb. f. = LÆLIO-CATTLEYA × VEITCHIANA.

(30.) L. VIRENS, Lindl., *Bot. Reg.*, XXX. (1844), *Misc.*, p. 1; Rchb. f., in *Gard. Chron.*, 1879. pt. 1, p. 716; Rolfe, *l.c.*, 1888, pt. 1, p. 360.—Brazil. A single flower was sent by Messrs. Loddiges to Dr. Lindley, which was described by the latter in January, 1844. No information was given as to the plant's origin, but the Messrs. Loddiges remark that "it has quite the habit of Cattleya crispa"—*i.e.*, Lælia crispa. Gardner collected a specimen in the Organ Mountains in June, 1837, which has laid undetermined at Kew until a few months ago, when I detected and named it. He notes the flowers as "yellowish-white." This, therefore, supplies the habitat of the species. Sir Charles Strickland sent a raceme to Professor Reichenbach, in February, 1879, from a plant he had bought at Stevens' Rooms, which proved to belong to this species. Professor Reichenbach also remarks that a plant called Lælia virens, Lindl., forming part of an old collection where some of Loddiges' Orchids had been, fell into his hands when visiting the collection of Messrs. Haage & Schmidt, at Erfurt, and that it looked like a small Lælia crispa. Finally a specimen lately came into my hands for determination from the collection of E. C. Ball, Esq., of Fairlight, Hastings, which was said to have been received from Brazil. It is a miniature little Lælia, Gardner's specimen being barely over 6 inches high.

L. Wallisi, Linden, in *Belg. Hort.*, XV. (1865), p. 102, described as a fine species, with the facies of Cattleya Walkeriana, and the flowers of the dimensions of Lælia purpurata; is probably a synonym of Cattleya labiata var. Eldorado. It was collected in the Rio Negro district in Brazil. The sepals and petals are described as whitish-rose, and the lip yellow.

L. × Warneri, Warn. = LÆLIO-CATTLEYA × SCHILLERIANA.

L. × Wyattiana, Rchb. f. = L. PURPURATA.

(31.) L. XANTHINA, Lindl., ex Hook., *Bot. Mag.*, lxxxv. (1859), t. 5144; Batem., *Second Cent. Orch., Pl.*, t. 180; *Fl. des Serres*, t. 2418; Warn. and Will., *Orch. Alb.*, i., t. 23. *Bletia xanthina*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 425.—Brazil. Introduced in 1858, by Messrs. Backhouse, of York, conjecturally from Bahia. It is allied to L. grandis, but has smaller and more yellow flowers.

Var. AGRAPHIS. Rchb. f., in *Gard. Chron.*, 1888, pt. 2, p. 264.—A variety without any purple markings on the lip. *R. A. Rolfe, Herbarium, Kew.*

(To be continued.)

ORNITHOLOGY IN RELATION TO AGRICULTURE AND HORTICULTURE.

(Continued from p. 623.)

THE indictment against the sparrows—at least, against their inordinate numbers in particular localities—is continued by Miss Ormerod, but as the arguments used are such as have already been given, we now call a witness for the defence.

FOR THE DEFENCE.

The very name of the sparrow, his Latin name [domesticus] ought to have secured him from the ignorant persecution he has been exposed to all along, and especially of late. His natural haunt is where men have their home, and if he ever emigrates, it is only to go along with them whithersoever they may direct their steps. The damage, such as it is, which they do to crops, is almost invariably and exclusively confined to those that are grown near to the dwelling-places of men, where there is no corn to speak of, that they can even be accused of pilfering.

It is a pity that persons who know little or nothing of the country life of the sparrow, should at one and the same time act the part of Jury and Judge, and then proceed to condemn him, sentence him, and execute him, on *ex parte* evidence. Those who write without due knowledge on any such matters, seem to make it a rule to forget that much that they claim to have discovered has already been admitted by those on the other side. I, for one, have allowed, and that more than once, that the sparrow does some harm at times, occasionally much harm, but only exceptionally and very locally; my own experience of damage done by him being to that effect. There are not many persons if any, who have had better opportunities than I have had for seeing both sides of the shield in the warfare that has been carried on. Mr. J. H. Gurney (joint author of the book on *The House Sparrow*) begins by telling us of some farmer in Cheshire, who told him that, in his opinion, sparrows and other small birds do damage throughout the whole country to the extent of £770,094 worth of corn in the year. On the face of it, it could be but the merest guess. Nothing could be easier than to make such. Even if we were to grant it, I shall show before I have done that the benefit these birds do, infinitely outweighs any amount of loss of the kind. Furthermore, this said farmer was one of the members of a "Sparrow Club" who gave 6*d.* a dozen—very likely in the breeding season, when the poor things had young in their nests—for so-called sparrow heads, with the result that several thousands of the birds, of whatever kind they were, were sacrificed for this blood-stained head-money. He also tells us that sparrows have a *penchant* for plucking off flowers in our gardens. He argues, as is the wont of such persons, from the particular to the general. There is just a modicum of truth in it. The sparrows have two or three times at the most thus picked off some of the flowers in my garden in the more than thirty years I have been rector here. I never said them nay. At the most, I would just scare them off. Again, he tells us that he has himself found from 20 to 25 grains of corn in a sparrow's crop. Very likely, but when was it? On his own showing, in the month of November, after the harvest, when such are picked up as are lying about on the surface, or on a high road, shaken out from the perhaps over-ripe corn that has been led: or, it may be, already partaken of by the horse; or even in the stackyards after the grain has been thrashed out, and more or less left scattered on the ground. From these most slender premises he argues that every sparrow eats 5475 grains of good corn in the year. He says he understands that the birds work their way through a whole field in regular progression. Out upon such "understanding" as this! flatly contradicted by himself. Also, he tells us that it is said that they prefer a wheat-stack. Very likely, again, if they had the chance; but how is it, that if his knowledge of the ways of the sparrow is so great, he could not tell us such a thing as this of his own knowledge?

One remark of Mr. J. H. Gurney happens to be right. He says that "in some instances," and especially near towns, it is that the greatest damage is done. And again, that this was the case in a field "in the corner nearest to the village;" and that an adjoining acre the birds "had not meddled with." Why, this is the very thing I told him, years ago, in one of my "Letters to the *Times*," which I shall quote, namely, that it is in such spots, and almost exclusively in such, that anything like real damage is done by the birds at all. In such places a "tenter" should be employed to scare them away with a rattle. Once more, he goes on to tell us that the young are fed on "unripe corn." Where, I should like to know, is there any unripe corn to feed them with all the very early spring and early summer months while they are on with one or other of the two or three early broods, or even, it may be, a fourth, afterwards, up to August? Even he, however, here admits, that one young sparrow is fed with fifteen caterpillars in a day. Very well. There are five or six young birds in each nest—say five. This gives seventy-five caterpillars a day for one nest, besides what the parent birds eat. Multiply this by 90, the number of days that may be allowed for the past two or three, not to say four breeds, in, say only three months, and we have 6750 insects with which the broods of one pair of sparrows are fed. Multiply this again by the 3500 sparrows destroyed by only one "Sparrow Club"—perhaps not half the total number in the parish—and this gives us 23,625,000. Multiply this again by the 15,000 parishes in England, and we have a "grand total" 354,375,000,000 insects made away with by sparrows alone in this country. And this, too, only as taken for the young, and leaving out of the calculation all the insects eaten by the parents, or other old birds on their own account. Even Mr. J. H. Gurney, Jun., himself admits the allowing only 800 young sparrows to be hatched in each of the 800 parishes of Norfolk, this gives us a total of 640,000 young, and if these are fed for ninety days, the number that three broods will require to be fed on caterpillars, there would be 4,320,000,000 of them eaten in that one county alone by sparrows. But multiply this by the 117 counties in the United Kingdom, and we have a total of, say, 505,440,000,000. He allows that Professor Newton has stated that he has found their bills "crammed" with a destructive chaffer, and that Mr. John Curtis, the eminent entomologist, "Ruricola" of the *Gardeners' Chronicle* (whom I had the pleasure of knowing), had found them so gorged with them as to be unable to fly. This must have been as food for themselves. He also allows the good the sparrows do in keeping down the seeds of noxious weeds; and he tells us of a farmer who thought his crop was ruined, but that it was visited by "such swarms of sparrows as he had never seen before," and so his crop was saved by them. Likewise that 321 seeds of the Chickweed were found in the crop of one sparrow, and 147 in that of another, and these only a portion of "many more." *Fas est et ab hoste doceri.*

In conclusion, I should like to put in the following evidence, being among that given before a Committee of the House of Commons on the Wild Birds Protection Act, with the Hon. Auberon Herbert, M.P., in the chair. A paper is handed in by Mr. Harting.

1. As regards the fecundity of insects, consult an article by Dr. Gloger, in the *Bulletin of the Society for the Protection of Animals*, vol. vii., p. 322. Example of facts proved: In one single Phlæstribus, an insect which infests the Olive, 2000 eggs were counted. To stop the ravages of another insect, Phalæna monacha, an attempt was made to collect the eggs. In one day, in one single verderie, four bushels, or about 180,000,000 eggs were collected.

2. As regards the depredations of insects, consult a pamphlet by M. Bazin, entitled *Notice on an Insect which has caused the greatest Ravages amongst our Standing Crops*, published in Paris in 1856. See also the *Ami des Sciences*, of August 9, 1857; Baudrillart, *Dictionnaire des Forêts et Insects;* Gadirler, *Police des Chasses*, p. 172; and Tschudi, *Des Insectes et des Oiseaux*, pp. 14 and 15. The following are examples of facts proved and results estimated: (*a.*) The value of cereals destroyed in one year in one of the eastern departments, estimated at 4,000,000 francs (£160,000). (*b*) Out of 504 grains of rape, only 296 grains were healthy; the remainder were eaten up by insects, or injured by their contamination. There was a consequent loss in oil of 32 8 per cent. In a harvest which produced £180, it was necessary to calculate a loss of £108, which, could it have been avoided, would have produced £288. (*c.*) Acres of wood were ordered to be felled, because the trees were perishing from the attacks of insects.

3. As regards the destruction of insects by birds, consult M. Geoffroy St. Hiliare, *Acclimatation des Animaux Utiles*, pp. 122 and 125 (note); Tschudi, *Les Insectes Nuisibles et les Oiseaux*, p. 24; and Dr. Gloger, *op. cit.*, pp. 305, 307. The following are examples of facts proved, and results arrived at:—(*b.*) Under one sparrow's-nest the rejected wing-cases of cockchafers were picked up; they numbered over 1400. Thus, one pair of sparrows had destroyed more than 700 insects to feed a single brood. (*a.*) In the vicinity of Baden a price was set on the head of the sparrow, and soon not a sparrow was to be found in the neighbourhood. It was subsequently discovered that this bird alone could successfully contend against the cockchafers and other winged insects; and the very men who had offered a price for his destruction, offered a still higher price to introduce him again into the country. *Rev. F. O. Morris, M.A.*

(To be continued.)

Foreign Correspondence.

Brussels.—A glance through the well-kept Orchid-houses of M. A. Peeters, Chaussée de Forêt, reveals a very fine array of Odontoglossums, a large quantity of the fine O. grande of the very best type in flower being a leading feature. Among the 4000 other Odontoglossums, too, were some excellent O. crispum, O. Pescatorei, O. Andersonianum, and other natural hybrids. At the side of an intermediate-house were placed specimens of Lælia anceps, having some hundreds of flower-spikes. Of Cattleyas there is a good stock; and a variety of C. gigas with a distinct violet hue over the labellum, seemed to be novel.

In the Cypripedium-house were noted C. vexillarium × and many others in bloom, and coming on under careful nursing was a colony of hybrid Cypripediums. In other houses, plants in flower were noticed of some very brightly-coloured Lælia Perrini, L. autumnalis, and L. pumila, also Trichopilia suavis and T. tortilis; some fine Oncidium sarcodes, O. Forbesii, and O. prætextum; Odontoglossum Harryanum, O. Humeanum, and many O. Rossi majus, Vanda Kimballiana, &c.

Aspidistras, Palms, Cliveas, and other plants for decoration, are well grown by Mr. Peeters, who is one of the leading Belgian nurserymen, and who makes good displays at flower shows.

Madame O. Block.—At her compact establishment at Place Masui, Schaerbeck, Madame Block devotes much space to the cultivation of plants for the decoration of apartments, and in many cases grows them and the Orchids together. Four ranges of span-roof houses contain the Orchids. In the first are Cattleyas and Lælias, amongst the latter, many L. anceps in bud; the second has Odontoglossums arranged with Heaths and Cyclamens; in bloom being Oncidium unguiculatum, and some plants of a very fine form of O. constrictum. The third range had Cypripediums and Vandas, and the fourth Orchids in variety, the centre bed being occupied by handsome plants of Dracæna Massangeana, Pandanus Veitchii, and other fine foliage plants.

The Kentias, Cocos Weddelliana, and other Palms are especially well grown, and the neat appearance of the groups of Ophiopogon Jaburan variegatum, Maranta Massangeana, and other plants with fine foliage, indicated their fitness for the purposes for which they are grown, viz., for the decoration of apartments.

Paris.—On Thursday, November 27, the annual Chrysanthemum exhibition of the National Society of Horticulture of France was opened in its apartments in the Rue de Grenelle in Paris. We saw it the following night, and could form an opinion of the abilities of French growers, and compare things here with what is done in England. The hall, of a good size, was quite filled with Chrysanthemums, and no other plants were to be seen; and, indeed, no space was left, for even the gallery forming the entrance had banks of flowering plants at the sides. As to the cut flowers, there was no comparison with those to be seen in their season at exhibitions in London and elsewhere. Probably none of those shown in Paris, or, at any rate, very few of them, had been grown as single blooms on one stem. The way of staging the flowers on a bed of moss, covered sometimes with leaves, so that the bottles in which the flowers were stuck could not be seen, was perhaps not so stiff as the English method of showing, but not so perfect either. Another style was that of placing together several flowers cut with long stalks in bottles. This, however, will not compare with the beautiful way in which Messrs. Cannell & Sons show their flowers, or with the manner in which the Pompons are often staged in Britain. We should advise the French, who like to show good cut blooms, to go over to England, and study there the methods followed. The plants, too, were here quite different: at the English shows it is generally the cut flowers which form the principal feature; at the continental ones, it is mostly the plants. All the stages around the sides of the hall, and several in the middle, were filled with plants, which, though some were dwarfer than others (this mostly depending on the skill of the growers) agreed in one point, namely, they were naturally grown in nearly all cases. We must not forget to mention, that this year neither plants nor flowers were sent from Roubaix, a town near the Belgian frontier, where the culture of Chrysanthemums has reached excellence of a very high pitch, that is, if one may judge by the photographs, &c., of plants cultivated there, and which appear to come very near to the perfection seen in England. At the Paris show, no such fine large and uniformly-trained specimens were noticed. This is hardly a matter to be regretted, for however valuable such plants may be as showing skill in training, the gardener's time, in my opinion, might be turned to greater advantage. Of plants naturally grown, though generally not well grown, there were hundreds, giving, by the mixing up of their many colours, a very bright though rather confused appearance. Few of the exhibitors employ the system of disbudding, so that all buds are left, with the result that no really fine flowers are produced; if only a moderate number of these were cut away in time, the result would certainly be much more satisfactory.

To name any varieties shown is scarcely necessary, but it may be said that they were very numerous indeed, and some collections were of great extent. The varieties are generally the same as those met with in England; the good ones, at least, are sure to find their way over there. Novelties can only be properly judged when their flowers are grown to a great degree of perfection; any others not showing their characteristics in the best manner. That Chrysanthemums are much employed in Paris is a fact, for in all the flower shops and market-stalls large quantities may be seen, and in many varieties. In many of the large shops on the boulevards and other busy thoroughfares, very nice vases and other devices are to be admired, generally put up with a light hand, and showing much taste.

Another feature, which the Jardin des Plantes has had the honour of introducing, is the way of growing Chrysanthemums out-of-doors. One of the largest—perhaps the most complete, and, at all events, the best and most accurately named collection, is to be found there; and while in other gardens all is bare from the middle of October, there all is bright with colour as in the middle of summer.

The way in which they are grown is very instructive. They are planted in long beds, the different classes together, and in each class as much as possible the colours are kept together. Each variety has an easily seen and read printed label hanging above it. To protect these in the few cold nights of October and November which are generally experienced here, and which are the only ones doing considerable harm to the flowers, wire is stretched above the plants, and when frost may be expected, rough tiffany is spread out over these, which is sufficient to keep the frost from the flowers.

With the exceptionally cold weather which we experienced these last two days, with such a cold piercing north-east wind, such a protection is, of course, insufficient, and, without doubt, all the flowers, and even the leaves are now spoilt. This way of growing them has not yet, or, if so, only on a very small scale, been imitated in other public gardens in Paris. In the same establishment some time ago, several beds were to be found which also made a very nice show at that period of the year. Some were mixed, others of one variety and colour only. Pompons were employed for these, and among Japanese were noticed as especially fine, Madame Desgranges, Sœur Mélanie, and Président Grévy. *H. J. Goemans, Paris, November* 28.

Myoporum parvifolium.—This is a plant which I do not remember ever to have seen about London, either in private gardens or nurseries. In Paris it is frequently seen in late summer, in the markets and in the flower-shops. The plant is covered thickly with small linear, leathery leaves, and with plenty of nice little white flowers it looks very charming. Closely inspected the plants seem to be rather old, probably the reason why they are not grown in London market nurseries. It must be grown as a New Holland plant. In spring and autumn, cuttings of the young shoots may be struck under a bell-glass in sand; afterwards they should be grown on in a mixture of loam and peat with some sand, when they will soon form nice bushy plants. It was figured in the *Botanical Magazine*, t. 1693. *H. J. Goemans, Paris.*

Orchid Notes and Gleanings.

Lælia autumnalis alba.

Few persons have seen this beautiful white Orchid, for which Messrs. J. Veitch & Son received a First-class Certificate at the Royal Horticultural Society last season. At their Royal Exotic Nursery, King's Road, Chelsea, a small batch of it bearing thirteen flower spikes, which between them have twenty-seven flowers, may be seen, and the opportunity should not be lost by those within reach to make themselves acquainted with its charms. One great merit of this new Orchid is that it lasts some six weeks in good condition. Some three dozen species and varieties of Cypripediums, and many other interesting Orchids, are also in bloom here.

Oncidium ornithorhynchum superbum.

The white variety, O. o. album, gives one extreme of this variable species and this one the other, the true form in both cases being extremely rare. A fine branched panicle of the right variety comes from G. O. Sloper, Esq, Westrop House, Highworth; it bears numerous flowers, each of which is 1 inch across, of a rich purplish-lilac, and the warted crest at the base of the labellum bright yellow. It is one of the most elegant and fragrant of the smaller Oncidiums; its flowers are much larger than the ordinary form.

Cypripedium insigne Macfarlanei, *n. var.*

This is an exceedingly beautiful variety, which has just flowered in the collection of R. H. Measures, Esq., of the Woodlands, Streatham. The flowers are of a soft bright yellow, the dorsal sepal with a broad white margin, but quite without the brown blotches so characteristic of this species. The brown markings of the petals and lip also are almost completely obliterated. The change from light green to yellow, which imparts to it such a distinct character, is doubtless owing to the same cause as led to the obliteration of the brown markings. The variation is obviously in the same direction as in the brilliant variety, Sanderæ. Indeed, until I saw the latter, I could not conceive how the two could be so distinct as they were said to be. Now I see they are quite distinct in form; it is the same cause acting on two different forms. In var. Sanderæ the dorsal sepal is nearly half-an-inch broader, and with a larger white area at the apex, the petals nearly a quarter of an inch broader, and the lip and staminode proportionally larger. The bract, on the contrary, is half an inch shorter than in var. Macfarlanei. The direction of the petals is also a little different in the two. Macfarlanei appears to be rather deeper in colour of the two. Both these beautiful varieties flowered in Mr. Measures' collection a short time ago, and the flowers are now being preserved at Kew. *R. A. Rolfe.*

Cattleya Bowringiana.

I observe in your issue of this week a notice of Cattleya Bowringiana, mentioning nineteen flowers as produced on one growth. I beg to say, for the information of your readers, that my original plant presented to me—before Reichenbach described the

species—by Messrs. Jas. Veitch & Sons, had twenty-three perfectly-developed flowers from a single sheath in 1888, as I informed Mr. Rolfe; and in 1889, twenty-four blooms, also from a single sheath. This year this fine plant has made two successive growths (not two leads), each of which is now in flower, the first with fifteen, and the second with twelve blooms. The callus of each, at the base of the pseudobulb, is of enormous size, far larger than any of the imported ones. *John C. Bowring, Forest Farm, Windsor.*

PEACHES AND NECTARINES.

Notwithstanding the many improved varieties of the above fruits, there are persons who are wholly unacquainted with them, and continue to advise the planting of the older varieties, than which the new ones are much better, being of finer appearance and of equally good flavour. I would be understood in these notes to mean fruit grown indoors, unless it should be expressly stated to the contrary. As a rule in my district, the summer is too cool to allow Peaches and Nectarines to come to perfection outside except in very fine seasons, and their cultivation is only attempted in a very small way.

Among Peaches I consider Crimson Galande, taking all points into consideration, to be the finest variety existing at the present time. It is of a very deep crimson colour, rather flat in shape, and of good flavour, although not equal to some others in this respect; it is of a hardy constitution, bears freely, and may be grown up to 12 ozs. in weight. It is a mid-season variety, and if I were confined to one variety this would be my choice. The nearest approach to this variety, all points considered, is Dymond, a distinct and good Peach, which bears a very high character in its Devonshire home for outdoor cultivation; under glass here it is first-rate in flavour, colours well, bears freely, and has enough firmness to pack well. The tree has a good constitution. Dagmar is a very high-coloured Peach, excellent cropper, rather earlier than those already named, and with flesh not so firm, therefore, a less good Peach for market, but its flavour and texture are excellent. The shape is more conical than that of many others, and the tree has not so strong a constitution, but it is still a very useful variety to possess. Prince of Wales is a variety seldom met with, but it is one of the finest Peaches for a cool-house, growing to a large size, first-rate in quality, of good constitution, and a heavy and sure cropper; it is one of the best coloured Peaches that we grow. If forced early, this Peach becomes quite different in all its distinctive features, does not fruit satisfactorily, and very much resembles Barrington under similar conditions; it is, therefore, not a variety advisable to start until February or later. Early Albert is a good forcer, ripening before Royal George under similar treatment; it colours well, is of good flavour, and large in texture. The fruits bear carriage well; the fruit has a nipple on the apex, but not always, which is rather awkward when packing. Stirling Castle is a fine large Peach, ripening soon after Royal George, of capital constitution, a good cropper, of fine colour, and having a flavour resembling that of an Apricot. This Peach originated in Scotland, and seems very little known in the South, but is one of the best. Sea Eagle is one of the finest varieties in regard to appearance, and it is also of good flavour, but is considered by some gardeners to be too large to be good. If forced early, it ripens about twenty-four days after Royal George, and has very little colour; but grown in a cool-house it ripens about September 20, and colours up much better, and under those conditions it is a heavy cropper, and often grows 13 or 14 ounces in weight with but little attention. As it has a firm flesh, it packs well. The Nectarine Peach, so named because raised from a Nectarine stone, ripens soon after Sea Eagle, which it somewhat resembles in size and form, but it is darker, and has flesh of finer grain; it is a good cropper, and the tree is robust. The fruit bears carriage well, and sometimes it has a nipple at the apex. Princess of Wales, a variety better known than some of the preceding, is of fair quality, large, and under good cultivation is robust, and a sure cropper for late use. Its greatest fault is lack of colour. It is one of the best varieties that can be grown outdoors.

Goshawk is one of the best flavoured Peaches we grow, it is large and of fair colour, but it is not such a good cropper as most of the varieties named above; it is a mid-season variety of good constitution. Early Louise, a first early Peach, is one of the most useful varieties grown for home use. The fruit is of a good size and quality, but it is not so good in colour as some other kinds; the tree crops well. Early Beatrice, a Peach that is much influenced by the kind of stock it is worked on. It is generally met with as a small insignificant, almost worthless, fruit, but when worked on a very free-growing stock it produces fruit 8 ozs. and upwards in weight when early forced, and in such cases it is one of the most valuable varieties we have, and by starting it in December it may be ripened by the third week in April; it colours well, and is of fair quality, but for sending away it requires to be packed before the skin gets tender. Alexander is an early variety of American origin, closely resembling Waterloo and Early Amsden, but it is the best of the trio if there is really any difference, which I very much doubt; it ripens about a fortnight before Hale's Early out-of-doors, resembling that variety in other respects. None of these varieties are to be depended on for very early forcing, they having an unpleasant habit of developing their buds to too great an extent in the autumn if they have been forced early the previous season, and these drop extensively as soon as the trees are started. In a cold house Alexander ripens about July 16, and about the same date on a south wall out-of-doors; it colours well, is of fair size, quality, and flavour. It is a variety that is often mistaken for Alexandra Noblesse, which is quite different.

Royal George remains one of our most useful Peaches, its only fault being that of a mid-season variety, coming in with so many others, and its being more subject to the attacks of mildew and various ailments than other varieties, but when it is grown under the best conditions, it is of the highest merit.

Salway is the latest Peach grown, and when it is well ripened by fire-heat, it is of good flavour. The fruit takes on a deep orange colour flushed with crimson, and is one of the most delicious fruits that we have for stewing. The tree bears well.

The above selection contains the best varieties for cultivation under glass. The best six, placed in their order of ripening, are:—Early Louise (or Early Beatrice is preferable, if it can be had on a suitable stock), Early Albert, Crimson Galande, Prince of Wales, Princess of Wales, and The Nectarine Peach. The best twelve for a cool-house are:—Alexander, Early Louise, Early Albert, Royal George, Stirling Castle, Goshawk, Crimson Galande, Prince of Wales, Dymond, Sea Eagle, Princess of Wales, and The Nectarine Peach. These will give a succession of fruits, without fire-heat, from the middle of July until the second week in October.

Among Nectarines, Lord Napier has already taken a notable position for its many good qualities; it grows to a good size, colours well, is of excellent quality, and bears freely. It is at best a mid-season variety, and does well in a cold house. I have not given it sufficient trial as an early forcer, but from what I have seen of it in other gardens, started early, I do not think it is so trustworthy as others. It has a very tender skin, and will not bear sudden exposure to the sun after it is half grown, or much overhead syringing after that period.

Dryden is a fine Nectarine not much grown. I have not tried it for early work, but so far as I am enabled to judge, it is a variety likely to answer well for that purpose. It belongs to the Elruge type of Nectarine, but is larger and colours better than Elruge; it is a very heavy bearer, and the fruit is excellent. The tree has vigour of constitution. Pine-apple is now a well-known variety that deserves mention here for its many good qualities; as a late variety it is unsurpassed. River's Orange, similar to the above but earlier, and perhaps a trifle firmer in texture, is often met with. The fruits generally seen are small, but the tree responds freely to high cultivation, and the fruit takes on a high finish, but it does not grow so large as Pine-apple. Victoria is the best of the very late Nectarines, being considerably later than Pine-apple. The tree is a good bearer and of good constitution, but the fruits are apt to crack in finishing if heavily watered at that stage. It has white flesh, of good flavour when ripened in warmth. The fruit grows to a larger size than any other variety, with the exception of Lord Napier, and it requires abundant sunlight to colour well. The Stanwick Elruge is an improvement in size and colour on the old Elruge, which it closely resembles in other respects; it is a very useful Nectarine. Byron is a late yellow-fleshed variety, of great excellence, paler in colour than Pine-apple, but resembling it in other respects. It ripens a few days later than that variety, and is well worth growing in a collection. Goldoni is a very pretty yellow Nectarine, not so large as the above varieties, but of very good quality for home use, and the fruit makes a very pretty dish for exhibition if well grown; the tree is a good cropper. Spencer is a late variety, with white flesh, of good quality, growing to a large size. It colours well, but under my treatment has not proved a heavy cropper here, possibly owing to the rather unfavourable position the tree occupies.

The above are the best of the many varieties we have grown here, and I consider Dryden the best of all, if only one variety is required; for the best two varieties, Dryden and Pine-apple; and six of the best in their order of ripening are Lord Napier, Stanwick Elruge, Dryden, Rivers' Orange, Pine-apple, and Victoria. These will give a succession of fruit in an unheated house from the middle of August to the end of September. Peaches and Nectarines delight in a moderately retentive calcareous loam, with lime-rubbish or burnt refuse added in sufficient quantity to keep it porous. Well-drained borders are essential, for if these be too moist, the shoots fail to ripen properly, and the buds drop prematurely as soon as the trees are excited by warmth. Borders may be 18 inches, not deep necessarily, and more than that is apt to prove injurious unless it be light or sandy, when 6 inches more may be given. The trees and roots should be pruned and lifted every third or fourth year, and even old trees may be treated in this way, and if they are judiciously managed they will bear a good crop the following spring. Any trees which have habitually failed to ripen their wood may possibly be cured by this means, and good crops obtained from them. The best time for lifting the trees is in early autumn, or as soon as the buds are plump, and the leaves have commenced to fall. The Peach and the Nectarine do not object to a little shade when flowering and until the fruit gets as large as Walnuts, provided the trees are not forced into flower, but start unassisted by fire-heat. I have grown them successfully up to the above stage under a thick growth of Roses; but later on they require all the sunlight possible to ripen the fruit and the wood. I do not advise shading for them at any period of their growth, unless the buds commence to fall in the spring, when a slight shading and a growing temperature will often avert this mishap going very far when it is too late to apply other remedies. The borders are best if made wholly inside the houses, as here the roots may be fed and watered as required. At no period should the borders be allowed to get dry, and this is a matter that specially requires to be guarded against during the resting period, when the houses are often filled with bedding and other plants, which do more injury in Peach-houses than in vineries, as the temperature is often kept too high to suit the Peach-trees, causing the buds to drop in the spring; plenty of air should be

given all through the resting period, provided the temperature does not fall below 32°, and fire-heat should be used as sparingly as possible after the leaves fall, as it dries the air too much. Many growers err in laying-in the wood too closely, getting their trees full of weakly shoots that fail to ripen. The better practice is to tie-in no shoots during growth, except those that are really necessary to furnish bearing wood the next season, or to cover the trellis; and as soon as all of the fruit is gathered, every shoot which is not wanted for one or other purpose should be cut away, which will have the effect of strengthening the flower-buds for the next year's crop.

In conclusion, it should be noted that we owe most of the improvements in the Peach and Nectarine to the life-long labours of the late Mr. Rivers; most of the Nectarines and the best of the Peaches I have mentioned were raised by him from seed, as well as many others worth growing where the collection is an extensive one, or under special circumstances. These fruits form a memorial of Rivers that is not likely to perish for a long period of time. *W. H. Divers, Ketton Hall Gardens, Stamford.*

CELOSIA PYRAMIDALIS PLUMOSA IN AUTUMN.

To many the month of December may seem to be late to write of Celosias, as they are usually regarded as being summer subjects. To have them in bloom now, I sow the seed thinly at the end of June, or early in July, using shallow pans for the purpose putting them in a cold frame—the seeds coming much stronger there than when they are raised in strong heat. In "D. S. H.'s" note (*Gardeners' Chronicle*, p. 634, he remarks on the value of the plant when flowered in the autumn, and I know of no flowers more valuable, or that last longer when cut. When employed with Chrysanthemum flowers, in vases, their light, graceful plumes are excellent foils to the latter blooms. Celosias for winter bloom succeed best in rather small pots, as then the danger of over-watering is avoided—a point of much importance in cool frame treatment of the plant. The plant sent to the *Gardeners' Chronicle* office was in a 6 in., and yet it was said to be a nice plant, and in no case is a pot larger than 48 or 36 required, the small contents of these sizes ensuring sturdy growth. Celosias suffer quickly if grown in heat and then brought without preparation into a cold house; but being thoroughly hardened off, there are few plants that are more lasting. Our plants are grown in a cold frame till October, when they are taken into the greenhouse.

There are varieties which are dwarfer than others, and of a deeper colour, and those who possess such should do all they can to maintain it pure. We have a dark crimson variety which gets feathered well from top to bottom, but still we are not satisfied, and always get fresh seed in the hope of getting a still better one.

Celosias are easily ruined in the seed-pan by neglecting to prick them off early, or by keeping the pan far from the light, and drawn plants never become sturdy or dwarf, and rarely make good-looking objects. For autumn-blooming I prefer to use, for potting, a stiff loam and not much manure or leaf-mould, and good drainage. *G. Wythes.*

SPOT ON GRAPES.

GLÆOSPORIUM LÆTICOLOR.

Few diseases of Grapes perplex gardeners more than the one popularly known as "spot." Muscats are peculiarly subject to it, and no good cause seems to be known for the occurrence of spot. Mr. Barron considers the disease may be sometimes constitutional, and at other times accidental, whilst some cultivators attribute spot to sudden chills. The first appearance of spot in Grapes is in the form of small whitish bruise-like patches, from which the pulp beneath at length recedes or contracts, and a depression more or less extensive forms on the side of the berry, as shown in fig. 125, A and B.

A few weeks ago, a correspondent forwarded examples of spotted Muscats to this office, on which a series of minute dots could be detected on the depressed parts, and on an examination of these small specks under the microscope, they proved to be caused by a species of Glæosporium, identical or almost identical with the Glæosporium which causes the pallid disease spots on young Peaches and Nectarines. Gardeners will understand the nature of these minute dots by looking at the illustration at C, which shows one of the dots in section enlarged 100 diameters. Five or six of the transparent cells of the pulp of the Grape are shown at the base, and the thick skin of the Grape on the right and left. An orifice is formed in this thick skin, and through the orifice from below upwards, a vast number of fungus threads grow vertically. The tips of the



Fig. 125.—Fungus producing spot on grapes.

threads bear an abundance of spores. In the diseased Muscats examined, the fleshy interior was traversed by mycelial threads belonging to the Glæosporium. At D, the tops of the spore-capped threads are shown enlarged 400 diameters, whilst a single spore, enlarged 1000 diameters, is shown at E.

Nearly twenty years ago, Mr. Berkeley described G. læticolor as growing on Muscats in the *Gardeners' Chronicle*, September 9, 1871, p. 1162, and he there says he had seen the same condition of things fifteen years before. Mr. Berkeley, on p. 1139 of the same volume, says the Muscat seeds which he examined were also diseased. Mr. Berkeley seems to have thought that Muscats would occasionally contract disease from Peaches and Nectarines, and *vice versâ*. Whether this Glæosporium is really the cause of "spot" on Muscats or not, we feel uncertain, as we have never hitherto microscopically examined the interior substance of spotted Grapes; neither can we remember having noticed the minute inconspicuous dots on spotted examples. It is, however, obvious that, as the Glæosporium grows from within outwards, in the earlier conditions of disease no spots would be present. Future observations may set at rest some of these points. Disease caused by the different species of Glæosporium spreads rapidly, so it is advisable to remove and destroy all affected fruits. *Worthington G. Smith, Dunstable.*

THE AINGES, ST. SAVIOUR'S, JERSEY.

The property and residence of W. A. Gunner, Esq., does not differ from thousands of other suburban residences in size and extent of gardens, but the way in which its grounds are laid out and kept, marks it at once as the home of a man of taste and an enthusiastic amateur gardener. Long serpentine well-planted borders, and unbroken sweeps of velvety lawns, with occasional groups and single specimen trees judiciously placed on the margins and distant parts of the garden as seen from the house, give it a grandeur, variety of landscape, and apparent extent beyond its actual size, and mark it out as a place of beauty, the result of art—but the art lies hidden by the beauty itself. The seven or eight houses on the place are all very plain in design, substantially built, well heated, kept in the most perfect order, and contain a general and varied collection of plants, remarkable for their perfectly clean and healthy condition.

In the Fern-house there are some very nice specimens of Gymnogrammas gloriosa and chrysophylla, Microlepia hirta cristata, Adiantums Flemingii, curvatum, fragrantissimum, Farleyense, Bausei, Victoriæ, Williamsii, cuneatum, and some forty other varieties of Adiantum; some very pretty varieties of Pteris, and numerous other species of Ferns. In the stove are some of the best species of Dracæna, Croton, Anthurium, Alocasia, Maranta, and Palms, all in robust health and clean condition. Orchids also find a congenial home here; a few only were in bloom at the time of my visit. Two or three plants of Calanthe Veitchii were throwing up about a dozen spikes each, and remarkably strong spikes too. Dendrobium formosum giganteum had some of its lovely blooms left, although it had been in flower six or seven weeks. There are many varieties of Dendrobium, Cattleya, Cypripedium, Cymbidium, Odontoglossum, and Phalænopsis, all showing unmistakeably that they are receiving the right treatment. I had almost forgotten to mention a grand plant of Peristeria elata, which produced five immense spikes this year, and looks promising to exceed that number next.

In another house there was a nice lot of very strong Poinsettias, and more of the same plant in 4-inch pots, about 6 inches high, showing nice little heads of bracts. I do not remember ever having seen such dwarf, healthy, hardy little plants of Poinsettias before; I understood they had been struck very late, and grown on a shelf in a cool house. There was also in this same house a very fine plant of Rivina humilis planted in the border, and trained up the back wall, and in this position it formed a thick mass of bright healthy foliage and coral-red berries. On the back wall of a small house is a remarkable plant of Niphetos Rose which blooms almost the whole year round—and such blooms! appearing at a short distance like so many swan's eggs. This house was full of other good things too numerous to mention, but I may state that on a former visit I saw a grand lot of Gloxinias with thick healthy foliage almost covering the pots, and abundance of flowers, large, beautifully spotted, and varied in colour.

The Rose-house is also worthy of mention, a wide lean-to, about 40 feet long, well furnished with the best of Roses, covering the whole of the roof, and on the back wall very fine plants of Lapageria rosea and alba; and on the floor, plants of Azaleas, the Rhododendron Edgworthii and R. Countess of

Haddington, Acacias, &c., and a fair collection of Chrysanthemums.

In the frames and plunging-bed were found the usual collection of Cinerarias, Calceolarias, Chinese Primulas, Cyclamens, and various other plants in a healthy condition. In a hardy fernery, built as a grotto, which will, in the course of time, be improved by the proprietor into a thing of beauty.

Altogether this garden is a great credit to the taste of the proprietor, and to the attention of the persevering young head gardener, Mr. Woods, who has been able to work wonders in a very few years. This is one of the few places where the plants are not deprived of their flowers for decoration, no blooms being ever cut. *H. Elliott.*

PRODUCTS OF WESTERN AFGHANISTAN AND NORTH-EAST PERSIA.

DR. J. E. T. AITCHISON, so well known for his elucidation of the botany of Persia and Afghanistan, has just reprinted in book form his *Notes on the Products of Western Afghanistan and of North-Eastern Persia*, from the Transactions of the Botanical Society of Edinburgh. The matter in this book, which extends to 228 pages, is arranged alphabetically, scientific and native names together, thus it will be very useful to all readers. It contains an immense amount of information on the useful plants of the countries referred to, and the notes made by Dr. Aitchison from facts which came under his own observation will make it extremely valuable. The following extracts will sufficiently show the characte of the work, and prove how valuable it is likely to become.

Agriophyllum latifolium, Fisch et Mey., *Chenopodiaceæ*, Charkho, Chirkho.—This is the plant of the sandhills of Baluchistan, that used to be seen being rolled across desert flats carried by the wind hither and thither, and occasionally met with in sheltered localities drifted into great heaps. It had been called by the mission the "wanderer" before we knew the native name of it, which means the spinner, or the spinning about one. In Persia during autumn Gundelia Tournefortii was seen being driven about in the same way, but being a much larger plant was apt to produce by its gyrations a panic amongst cattle.

Dr. Aitchison's notes on the uses of the several species of Astragalus are very interesting. The species referred to are the following:—

Astragalus Gompholobium, Benth., and another unnamed species, have pods as large as a good-sized Gooseberry, inflated, and full of liquid; these are collected by the natives and eaten, being called angurak and khaibuze. They are nice in flavour, somewhat like young green Peas. As the pods ripen, the fluid becomes absorbed, and the pods soon become dry and leather-like, when the Peas rattle in the interior.

A. heratensis, Bunge.—This, and another species very common in the stony soil of the Hariud Valley and Khorassan, at an altitude of 300 feet, yield a gum called katira, gabina, which exudes from fissures in the bark, in the form of tragacanth, or on cutting across the stem it shoots out of the medullary cavity like pipe tragacanth. This is collected in large quantities at a village called Kallaroving, near Bezd, in Khorassan, for exportation in all directions from this to India, Persia, and Turkestan, to be chiefly employed in the stiffening, glazing, and facing of local fabrics. Most of the gum sold in India as katira is this, and not the product of any Indian plant.

A. Holdichianus, Aitch. et Baker; A. kahiricus, D.C.; A. Anganus, Bunge.; A. buchtormensis, Pall. All these species have long fibrous, whip-like roots, of which the bark makes splendid twine and rope, for which purposes they are employed by the natives. To obtain as much of the root entire as can be done at one operation, they employ the following plan; they pass one end of a short loop of twine over the neck of the root, and through the other end of the loop a stick, then use the latter as a lever against the ground, the root fractures deep down into the soil, and thus pieces of from 1 to 2 feet in length are obtained.

A. hyrcanus, Pallas. — A most valuable fodder in the desert or arid tracts. The very marked pyramidal shape of this shrub causes its recognition at long distances. "At first," Dr. Aitchison says, "I had the idea that this peculiar form might be due to the browsing of cattle; but this is not the case; it seems to grow naturally thus."

A. sarcocolla, Dymock. — The identification of the source of the gum known as "sarcocolla," is one of some interest when it is remembered that for a long time it was supposed to be furnished by a species of Penæa. Dr. Aitchison says, as his own pages were passing through the press, he only received the *Pharmacographia Indica*, in which the author considers that sarcocolla is the product of an Astragalus, not only from finding the fruit of an Astragalus amongst the gum, but also from the fact that the seed, when soaked in water, swells, bursts, and a mass of sarcocolla protrudes; some of the pods are abortive, and are full of the gum. "Without, however, a further knowledge of the plant, I think it should not have been identified as a new species, as in all probability it will be found to be a species, already described, of Bunge.

"The substance, or drug, called sarcocolla in England, from the Greek, meaning 'flesh glue,' is known in Persia as auzarut, auzrud, or auzerut. It consists of pale yellow irregular minute grains, somewhat like crushed resin, or some forms of soft brown sugar, but more irregular in the size of the particles. It is said to be obtained from the surface of a spinous shrub, collected much in the same way as manna, being shaken off the shrub on to a cloth laid on the ground for the purpose of catching the falling grains. It is eaten by the ladies of the harem to improve their appearance, and to give the skin a gloss, but is exported as a medicine. It is said to be chiefly collected near Koin, Birjaud, and Yezd, and also not far from Turbat-i-Haidri. A false auzarut is collected from the shrub Microrhynchus spinosus."

Dr. Aitchison's contributions to a very interesting and important section of the botany of those parts of Afghanistan and Persia which he has made his own will be specially welcomed as the work of one whose researches have been so thorough and complete.

SOILS FOR POTTING.

NOTWITHSTANDING the popularity of our provincial horticultural shows, and the astonishing rapidity in which they have come into existence this last quarter of a century, it seems as extraordinary as true, that in quite 50 per cent. of these exhibitions there is no perceptible signs of improvement in stove and greenhouse plant culture. I do not allude to our recognised champions, although there is a little room for improvement noticeable, in some instances, even there. About twenty-five years since, I was under one of the most successful plant growers of bygone times; his mode of using soils according to the character of the plants, would, I have no doubt, astonish his more modern followers, for under no pretence whatever would he mix soils in the case of large plants. In my opinion, there are more evils attributable to soil than any other cause. Such plants as Stephanotis, Allamandas, Clerodendrons, and the large-leaved section of Crotons, thrive best in loam and charred vegetable matter. I am aware some growers assert that the latter is too hot, or too dry; but on the contrary, it is one of the best ingredients that can be used, containing, as it does, all the elements of a substantial and lasting plant-food, and by exercising discrimination it may be advantageously utilised with almost any soil. Another reason why mixing of soils should be avoided as much as possible, is its tendency to excite fermentation, especially in the case of large plants where there is a bulk of soil. How often does it happen that when such things as Crotons and Dracænas, after they have been potted a few weeks, lose a quantity of foliage, and in nine cases out of ten the mischief may be traced to the soil.

From innumerable cases that have come under my observation, I will quote two or three only, as showing the danger of using soils calculated to become hot when the house is allowed to run high. These were a nice lot of stove plants, including some fine Palms. About ten days prior to my visit they had been potted in a mixture of peat, loam, dried cowdung, &c. The Crotons, Dracænas, and Aralias lost their leaves; Palms turned a sickly yellow, and all those plants in large pots or tubs suffered most, and presented a most lamentable spectacle. The reason was obvious enough, fermentation having set in, with the result that the roots were scalded to such an extent that some of the plants succumbed entirely. Another case in point was an Alsophila crinita (whether this variety is in commerce or not, I am not in a position to say; it was received under that name after the break up of the Colonial Exhibition); it much resembles A. australis. The plant had a fine head upon a 7-feet stem, and after being shifted from a small tub to a much larger one in several kinds of soil, soon the edge of the fronds began to shrivel, and on examining the ball it was found to be some 15° or 20° higher in temperature than the house itself. It should be understood that there is a great difference between the soil in a state of fermentation, and the ordinary bottom-heat generally resorted to, and which is oftentimes an absolute necessity in plant culture. *G. B. Claydon, Holbeck's Park.*

PLANTS AND THEIR CULTURE.

THE FERN HOUSES.—These plants should now have a cooler treatment, and those of the species which are resting at this period should receive less water. Ferns are frequently kept in too high a temperature at this season, which leads to weak fronds and early exhaustion, so that when active growth should take place in the spring, they make but puny growth. The Ferns which are kept here for cutting purposes are kept in a cold pit in summer, with plenty of air during the day; and by this treatment their fronds are enduring, and do not shrivel when cut, but often last in a good state for a week. When grown cool through the summer and autumn months, Adiantums make sturdy growth. For a late supply of fronds, or of healthy plants, they are kept growing in a temperature of 55° during winter, and not started at the same time as the others; and not given heat like those. For early plants or fronds to succeed, the latest batch of some of the early started plants which have been cut down should be selected—those that are showing new growths being chosen, and if they have been kept on the dry side, they will soon start when placed in a warm house, if the pots are stood on a warm moist bed. When good growth has been secured, the plants should be placed in a cooler house, so that the fronds may be hardened previous to being cut.

Many of the Davallias, Pteris serrulata, and Onychium japonicum are suitable, and last well when cut, if grown as advised. Many Ferns grown in heat will now be past their best, and should be removed, to allow full light to those remaining. Any small fronds infested with scale should be cut off and burnt, and an insecticide used in a weak state on large ones to destroy thrips. Tree Ferns will require more water than others, the trunks being syringed daily. Now is a good time to renew large Fern-baskets; they should have fresh material in place of the old impoverished soil, a large proportion of good loam being afforded to the strong growers; and in all cases pieces of charcoal and lumps of peat should be mixed with the soil used. Davallias, of which D. Mooreana and D. elegans do well in this compost, in baskets. Many deciduous species will now be at rest, requiring scarcely any water; still, they should not be forgotten, or the roots allowed to shrivel, from too great dryness of the soil.

The present is a suitable time to propagate scarce species, and to pot up spore-raised plants, keeping them in a warm, moist house. A supply of compost

should be placed under cover, to get warmed, and in readiness for potting as soon as growth begins in the new year. *G. Wythes, Syon House, Brentford, W.*

The Orchid Houses.

The East India-house.—This division is now getting gay with flowers, and will be the most interesting one for the next two months. Those who take a pleasure in the arrangements of colours with an eye to effect, will now have opportunities for the exercise of their skill; for whether the number of plants be few or many, the pleasure of seeing them will be enhanced if the colours are made to blend, or contrast if that be liked. Calanthe vestita and C. Veitchii are useful for placing amongst the Phalænopsis, and the latter being somewhat raised above the stage. The pots of the former are wholly hidden from view, and the flower spikes of Phalænopsis and Calanthes intermingle with good effect. The Saccolabiums must be watered with great care, and the surest way to tell when these or Vandas or Aërides require water during the resting period, is to feel the lowest leaves upon the plant with the finger and thumb, and if these leaves are quite firm, no water is needed; but should the foliage be soft to the touch, water should be given in such quantities as will ensure the moistening of the whole of the compost. Saccolabium Bellinum, now coming into flower, is one of the most curious and charming of Orchids; it requires very little water at any season, the foliage being very apt to spot, and more especially is this the case at the point of the leaves. The best position in the house for S. Bellinum when growing is high up, near the top ventilators, where air is perpetually finding i's way into the house. Vanda Sanderiana, now going out of flower, should be kept in the cool part of the house, and receive but little water for the next three months, unless signs of shrinking in the foliage becomes apparent. The newly-imported plants of this species, which have not as yet got established, must be kept warm and moist, so as to induce young roots to push, which will be done very slow at this season. Any attempt made to rest these plants before the next flowering season is a mistake. The temperature may be safely allowed to fall as low as 60°, and on very cold nights a few degrees less than that will do no harm. But little damping of the house will be necessary for some time to come.

The Cattleya-house.—That C. Bowringiana has a future before it will not be doubted, for it is a grand acquisition in the late autumn and winter. The better forms of it equal in beauty the finest of those of C. Skinneri. The plant is a good grower, and very free to flower, strong growths sending out spikes with from fifteen to eighteen flowers, and lasting a month in perfection. I have found that this species does best when pinched for space at the root—that is, rather pot-bound; the pot-bound plants sending up more flowers on a spike than newly-potted plants. Very little will now be necessary here in the way of syringing the stages or damping the floors, and a good syringing once a day is enough, which should be given in the morning as soon as the thermometer indicates a temperature of 60°. This amount of warmth, if from fire-heat alone, will be ample; the night temperature, if the weather is very cold, may safely be allowed to fall to 52°, and on very cold nights to 50°. *A. G. Catt, Parkfield Gardens, Worcester.*

Fruits Under Glass.

Peaches and Nectarines.—Where the roots of the trees in the earliest house are confined to borders inside the house, and warm dung and leaves have been judiciously used, the buds will have begun to push without much assistance from fire-heat being required. The movement of the sap having been secured, the hot-water pipes should be brought into use to maintain a steady temperature, which should range from 45° to 50° at night, and 50° to 56° by day, a few degrees more during sunshine. Ventilation of the house at even these low figures must not be neglected, as trees started slowly, and having a constant circulation of warm, moist air, develop stout and perfect flowers, which set well. Trees which have been forced for several years in succession, and lightly cropped, are more readily brought on, than unforced young trees; they are also less liable to dropping their buds. This misfortune happens just as the buds swell, and it may be traced to various causes, but either of the following will bring it about, viz., dryness at the root during late summer and autumn; too much fire-heat causing a high, dry temperature at starting-time; the soil being too loose around the roots; or by the application of too strong an insecticide to the young wood whilst in a dormant state. The first-named is the most common cause.

Early Forced Trees, whether in pots or planted out, are greatly weakened, and their setting powers reduced by allowing all the flower-buds to remain that have formed. There are always numbers of misplaced or imperfect flower-buds which may be removed at this stage—indeed, a judicious thinning the buds is conducive to the health of the trees. If my previously advised precautions against insects and their eggs have been carried out, there need be no apprehension felt for the present, but as soon as Strawberries, Roses, Azaleas, and other plants are placed in the house, aphis often comes along with them; and as a safeguard, it is well to give the house two gentle fumigations with tobacco-paper—previous to the opening of the first flowers. Regulate the temperature and the aërial moisture in accordance with the weather, and force most by daylight, and little at night. On mild, still nights, let the thermometer indicate a few degrees greater warmth, also on fine days.

Succession-houses should be put in order for starting on January 1. Where large trees have filled their allotted space, it is sometimes necessary to shorten back the terminals to triple buds, or better still, to cut them out altogether, and allow the shoots which will spring from the base of the old shoot, to take their place. In this case, there is no fear of any dying back to a wood-bud, and the extension system of training is maintained, the only difficulty found being that of having too many shoots. Loosen all trees from the trellis, cut old ties, and wash the whole of the wood with Gishurst's soap. the old wood with 8 oz. to the gallon, then the young wood with 6 oz. to gallon of soft water.

Where scale is present, the wood should be washed twice, laying the young wood in the palm of the hand, and drawing the brush firmly from heel to point, remembering that once scale is loosened from the bark he is done for. Some hold that the blossoms set better if the branches are left untrained till the flowering is past, but I always tie mine at once, and experience no difficulty. It requires judgment to train a tree properly—the main branches should first be set out at regular distances, according to the quantity of young wood, but every branch should preserve a straight line radiating from the stem outwards, and the shoots should be made to cover the intervening spaces. An error common to beginners is tying the shoots too tightly. Our forefathers took particular pride in this department of gardening, and some of their lessons are still well remembered by me. The fan form of tree is the best for the Peach, and the stems should be from 2 to 3 feet high, without any central strong leader. Now is the time to choose trees, and it may be well to add, the strongest trees are not always the best; but if a tree has a clean union and a well-balanced head without a leader, and which has not been too many times cut back, whose branches seem fairly well ripened, that is the tree to buy. *W. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

The planting of fruit trees in the garden being now completed for the present season, attention should be given to the orchard trees. As a rule, orchards are often left to take care of themselves, the trees being neither thinned or manured, and yet the trees well repay the labour and cost of both. There is an impression abroad that the planting of the Apple has been pushed into undue prominence, that will end in disappointment to many persons except the nurserymen; but I think it will be granted that there must ultimately be good profits realised from the fruit—that is, if packing and marketing should be better and more generally understood.

In pruning orchard trees, the idea should be to thin out the wood on the inside of the heads, so that the sun shall reach the interior parts, and give colour and size to the fruits; and to thin out the branches everywhere with that end in view. Old snags should be cut smoothly away, also cankered branches, or at least the cankered parts of them. As a surface-dressing for orchards, stable manure is usually preferable to others, but failing this, soot, wood-ashes, road-scrapings, and ditch-trimmings make excellent substitutes; bone-meal and guano are also good as top-dressings, and the best time to apply these is the winter months. If lichen be present on the branches, this is a sign the drainage is bad or the soil poor. The remedies are obvious; the moss or lichen may be got rid of by syringing the trees with lime-wash or brine, or by dusting with quicklime in powder; it should be done now, so that the buds be not injured. The same kind of dressing will destroy American blight on the branches, but more care is requisite to thoroughly brush over every part of the tree. Whilst growth is dormant is the best time to give attention to the matter of winter dressing of trees, and nothing gives better returns for the labour involved.

In bad weather, stakes may be prepared for recently-planted and other trees; and all ties should be examined. As a good preventative of rubbing of the bark of trees, old water-hose cut in lengths and put round the stem at the point of contact with the stake is excellent. The grease bands should be carefully looked to, regreasing them when needed. There can be no doubt that there is a great reduction in the number of caterpillars where grease-bands are properly used. I have counted on the bands here used as many as seven female moths, and although I do not expect a total clearance, there will be a reduction of their ravages. *A. Evans, Lythe Hill, Haslemere.*

The Kitchen Garden.

The recent heavy falls of snow reached fully 23 inches in depth, and the hard frosts have for the present put a stop to much outside work. But as soon as a change takes place, and the ground becomes workable, a bed of Horseradish should be planted. Usually, this finds a place in some out-of-the-way spot, and is allowed to remain for several years without disturbance; and the produce becomes at last small and poor, and good sticks are rare. The ground to be planted should be deeply trenched, the manure being placed in large quantities at the bottom of the trenches, the soil being well worked as the digging proceeds. When the soil has somewhat settled, dibble in pieces of the root with a crown attached, 10 to 12 inches in length, clean and straight. The distance from set to set may be 12 to 14 inches; fill up the holes with fine soil. If straight pieces of this length are not obtainable, smaller pieces may be dropped to the bottom of the holes. Good Horseradish is better obtained on heavy land when the beds are well raised, and abundance of leaf-mould added.

Salads.—Endive and Lettuce protected in frames should be freely ventilated in fine weather, and the outside leaves of the former removed should decay set in; and a few according to demand should be tied up to blanch at intervals of eight or ten days when thoroughly dry. Chicory and Dandelion-roots, when properly grown, make good additions to the salad-bowl, but they should be thoroughly blanched; and to attain perfect blanching the pots in which a good number of roots should be closely packed, should be stood in total darkness, such as a Mushroom-house. Young Lettuces, Mustard, and Cress are invaluable in the salad at this season, and should be sown moderately thick in shallow boxes and stood in a house where there is a gentle warmth, removing them to a more airy position when the young plants are well above ground. Onions may be raised in a similar manner. *H. Markham, Mereworth Castle, Maidstone.*

Society of American Florists.—The proceedings of the meeting, or "convention," held at Boston in August last have now been issued. The members seem, in Yankee phrase, to have had "a good time," the ladies and gentlemen assembled from all parts of the States buckling to work or appreciating the hospitality shown them in a manner that shows that there is a good deal of human nature in the American section of humanity, as in others. The proceedings before us show that the "properties" most considered in florists' flowers on the other side of the Atlantic are the commercial ones. Æsthetic fancies or botanical details are strictly subordinated to business considerations.

EDITORIAL NOTICES.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

NEWSPAPERS. — *Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY,	DEC. 9	Royal Horticultural Society; Committees at Westminster. Hibberd Memorial Meeting, at 117, Victoria Street, S W., at 1 P M. National Rose Society, General Meeting at Hotel Windsor, at 3 P M. Gardeners' Orphan Fund, Special General Meeting, at Cannon Street Hotel, at 6 P.M.

SALES.

MONDAY,	DEC. 8	Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	DEC. 9	Lilies, from Japan, at Stevens' Rooms.
WEDNESDAY,	DEC. 10	Roses, Fruit Trees, Dutch Bulbs, &c., at Stevens' Rooms. Lilies, Bulbs, and Plants, at Protheroe & Morris' Rooms.
THURSDAY,	DEC. 11	Orchids at Stevens' Rooms. Bulbs at Protheroe & Morris' Rooms.
FRIDAY,	DEC. 12	Orchids at Protheroe & Morris' Rooms.
SATURDAY,	DEC. 13	Roses, Fruit trees, Dutch Bulbs, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—40°.9.

Shirley Hibberd.

THE spontaneous outburst of feeling manifested in the horticultural world when the death of SHIRLEY HIBBERD was announced has found further expression in a requisition which has been sent to the Council of the Royal Horticultural Society. That requisition asked the Society to call a public meeting of horticulturists to consider the propriety of instituting some memorial of HIBBERD's work. It was signed by ten or a dozen gentlemen selected as representatives of the various special societies and other bodies with which HIBBERD was connected. It is quite certain that many others would have been equally pleased to have attached their signature to the document. Time pressed, however, and it was felt that the names of a few gentlemen not officially connected with the Society would, under the circumstances, be amply sufficient; others will shortly have the opportunity of expressing their sympathy with the movement in a more practical form.

To this request the Council acceded an immediate and a willing assent, and the meeting will accordingly be held on Tuesday next, at 1 o'clock, in the Society's Rooms. Looking to the already overcrowded programme for that date, it seems probable that not much can be done, save to initiate matters, to take measures to secure the collection of the requisite funds, and then to leave the discussion of what shall be done till a future occasion.

In the meantime, the thanks of the horticultural community are certainly due to the Council of the Royal Horticultural Society for taking this matter in hand, and thereby showing that they are, as they ought to be, in touch and sympathy with the general feeling of the community. In theory, the Society should be at the head of any and all matters relating to horticulture in its public aspects. In practice, it should take the lead whenever and wherever circumstances permit. For this reason we are glad to see the question of a HIBBERD Memorial taken up by the Society. HIBBERD's work was done mainly for the common benefit—he lived, he worked, he died for horticulture.

The disinterestedness of his labours, his ever-ready response to the call for his services on public occasions, and for public purposes connected with horticulture, constitute, in our opinion, the reason for a public rather than for that private recognition, which would assuredly have been made. We could wish, indeed, that whenever a man has rendered very exceptional services to horticulture, the public recognition of the fact should come from the Royal Horticultural Society, and not from individuals. If it were known that the Royal Horticultural Society were likely to take the lead in all cases where there were sufficient grounds for instituting a public memorial of this kind, a good deal would be done towards the discouragement of individual initiative. The undue multiplication of testimonials and memorials will, if not checked, soon lead to the greater honour being paid to those who have not been testimonialised!

We have had to register an unusually large number of such testimonials and memorials lately. Sad circumstance accounts for this large number. We shall not say one word against any of them; all were justified by circumstances; but we cannot help regretting the tendency to give public expression to what, if done at all, should remain a private and personal matter. When the testimonial takes the form, as we are glad to say it often has done of late, of a substantial contribution to the Gardeners' Orphan Fund, or to the Gardeners' Benevolent Institution, then, of course, we have only to congratulate the community in accomplishing, in one effort, two desirable objects.

The instance before us—that of SHIRLEY HIBBERD—is, admittedly, wholly exceptional. The feeling in its favour is, we believe, all but universal. The action of the Royal Horticultural Society lifts the proposal out of a too well-worn groove, and lends a weight and importance to it that it would not otherwise have.

Numerous suggestions have reached us as to the form the memorial should take; but, until we know more fully the circumstances, we cannot venture to recommend one in preference to another.

Briefly, the suggestions made hitherto refer to the acquisition of a portrait, to be handed over to the Trustees of the Lindley Library, for the benefit of the Society, like the portraits of RIVERS and other worthies; to the improvement and extension of Chiswick as an experimental garden, a subject dear, as we know, to HIBBERD's heart; to the development of some scheme for the promotion of technical education among young gardeners, or for the establishment of a HIBBERD Scholarship, or bursary, to enable young gardeners, after a course at Chiswick or Kew, to proceed to one or other of the schools of horticulture on the Continent.

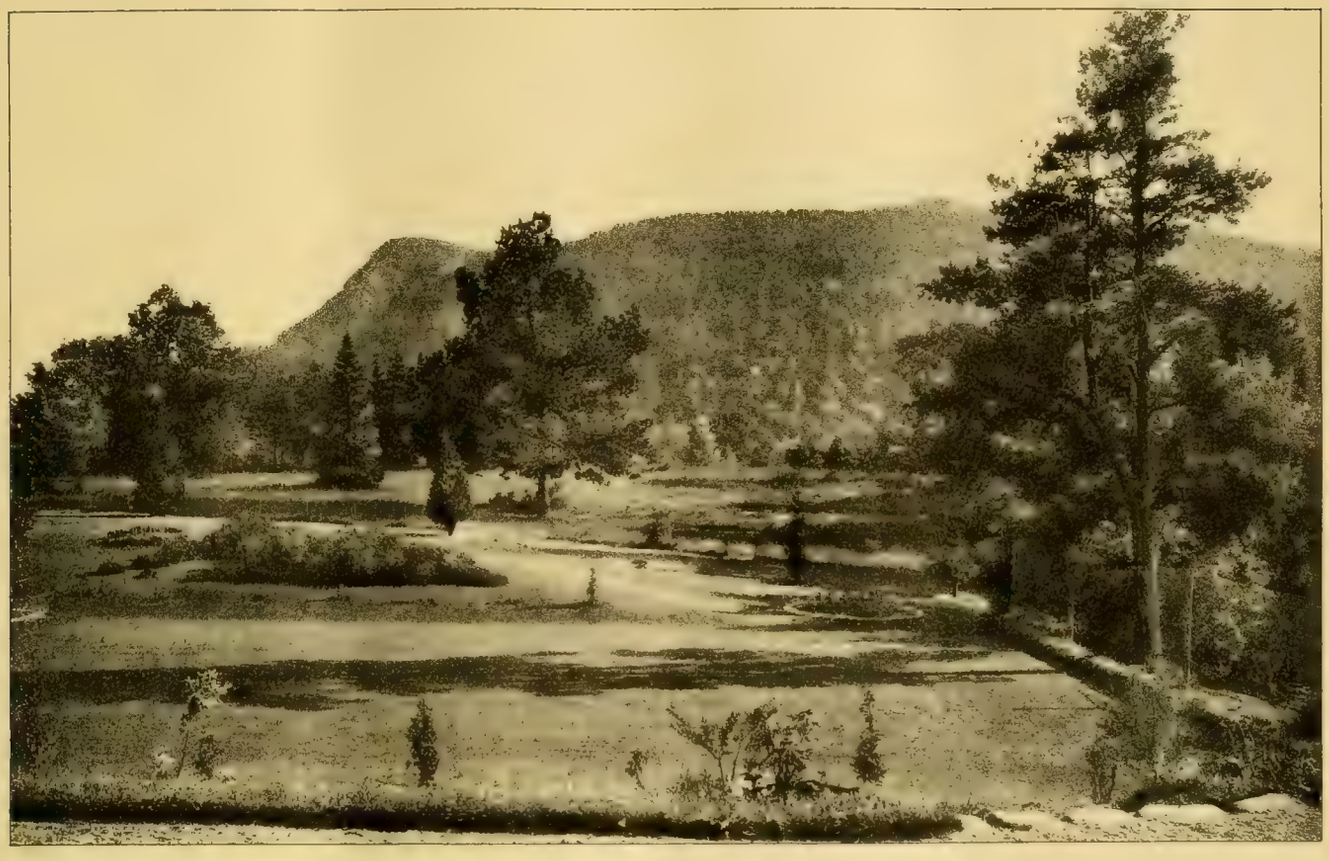
It seems to us that the full consideration of these and other schemes, which will doubtless be forthcoming, must be deferred till a later period. The first thing, is to agree something shall be done, then to appoint a committee to secure the means, to consider the method, and ultimately to report to the Society, so that the matter may be brought to a successful termination. In our next issue we shall doubtless be able to report what steps have been taken.

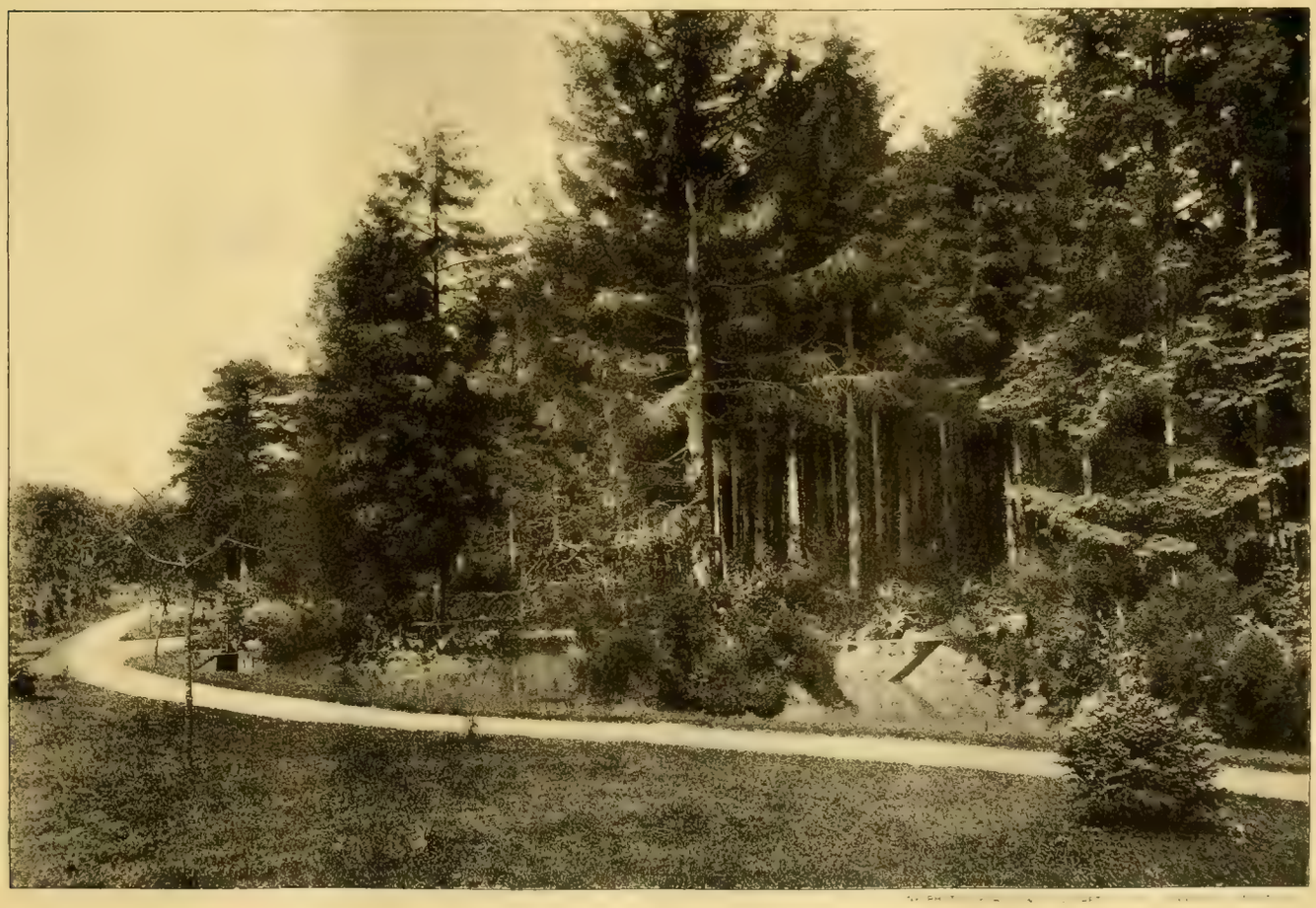
THE NEXT MEETING OF THE ROYAL HORTICULTURAL SOCIETY.—Tuesday next will be a busy day for the horticulturists. In addition to the meetings of the four committees, there will be a meeting at 1 p.m. to consider the propriety of instituting a memorial of the late SHIRLEY HIBBERD, and of discussing what form it shall take. The Council meeting of the Society takes place at 2 p.m. At 3 p.m. the annual general meeting of the National Rose Society will be held. At 4 p.m. the Scientific Committee meets. At 6 p m. will be held an extraordinary meeting of the Gardeners' Orphan Fund at the Cannon Street Hotel. That those who work through all, or a majority of these items, as many must do, will need some refreshment is obvious; this may be had at the meeting of the Horticultural Club, which will hold its usual monthly dinner at the Windsor Hotel; after which, Mr. GIRDLESTONE will wind up the day with a paper on Rose Stocks.

—— We are informed that at the Drill Hall, on Tuesday next, December 9, Messrs. BEACH will exhibit a large collection of preserved fruits and other products.

NATIONAL ROSE SOCIETY.—The annual general meeting of the National Rose Society will be held at the rooms of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Tuesday, December 9, at 3 o'clock, to receive report of the general committee; to pass the accounts; to elect the committee and officers for the ensuing year; and for the transaction of other general business.

THE GARDENERS' ORPHAN FUND. — The monthly meeting of the committee took place at the Horticultural Club, Hotel Windsor, on the 28th ult., Mr. WILLIAM MARSHALL in the chair. The Chairman made brief sympathetic allusion to the recent deaths of Mr. James McIntosh and Mr. Shirley Hibberd, supporters of the Fund; and the following resolution was unanimously passed:—"That this committee place on record their sense of the great loss to the Fund sustained by the deaths of Mr. James McIntosh and Mr. Shirley Hibberd, Vice-Presidents of, and warm supporters, of the same." The balance at the bank was stated to be £553 19*s.* 4*d.* The following special receipts were announced:—Chiswick Gardeners' Mutual Improvement Association, proceeds of concert, £20; Mr. J. Smith, Mentmore, proceeds of concert, £5; Mrs. Smith, box at Chrysanthemum show, 10*s.*; Mr. R. W. Proctor, nurseryman, Chesterfield, as profit on work done and sold by his invalid wife, to place her husband on the list of donors as a Life Member, £5; Mr. W. Bates, box at the Twickenham Chrysanthemum show, £1 15*s.* 6*d.*; Mr. J. H. Vallance, box at Chrysanthemum show at Bristol, £1 5*s.* 3*d.*; Mr. G. W. Cummins, The Grange, Carshalton, proceeds of the flower-stall at the Croydon Chrysanthemum Exhibition, £7 14*s.*; and box in the Grange





ST MARY'S TOWER, BIRNAM, NEAR DUNSINANE.

Gardens, £4 2s. 6d. The Hon. Secretary announced that the George Deal Memorial Fund was closed, and that of the £552 10s., the estimated cost of placing upon the Fund the seven children who failed in their election in July last, £300 had been subscribed by friends of the late Mr. George Deal, and the remainder had been made up by promised joint contributions from Mr. H. J. Veitch and Mr. N. Sherwood. It was therefore unanimously resolved that the seven unsuccessful candidates at the last election be placed upon the Fund from January 1 next, as a memorial to the late Mr. George Deal, Chairman of the Executive Committee. The special general meeting of subscribers, called to make some alterations in the rules consequent upon the recommendation of the committee that the financial year shall close on December 31, instead of June 30, as heretofore, and for other business, will take place at the Cannon Street Hotel on Tuesday next, the 9th inst., at 6 p.m.

The Gardeners' Orphan Fund and Edinburgh Chrysanthemum Show.—In the report of the Edinburgh Chrysanthemum Show in our last issue, we should have noted that Messrs. Todd & Co., 6, Maitland Street, Edinburgh, had a stall for the sale of cut flowers and table-plants in aid of the Gardeners' Orphan Fund. The stall was presided over by Mrs. Matthew Todd, and an attractive assortment of flowers and plants was kept up during the three days of the show. The profits, amounting to about £15, will be handed over to the fund.

The Late Shirley Hibberd. — We have received the following communication relating to the subject of the Hibberd Memorial:—

"The many paragraphs, not only in the gardening press, but also in several other London newspapers, testify to how deep and wide-spread is the feeling of loss sustained by the comparatively early death of Mr. Shirley Hibberd. A letter, with several influential names attached to it, has been forwarded to the Royal Horticultural Society, requesting the President and Council to take the initiative in promoting some public memorial of our friend's life and work. Shirley Hibberd's services to horticulture have been so many and varied, and his devotion to the interests of our Society has been so enthusiastic and thorough, that the President and Council gladly accept the suggestion, and have desired me to announce that a public meeting will be held at the Society's Offices, 117, Victoria Street, Westminster, on Tuesday, December 9, at 1 o'clock, to consider the question of raising a suitable memorial to the deceased. I should feel greatly obliged if you, Sir, would assist me in making this known as widely as possible.—I am, &c., W. Wilks, M.A., *Secretary, Royal Hort. Society*, 117, *Victoria Street, S.W.*

—— The requisition above alluded to was signed by the following gentlemen, as representatives of various departments of horticulture. Doubtless many more would gladly have added their signatures, but, for the immediate purpose in view, the gentlemen in question may be considered fully representative of the feeling of the community:—The Very Rev. the Dean of Rochester (President of the National Rose Society); Rev. H. H. D'Ombrain (Secretary of the National Rose Society); T. W. Girdlestone, Esq., (Secretary of the National Dahlia Society); R. Dean, Esq. (Secretary of the National Chrysanthemum Society); W. Marshall, Esq., Chairman of the Floral Committee; R. D. Blackmore, Esq., Vice-Chairman of the Fruit Committee; Dr. Robert Hogg (*Journal of Horticulture*); W. Robinson, Esq. (*Garden*); Dr. Maxwell Masters (*Gardeners' Chronicle*); and Harry J. Veitch, Esq. The signature of Sir John D. T. Llewelyn (Primula Society) arrived after the requisition had been sent into the Council.

Messrs. Paul & Son.—It is pleasant to have to record an event testifying to the good feeling between employers and employed. Mr. George Laing Paul, who has served his apprenticeship in various foreign nurseries, as well as in all departments of his father's establishment, recently attained his twenty-first year. To celebrate the event, Messrs. Paul invited 110 of their employés to a supper in the Cardinal Wolsey's House, known as Cheshunt Great House. Needless to say, the greatest enthusiasm prevailed, and this was intensified when Mr. George Gater, on behalf of his associates, presented a handsome clock to Mr. George Laing Paul. Mr. Gater has been in the service of the firm for nearly forty-three years.

The Jardin des Plantes.—We have received from Professor Maxime Cornu the list of seeds and living plants offered in exchange to public institutions, &c., by the administration of the Museum d'Histoire Naturelle. Application should be made before December 31.

James Backhouse.—The current number of the *Journal of Botany* contains an excellent portrait of the late head of the famous firm at York. James Backhouse was as well known in the domain of British botany as in that of horticulture.

Cattleya labiata Warocqueana.—Is the Cattleya lately shown in so many forms by the Horticulture Internationale a true species, or is it a form of Cattleya labiata? Opinions are sure to differ upon this point, and will do so, so long as there is no definite line to be drawn between species and species, still less between species and variety. Whether a particular plant is to be ranked as a species or a variety is a matter of opinion, for the most part, and the opinion of him who has the greatest experience, the widest and deepest knowledge, and the most sagacious judgment, will, as it ought to do, prevail in the long run over that of others less fortunately endowed. All we can say upon the matter from an inspection of the plants shown before the Royal Horticultural Society lately is, that in our opinion all were forms of C. labiata, and that among them was one in particular which, in the opinion of many excellent judges, did not materially differ from the old autumn-flowering variety of C. labiata.

"Reichenbachia." — We have already announced the commencement of the second series of this sumptuous publication, edited by Mr. Sander, with the assistance of Mr. Rolfe and other botanists. The second part of this new series is before us, and contains figures, coloured, of the following plants:—

Odontoglossum crispum var. Mundyanum, t. 5.—A magnificent form of crispum, with the flowers richly marked with bold reddish-brown blotches. "Five thousand have to bloom before such a treasure is secured;" they all come from one and the same district, and "the blood of an allied species is not in them." The shape of the floral segments is suggestive of a resemblance to some forms of O. Pescatorei.

Lælia præstans, t. 6.—A more beautiful gem than this it would be difficult to find in the whole of the princely order to which it belongs; its culture is easy, the cool-house being best suited to its requirements, excepting in the case of late autumn or winter growths, which are best developed in the cool end of the Cattleya-house. It may be grown in pans or baskets, and potted in the usual Lælia compost. The plants should at all times be kept clean, and free from insect pests. The excellent figure was taken from a plant in the collection of C. W. Lea, Esq., Parkfield, Hallow, Worcester.

Dendrobium Phalænopsis var. Statterianum, t. 7.—This is one of the showiest and best of the Pacific Island Dendrobes. Its habit and its flowers are characteristic of a distinct section of the genus. The flowers resemble those of a Phalænopsis in shape, and are of a deep rosy-purple, the lip a still deeper maroon. It flowers from July to September, and continues to produce flower-spikes from the same bulb for several years in succession. "It should be cultivated in pans or baskets, using the best brown fibrous peat and sphagnum moss for its sustenance, and must be placed in a light position near the glass, little or no shade being given. A stove or the hottest part of the East Indian-house is necessary for its perfect development. Care should be taken in the resting season, and sufficient water must be given to prevent the stems from shrivelling or losing their leaves. The illustration is taken from a plant in the collection of Thomas Statter, Esq., Stand Hall, Whitefield, Manchester.

Cypripedium Boxalli var. atrata.—A very fine form of a distinct and well-marked species, remarkable especially for the dorsal sepal, which is narrowed at the base, green or olive-green, thickly overlaid with rich purplish-brown blotches, the margins and apex being white. The variety flowers in spring, and "is best grown in an intermediate house, although it is possible to grow it well in a cool one. It will grow in peat or loam, or a mixture of the two combined. The best time for repotting it is after the flowering season is finished," say in April. The illustration is taken from a plant in the collection of F. G. Tautz, Esq.

Chrysanthemums at Mytton.—We have received a photograph, showing the interior of a house in the gardens of Mytton Hall, Shrewsbury, the dimensions of which are 60 feet by 18 feet. The inmates comprise some 500 plants of all sections of the Chrysanthemum, well grown under the management of Mr. R. C. Townsend, who, we are informed, has only had them under his charge since April of the present year. Avalanche had four and five blooms on each plant, furnished with large, healthy foliage down to the pots. Especially good, we are told, were the blooms of Sarah Owen, Madame Laing, Comte de Germiny, Soleil Levant, Stanstead White, Stanstead Surprise, Sunflower, &c. The incurved were not large, but were beautifully built specimens, the petals very wide and regular, and the incurve perfect. There are, also, our informant tells us, some 200 small plants in 5-inch pots, bearing one flower each, in splendid condition, and very suitable for table decorations or small vases, in height from 5 to 10 inches, which were struck in a brisk bottom-heat in July. The cuttings were taken from the tops of the spare shoots which were allowed to grow on his large plants, and would well repay the trouble bestowed on them; and another advantage is, that the best cuttings were obtained from these small plants for the production of large blooms for the following year. J. R. Greatorex, Esq., is an ardent lover of the Chrysanthemum, in fact, of his garden generally, and he gives his gardener every encouragement.

The Royal Society.—At the anniversary meeting on the 1st inst., Sir William Thomson, the eminent mathematician and electrician, was elected President in the room of Sir Gabriel Stokes, M.P. The newly-instituted Darwin Medal was awarded to Mr. A. R. Wallace for his independent origination of the theory of the origin of species by natural selection, and for his researches in the Malayan Archipelago. The medal has upon the obverse an excellent portrait of the great man whom it commemorates. The reverse bears a pleasing wreath of plants that have been treated of in Darwin's writings—Dionæa, Primroses, Orchids, and Ampelopsis hederacea—surrounding the name "Carolus Darwin" between the dates MDCCCIX., MDCCCLXXXII., the years respectively of Darwin's birth and death. The medal is 2¼ inches in diameter, and is struck in silver. It is to be awarded every second year. The general design of the medal was suggested by Dr. John Evans, Treasurer of the Royal Society, and President of the Numismatic Society, and the execution of the dies was entrusted to Mr. Allan Wyon, F.S.A., chief engraver of Her Majesty's Seals.

Nova Scotia: The Potato Crop.—There has been more anxiety than usual respecting the Potato crop; this was induced at an early period by the unusually virulent attacks of the Potato-beetle, as well as by the rotting of seed in the ground. The area planted, also, was not so great as usual. The Potato crop is not even now (November 4), entirely harvested, the recent rains having obstructed field

work. It is, however, a mistake to suppose that Potatos lose by late harvesting. While mild weather lasts they are safer in the ground than in the cellar. In spite of the partial failure this season of the Potato crop in nearly every country where it is grown, the general results in Nova Scotia must be regarded as satisfactory. It is true that the great Potato counties of Annapolis and Kings show only 81 and 96 per cent. respectively, and that the quality in the latter is only 81, whilst that of Annapolis descends to 66. In a return from one district in Annapolis it is stased that the quantity is reduced 40 per cent. by rot. But, while these are two of the principal counties that export Potatos, large quantities are grown for home consumption throughout the rest of the province. The returns show an average for the whole province of 98 per cent. The large crops in some of the counties are remarkable, and may seem incredible to those who do not reflect that the loss this year has been chiefly in early sorts grown for market, the late winter Potatos, so much grown in some districts for home use, being remarkably sound. *G. L.*

Visit of the Prince of Wales to Reading.—The Prince of Wales, as Grand Master of the Freemasons, will on the 15th inst., visit Reading, for the purpose of installing the Duke of Clarence and Avondale, as Grand Master of the "new province" of Berks. The ceremony will take place at the Town Hall, but as there is no building sufficiently large in Reading to accommodate the brethren who wish to participate in the inevitable banquet, Messrs. Sutton & Sons have put one of their large stores at the disposal of the committee. It is the same store as that in which, at the time of Her Majesty's Jubilee, 2000 aged poor were entertained at dinner. Messrs. Sutton not only give the use of the room, but undertake to decorate the apartment in a suitable manner with Primulas, Cyclamens, and other flowers which have been made specialties by the firm for many years past.

Frost in Surrey.—The Rev. W. Wilks tells us that in his garden at Shirley, near Croydon, an extraordinarily low temperature was experienced on Friday, November 28, from 5.30 to 6.30 p.m. The thermometer, placed at 4 feet from the ground, registered −2° Fahr. (34° of frost!). Even the leaves of Aucubas and variegated Hollies turned black. After 6 p.m., the temperature rose rapidly, and during the night did not fall below 13° Fahr. (19° of frost). In a garden a short distance lower down the hill, the thermometer did not go below 4° Fahr.

Utrecht.—The Genootschap voor Landbouw en Kruidkunde will hold at Utrecht, a great floral exhibition from April 23 to April 26 inclusive. The schedule includes ninety-eight classes, divided into five divisions. The Secretary is M. Th. Waller, Heerenstraat, Utrecht.

Willows.—Dr. F. Buchanan White in the last issue of the *Journal of the Linnean Society*, publishes "A Revision of the British Willows," which includes an account of the distinguishing features of each species.

Town Gardening.—The following report of the Town Gardening Committee of the Field Naturalists' Society of Manchester has been drawn up by the members of the Sub-Committee on Air Analysis. Dr. Tatham (Medical Officer of Health), whose special experience will be of great value, has kindly consented to co-operate in the investigation proposed:—"It is well known that the air of Manchester and Salford contains many impurities, and the effect of these impurities on animal and vegetable life is apparent to every one. As a matter of fact, however, our information as to the exact amount and nature of the abnormal constituents of the atmosphere is extremely meagre; and systematic and complete analyses of the air seem to us to be urgently needed. For this purpose, observations should be made on the composition of the air, at as many typical centres as possible, and should be continued at regular intervals for at least a year. The number of centres at which observations can be made will, of course, largely depend on the funds placed at our disposal, but we propose to set up apparatus for analysis as soon as possible in the following places:—1, The Town Hall; 2, the Owens College; 3, Hulme (precise locality to be determined); 4, Ancoats (precise locality to be determined); 5, Strangeways (precise locality to be determined); 6, Salford, two stations (precise locality to be determined). The experiments will be conducted so as to afford definite information on many points of importance to the community, such, for instance, as:—(1) The composition of the air in densely populated districts, as compared with that in thinly populated and suburban districts. (2) The relation between atmospheric impurity and prevalent sickness and mortality. (3) The amount and distribution of those impurities which are known to be specially prejudicial to plant life, *e.g.*, sulphurous acid. (4) The extent to which smoke and noxious gases are due (*a*) to dwelling-houses; (*b*) to factories. (5) The nature of fog, and the character of the air during the prevalence of fog. The experiments will involve a considerable outlay (1) for duplicate sets of apparatus; (2) for assistants at the various stations; and we estimate that to cover the necessary expense a sum of £200 will be required. We may, in conclusion, draw attention to the fact that a committee of scientific men [A sub-committee of the Scientific Committee of the Royal Horticultural Society with a grant of £100 from the Government grant administered by the Royal Society] has been appointed to conduct a similar investigation of the air of the metropolis; and we hope to be able, through the medium of our corresponding members in London to work in concert with them. (Signed) G. H. Bailey, D.Sc., Ph.D., Lecturer in the Victoria University. J. B. Cohen, Ph.D., Lecturer in the Victoria University. P. J. Hartog, B.Sc., Berkeley Fellow of the Owens College. J. Tatham, M.A., M.D., Medical Officer of Health for Manchester.

THE INFLUENCE OF THE SOIL ON THE GROWTH OF ANNUALS.

There is scarcely any information to be obtained in ordinary text-books as to the amount and kind of difference produced on plants by different soils. I made this summer an experiment on this point, of which the following account may be of some interest to practical gardeners. Any former experiments on the same lines are unknown to me, and I should be very glad of any references on the subject.

These experiments were conducted at Newton, Dumfries, in a low-lying part of the garden protected on every side from the wind, but with a good sun-exposure.

Five parallel beds, each 9 feet long, and 3 feet wide, were formed, running approximately north and south, and separated from one another by ash-paths, 1 foot broad. The surface soil consisted of a fairly good sandy loam, the subsoil was a red, rather gravelly sand (due to the *détritus* of the new red sandstones), and is a common one in the district.

The first or most eastern, second, fourth, and fifth beds were all completely cleared of soil to a depth of 2 feet 6 inches. The third or "sand-bed" was carefully cleared of all loam (to 18 inches), and was then fill up with the pure sand derived from the lowest parts of the other beds. The first "or peat-bed" was completely filled with a slightly earthy peat, and covered with only 2 inches of loam on the upper surface. The second, or "lime-bed," consisted of a bottom layer of sods (9 inches), and was then filled up with sandy loam, with which two barrow-loads of lime were mixed as equally as possible. The fourth, or "leaf-mould-bed," was filled with a bottom layer of sods (9 inches), followed by alternate spadefuls of loam and well-matured leaf-mould (Beech). The fifth, or "manure-bed," was the same as the fourth, but stable-manure was used instead of the leaf-mould. I have to thank Mr. Gillon Fergusson for his kind assistance in forming some of the beds; and also Mr. Murray, who, in fact, made the observations as to the appearance of the rough leaf and first bloom when I was unable to be at home. Seeds from the same packet were sowed in a straight line across the five beds, from east to west.

Table 1.

Appearance of Cotyledons, eighteen cases.

	Peat.	Lime	Sand.	Leaf-mould.	Manure.
Œnothera rosea ...	May 8	May 8	May 8	May 8	May 8
Saponaria calabrica ...	,, 8	,, 6	,, 8	,, 5	,, 5
Nemophila insignis ...	,, 6	,, 6	,, 6	,, 6	,, 5
Mignonette	,, 6	,, 6	,, 6	,, 5	,, 5
Nigella damascena ...	,, 9	,, 9	,, 11	,, 8	,, 10
Helichrysum procumbens	,, 6	,, 8	,, 8	,, 6	,, 6
Candytuft	,, 6	,, 5	,, 5	,, 5	,, 5
Lupinus subcarnosus ...	,, 4	,, 4	,, 4	,, 3	,, 4
Nasturtium	,, 10	,, 10	,, 9	,, 8	,, 10
Convolvulus minor ...	,, 5	,, 5	,, 4	,, 3	,, 3
Mathiola bicornis ...	,, 5	,, 5	,, 5	,, 4	,, 4
Linum rubrum... ...	,, 5	,, 5	,, 5	,, 4	,, 4
Asperula azurea setosa	,, 6	,, 9	,, 9	,, 6	,, 10
Briza minor	,, 8	,, 8	,, 8	,, 8	,, 8
Papaver umbrosum ...	,, 8	,, 8	,, 8	,, 8	,, 8
Clarkia pulchella ...	,, 8	,, 6	,, 8	,, 6	,, 6
Centaurea cyanus minor	,, 4	,, 5	,, 4	,, 2	,, 2
Helichrysum bracteatum	,, 6	,, 6	,, 6	,, 6	,, 6

Table 2.

Number of Days elapsed between the Appearance of the Cotyledons and that of the "rough" or Foliage Leaf.

	Peat.	Lime.	Sand.	Leaf-mould.	Manure.
Helichrysum bracteatum	11	13	15	10	15
Centaurea cyanus minor...	15	14	15	13	15
Clarkia pulchella ...	18	19	18	17	17
Papaver umbrosum ...	11	11	12	11	12
Briza minor	12	12	13	11	11
Asperula azurea setosa	20	14	17	17	16
Linum rubrum... ...	18	18	18	16	17
Mathiola bicornis ...	16	14	17	15	16
Convolvulus minor ...	20	21	22	20	23
Nasturtium	12	12	13	14	12
Lupinus subcarnosus ...	15	15	13	12	12
Candytuft	16	14	15(?)	15	15
Helichrysum procumbens	13	13	14	14	15
Nigella damascena ...	26	17	26	15	21
Mignonette	16	15	20	14	16
Nemophila insignis ...	13	14	16	11	15
Saponaria calabrica ...	15	17	18	17	18
Œnothera rosea ...	15	14	15(?)	14	14
Total ...	282	267	297	256	280
Average ...	15⅝	14⅛	15 17/20	14⅛	15½

Table 3.

Number of Days between Appearance of Cotyledons and First Bloom.

	Peat.	Lime.	Sand.	Leaf-mould.	Manure.
Centaurea cyanus minor...	80	80	81	74	73
Papaver umbrosum ...	74	73	80	69	72
Asperula azurea setosa	62	60	60	63	58
Mathiola bicornis ...	48	53	53	49	54
Nasturtium	69	70	73	72	69
Candytuft	70	71	72	70	69
Mignonette	74	66	65	64	71
Saponaria calabrica ...	77	78	80	85	85
Total ...	554	551	584	546	551
Average ...	69 25	68·8	70·5	68·25	68·8

TABLE 4.

Number of Flowers per Plant.

	Peat.	Lime.	Sand.	Leaf-mould.	Manure.
Asperu'a azurea setosa	4·3	34·5	6·3	90·22	33·4
Papaver umbrosum ...	2·75	47·4	7·4	34·8	26·6
Convolvulus (flowers on main-shoot) ...	4·1	13·5	7·2	35·5	35·6
Mathiola bicornis ...	5·9	15·3	9·2	19·6	17·3
Candytuft (flower in centre corymb) ...	17·4	45	45·3	42·7	50
Lupine	24·5	48·8	36	111·3	86·5
Nasturtium	2·4	9·5	13·1	35·5	33·2
Total ...	61·4	214	124·8	367·6	282·6
Average ...	8·8	30·6	17·8	52·5	40·4

TABLE 5.

Number of Side Branches.

	Peat.	Lime.	Sand.	Leaf-mould.	Manure.
Nasturtium	0	0	0	8·5	?
Lupine	5·5	4	6	5·6	4·67
Candytuft	1·18	6	4·33	13·25	6·38
Mathiola	·04	65	24·25	45·6	63·6
Saponaria	6·35	8·5	14·5	38·8	38·3
Convolvulus	0	·6	0	6·8	8·8
Linum	·2	·1	1·2	15·38	1·1
Total ..	13·4	84·2	50·3	134	1.3·2
Average ...	2·2	14	8·2	22	20·5

TABLE 6.

Height of Plants.

	Peat.	Lime.	Sand.	Leaf-mould.	Manure.
Nasturtium	2·5	4·82	3·28	15·3	15·88
Lupine	24·7	36·8	40·3	51·83	45·83
Candytuft	7	12	9·96	16·8	13·05
Mathiola bicornis ...	84	26·44	16·71	26·4	25·72
Saponaria calabrica ...	4·48	2·5	4·45	11·4	4·5
Convolvulus ...)					
Cyanus minor ...)	5·02	18·5	8·86	48·3	42·19
Linum rubrum ...	3·93	6·93	7·19	25·99	10·62
Papaver umbrosum ...	8·13	26	14·9	31·39	24·44
Asperula azurea setosa	7·70	13	7·2	17·9	10·7
Total	71·86	146·99	112·8	245·3	215·93
Average ...	7·98	16·33	12·53	27·25	23·99
	1	2·04	1·56	3·41	3

The seeds used were those of common annuals, and formed originally eighteen rows, separated by 6 inches from one another. I soon found, however, that they were far too close together, and they were thinned out and reduced to eight in number. Each row was also carefully thinned, so that the plants were the same distance apart. The first point noted was the appearance of the seed-leaf or cotyledon above the soil. In one case only (that of the Nemophila insignis) the cotyledons appeared in the manure-bed one day before they appeared in the leaf-mould. In every other case those in the leaf-mould were first, or as early as the others. Without quoting the tables (see Table 1), it is sufficient to say that the manure-bed showed a delay of from 1 to 4 days in the appearance of the cotyledons, or taking an average (in the eighteen cases) the cotyledons appeared in the manure $\frac{8}{18}$th of a day after those in the leaf-mould. Similarly those in the lime appeared $\frac{17}{18}$th of a day; those in the peat, $\frac{15}{18}$th; those in the sand $\frac{9}{18}$th, respectively, after those in the leaf-mould.

A distinct quickening of germination was therefore noticeable in the leaf-mould and manure-beds. The "rough," or foliage-leaves, appeared at very different dates in the different beds. In three cases those in the lime appeared first, and in two cases those in the peat and manure appeared a day before those of the leaf-mould. On an average of the eighteen cases, the number of days between the appearance of the cotyledons and that of the rough leaves (see Table 2) gave the following results:—

Leaf-mould.	Lime.	Manure.	Peat.	Sand.
$14\frac{8}{18}$ days	$14\frac{17}{18}$	$15\frac{8}{18}$	$15\frac{15}{18}$	$15\frac{17}{18}$

The result is striking, as showing the extremely small influence of the manure, and the relatively rapid growth of the lime and leaf-mould plants.

The time that elapsed between the appearance of the cotyledons, and that of the first bloom, showed, taking the average of the eight fittest annuals which were allowed to survive, a very small difference. The averages in days were:—

Leaf-mould.	Manure.	Lime.	Peat.	Sand.
68·25	68·8	68·8	69·5	70·5

Here a light sandy soil is again shown to be the worst possible, and leaf-mould comes first (Table 3).

The next point studied was the number of flowers per plant, and the averages of the seven cases where there was enough material to judge from, in each bed were as follows:—

Peat.	Sand.	Lime.	Manure.	Leaf-mould.
8·8	17·8	30·6	40·3	52·5

Another very striking proof of the favourable influence of this soil on annuals (Table 4).

Some of the figures are extremely striking, *e.g.*, Lupine in leaf-mould 111·3, and only 36 in the sand, 48·8 in lime, and 86·5 in manure!

very clearly from this table. In three cases the number of branches were very small indeed, and the plants scarcely seemed able to live; but Mathiola bicornis had, on an average, sixty-five branches per plant, and a similar increase of branching appeared in several other cases where there was not enough material to tabulate.

The average height of the plants in each bed (nine cases) showed, measured:—

Peat.	Lime.	Sand.	Leaf-mould.	Manure.
7·98	16·33	12·58	27·25	23·99

This order was never departed from, except in a very few cases where the sand plants occasionally overtopped those of the lime, and the height of those in the last two beds was very obvious when looking at the plants while growing.

The measurements of the depth to which the roots penetrated, and the diameter of the horizontal space covered by them, showed the same sequence. The figures of the averages found were:—Peat, 2·4 × 4·9 (in only one case the roots seemed able to penetrate into the peat, and then the length was only 3 inches); lime, 5·8 × 5·8; sand, 5·5 × 4·1; leaf-mould, 7 × 6·2; manure, 6 × 6·1.

In order to see whether there was any relation between the space exhausted by the root and the height, or between the latter and the number of flowers, I calculated the proportionate values of these averages, setting the peat average as unity. The fairest approximation to the space tapped by the roots seemed to me the length multiplied by the horizontal spread. The results were:—

TABLE 7.

Length and Breadth of Root Surface.

	Peat.	Lime.	Sand.	Leaf-mould.	Manure.
Nasturtium	3·2 × 3	5 × 3·5	7·4 × 4	8 × 4	10·5 × 4·2
Lupine	2 × 18	11·4 × 15·7	12·1 × 6	14 × 10	9·3 × 9·8
Candytuft	1·4 × 3·3	2·1 × 5	4·3 × 3·5	4·4 × ·4	3·7 × 3·9
Mathiola bicornis	1·7 × 2	8 × 9·4	6·8 × 4·2	7·8 × 7·4	7·3 × 9
Saponaria calabrica	2·3 × 5·1	4·5 × 2·5	3·4 × 5·6	5·3 × 7·7	5·3 × 8·9
Convolvulus	2·2 × 4	4·8 × 4·7	3·8 × 3·4	6·5 × 5·8	6 × 4·8
Linum rubrum	2 × 1·2	3·2 × 1·8	4·4 × 3·5	5·3 × 5	3 × 3
Papaver umbrosum	2·4 × 3	7·8 × 5·7	3·5 × 3·3	6·4 × 5·2	5·8 × 4·5
Asperula azurea setosa	2·85 × 4·5	5·5 × 4·25	3·5 × 3	5·5 × 6·7	2·9 × 6
Totals...	22·1 × 44·1	52·6 × 52·55	49·2 × 36·5	63·2 × 55·8	53·8 × 55
Averages	2·4 × 4·9	— 5·8 × 5·8	5·5 × 4·1	7 × 6·2	6 × 6·1
	10	31·90	22·55	43·4	36·6
	1	3·2	2·3	4·3	3·6

TABLE 8.

Average Length and Breadth of the Leaves.

	Peat.	Lime.	Sand.	Leaf-mould.	Manure.
Nasturtium	·65 × ·73	1·445 × 1·505	2·4 × 1·3	2·075 × 2·144	2·523 × 2·540
Lupine	1·88 × ·547	2·55 × ·737	2·41 × ·7	3·268 × ·928	3·04 × ·85
Candytuft	1·01 × ·208	2·2 × ·325	2·363 × ·45	2·487 × ·488	2·465 × ·375
Mathiola bicornis	1·11 × ·165	3·896 × ·631	3·233 × ·533	4·016 × ·654	4·198 × ·683
Saponaria calabrica	1·171 × ·341	1·395 × ·7	1·725 × ·455	2·174 × ·568	1·679 × ·509
Convolvulus	·918 × ·308	2·322 × ·78	1·235 × ·477	3·086 × 1·393	3·275 × 1·296
Linum rubrum	·403 × ·088	·725 × ·18	·763 × ·189	1·69 × ·573	1·058 × ·259
	6·2 × 2·79	16·54 × 4·87	14·13 × 4·11	18·81 × 6·68	18·06 × 6·79
	·9 × ·398	2·36 × ·695	2·02 × ·587	2·7 × ·95	2·058 × ·97
	·1	·26	·22	·3	·289
	·1	·17	·146	·23	·24

Closely connected with the number of flowers is the amount of branching (Table 5). The number of side branches in six cases gave the following averages:—

Peat.	Lime.	Sand.	Leaf-mould.	Manure.
2·2	14	8·2	22	20·5

A peculiar characteristic of the lime-bed appears

	Peat.	Lime.	Sand.	Leaf-mould.	Manure.
Height	1	2·04	1·56	3·41	3
Root space	1	3·2	2·3	4·3	3·6
Number of flowers ...	1	3·5	1·9	5·9	4·67

This shows that the sequence is the same, but the numbers are not near enough to prove any actual

relation. It is interesting to see that the humus and manure brought about a greater increase in the number of flowers relatively than in the heights of their plants.

I found that the same sequence obtained also in the length of the petioles, though this was derived from the measurements of only two plants (Nasturtium and Lupine). I had a complete series of measurements of the length and breadth of the leaves (or leaflets) in seven cases. (Table 8)

This gave a general average of, for the length of leaf: peat, ·9 inches; lime, 2·36 inches; sand, 2·02 inches; leaf-mould, 2·7 inches; manure, 2·58 inches. For the breadth: Peat, ·4 inches; lime, ·695 inches; sand, ·597 inches; leaf-mould, ·95 inches; manure, ·97 inches. If one divides these length averages by nine, and the breadth averages by four, the proportions of these numbers are :—

	Peat.	Lime.	Sand	Leaf-mould.	Manure.
Length	1	2·6	2·2	3	2·9
Breadth	1	1·7	1·5	2·3	2·4

This shows clearly that the humus and manure produces both greater length and greater breadth in the leaf, but that the increase in length is the greater relatively—in other words, the leaves become proportionately narrower. It is very likely that the vigorous growth in the leaf-mould and manure lead

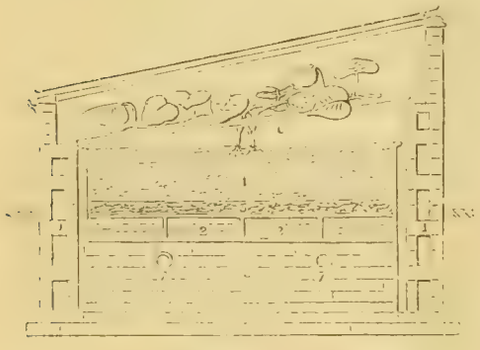


Fig. 125.—A FORCING PIT FOR MELONS, ETC.

to a certain amount of mutual shading, and tended in this way to produce this difference.

In explaining the effect of these soils, of course the larger amount of organic nitrogenous matter in the leaf-mould and manure-beds must have largely accounted for the vigorous growth and fertility of their plants. The amount of water, however, is very important, so far as annuals are concerned, and the bad effect of the sand and lime may be due to this cause. In peat, however, the amount of water is far greater than in any other soil. The following figures are given by Wollny, in his *Forshungen Bd.*, p. 1, for the amount per fixed volume: Peat, 166,982 grains; humus kalk sand, 137,897; pure kalk sand, 100,443; loam, 119,949; quarr sand, 33,111. The relative order of these soils in this respect is confirmed by Heinrich Wollny's *Forch Bd*, ix., Schwarr, *Arb. Landiv. Chem. Vers. Wien*, 1870-77; and by Wollny himself in other papers. Peat is therefore by far the wettest soil. Schwarr (l. c.), calculates that 84 per cent. of the volume of peat is composed of air spaces, while they occupy only 40 per cent. in white sand. Moreover, Wollny has very clearly shown that peat is, probably on account of this enormous amount of water, extremely cold, and this may I think account for the incapacity of the roots to penetrate it.

To sum up, these experiments show that leaf-mould, manure, lime, sand, and peat are in descending order of value for the growth of annuals. The height, length, and spread of roots, length of leaves, number of branches and of flowers per plant all follow the above order. The breadth of the leaf appears slightly more in the case of the manure plants than in that of the leaf-mould. Next summer I intend to continue the experiment, sowing seeds saved from each bed in the same soil. It would be interesting to see whether a certain amount of lime mixed with the leaf-mould would not give an even more striking result. *G. F. Scott-Elliott, M.A., F.L.S.*

EARLY SEED-SOWING IN HOT-BEDS.

In the course of the next three months, gardeners will be engaged in making up hot-beds of a mild kind for the forwarding of early vegetables, such as Potatos, Turnips, Onions for pulling green, Carrots, Lettuces, Endive, Peas, and in the colder parts of Cabbage. It is a practice often inculcated in gardening books that Radishes be sown in lines between the rows of the above-named kinds or broadcast. Generally the Radish seeds are used too abundantly, with the result, that, failing the most timely thinning of the seedlings, they spoil each other by crowding, and few really good roots are obtained. Besides being a means of saving much seed, both of Radish and that of the more permanent crop, it will be found

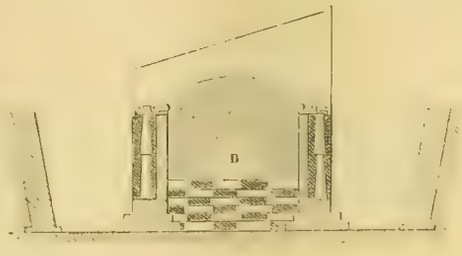


Fig. 127.—PIGEON HOLE FORCING PIT.

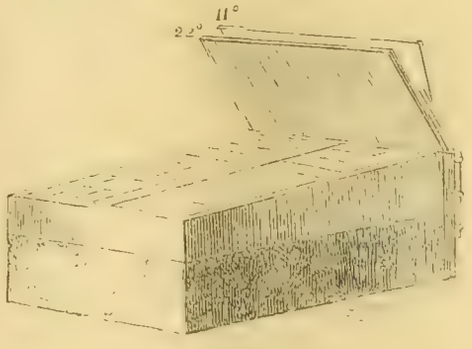


Fig. 128.—HOTBED FRAME.

that better results can be obtained by sowing all seeds in drills, or putting them into the soil in lines with the finger and thumb. Doing this admits of exerting a gentle pressure on the soil in the neighbourhood of the seed, which is very beneficial to it, and in the case of Radish, the seed should be put in a quarter of an inch deep, and 4 to 6 inches apart, according to size of top. Not more than two seeds of Radish need be placed in one spot, if new, but if the seed is more than one year old, three or four seeds should be employed. The same rule holds good for Turnips and Peas, but the distance from plant to plant must be greater. Lettuces and Endive are best when sown in boxes or pans thinly, and placed on a shelf close to the glass in a warm house, and when vegetated they should be removed to one less warm, to avoid the risk of getting drawn and weakly plants.

These plants, as well as those of Cauliflowers which are raised sometimes in the same way, should not remain longer in the seed-pans or boxes than till they have made three or four true leaves, when pricking off into other pans, &c., should be done, in all cases avoiding too close pricking out. This for ordinary private gardens, but in large establishments the seeds of Lettuces and Endive, &c, are sown in warm frames, and pricked off into others when large enough, or thinned out in the case of the salads to a proper distance, the thinnings being used in other frames. The whole operation of raising these easily-spoiled plants depends on close attention to ventilation, on the maintenance of a gentle bottom-heat, from the time of sowing the seed till the crop is gathered, and on there being sufficient warmth in the frame, from either dung-linings or hot-water pipes to admit of ventilation, more or less according to the weather, being afforded night and day.

The distance of the soil from the glass is another point of great consequence, for if it be too much, the plants will get drawn in spite of their standing wide apart; moreover, the front rows will be out of reach of the sun, in consequence of the depth of the front wall of the frame, and that is a disadvantage in the winter season. The surface of the soil, when the bed is finished, may be 1 foot distant in a Potato frame, and 6 inches or less in any other, and by sinkage of the materials, this distance will be doubled by the time the crop is fit to use, unless the bulk of them consist of Oak or Beech leaves; the shrinkage of stable-manure and leaves is very great, however well the bed may be constructed.

Not much success will reward the cultivator if he have not a supply of dry litter of some sort to put over the frames at night, and this should always be used 6 or 10 inches thick, be the weather mild or the reverse. On mild nights its use will allow of more ventilation being given, which will greatly benefit the crop. If dung linings are used, never allow the litter, or the mats that are used to cover it, to overlap the front wall so much as to lay on the lining itself, there being the danger by so doing of the strong ammonical fumes of the dung getting into the frame and thus destroying most of the plants. Always afford water before the soil gets dry—let it be warm, and the job done when there is the least

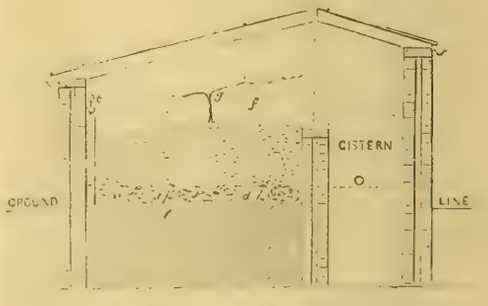


Fig. 129.—FORCING PIT WITH SPAN-ROOF.

chance of danger from cold. Do not throw off the lights as is commonly done, but draw them back half-way, or less, and one at a time, and water the front of the frame, afterwards watering the back part in the same manner.

Of course as the sun gains power in late winter there are certain parts of the day that may be utilised for watering the frames, when these precautions will not be needed, and when, indeed, abundant ventilation is possible and desirable. If vegetables are wanted as solid in texture as such out-of-seasoy things may be, the soil should not be made very light, still it should be friable and somewhat porous and only moderately rich. Manure-water of some kind can always be afforded when it is seen that the plants stand in need of a fillip. Weedy soils of any kind should not be employed, as such give endless trouble in keeping the frames clear of weeds. Good loam that has been stacked a couple of years and turned over—the outsides into the middle—once or twice, and on which no weeds have been allowed to grow; leaf-mould or thoroughly-rotted manure, at least two years old, and which has been occasionally turned over, and burnt soil or garden refuse added, make a first-rate frame compost if the loam and burnt soil form two-thirds of the whole.

Very stiff loam is ameliorated by being mixed with coarse sand or fine coal ashes, and all the materials are the better for being screened or sifted in a ¾ inch sieve before use. Potting-bench refuse is excellent stuff as a covering for the seeds.

In the illustrations on this page will be found the prevailing ideas with regard to appliances used to force vegetables of all kinds. Fig. 126 is a good form of the ordinary forcing pit, equally useful in summer or winter. It is provided with hot-water pipes for bottom heat, and may also have pipes running round it for furnishing top heat. By filling it with tree leaves and a little stable dung, it

makes a capital pit for Asparagus and any of the vegetables mentioned in our note. Fig. 127 is the less well-known, and somewhat discredited, pigeon-holed pit, heated inside and out with stable dung and leaves. It is a useful structure, but its management involves a large amount of labour. Fig. 128 is the ever-useful hot-bed frame with a contrivance at the back for conserving sunheat—useful in winter. The necessary linings are not shown. Fig. 129 is a modification of Fig. 126, not quite so useful in the forcing of winter crops, but which is a suitable place in which to grow Rhubarb, Pine-apples, Melons, plants, &c.

GUNNERAS.

There is no cultivated hardy plant possessing such large handsome foliage as Gunnera manicata, and this, when grown in a suitable position, makes a bold, striking, ornamental effect. The shape of the enormous leaves bears a resemblance to those of the Rhubarb, though of course on a much larger scale.



Fig. 130.—Gunnera scabra, in Sir C. Nicholson's garden, Totteridge, N.

Growing on the bank of the ornamental water in these gardens might have been seen during the past summer and autumn an extra fine specimen, and which has been much admired by visitors, a glimpse being quite conclusive to convey to one's mind that the plant was fully at home in its position, literally speaking; and a note concerning this plant will convey an idea to readers of the *Gardeners' Chronicle* of the value of this plant for ornamental effect, where a suitable position can be found. It is planted, close to the edge of the ornamental water, having a background formed by a grassy mound, the aspect being easterly; it has several crowns, and spreads along the bank some 17 feet, having a height of 9 feet; the blade of a leaf measured upwards of 20 feet in circumference (roughly speaking), with a diameter at the widest part of 7 feet 6 inches, and there were several leaves of like size upon the plant; the petioles are stout, and covered with spines.

There are several inflorescences upon the plant, the finest spike measuring 4 feet 3 inches in height; in form, it bears some resemblance to a cylindrical brush, tapering to a point, the circumference of the thickest part measuring 4 feet 6 inches. This noble plant forms a complete specimen, being furnished with leaves from the base, and several could take shelter under its foliage in a shower of rain without becoming wet. It requires no special treatment, and is perfectly hardy, although as an extra precaution in severe winters, a few of its own thick leathery leaves are placed above the crowns. In the spring it is much benefited by a mulching of rotten manure. A native of South Brazil.

G. scabra.—The plant passing under this name is of much smaller dimensions than the above, and better adapted for planting in a drier situation, as upon a lawn in an isolated position. Native of Chili.

Both of the above may be raised from seed, which ripens in this country, and should be sown as soon as ripe, though for seed it takes some years before a plant attains its full size; offshoots or crowns are readily produced, which, if taken off, soon grow to an ornamental size.

G. magellanica.—This has a creeping habit, and attains only 1 or 2 inches in height, and has leaves about the size of a florin.

G. monoica.—The growth of this tree is even smaller than the one above-mentioned. They are both in the collection in these gardens, though of little value as garden plants. In this genus we have an excellent example of the two extremes to which leaves grow, those of the smaller kinds measuring only 1 or 2 inches in diameter, while in the largest we find leaves upwards of 200 inches in diameter. They belong to the N. O. Haloragæ. *W. Harrow, Botanic Garden, Cambridge.*

[Photographs of remarkable specimens of Gunnera have been lately sent us by Herbert W. Taylor, Esq., from Hadley Bourne, Barnet; and from Mr. F. W. Burbidge, Trinity College Garden, Dublin. In Finsbury Circus, London, the plant does well under the shade of trees, though it never flowers in that situation. Ed.]

NOTES ON VINES AND GRAPES.

(*Continued from p. 565.*)

Lady Downe's Seedling.—The most useful Grape of good quality for late keeping, on the Vine or in bottle, is the above-named variety. The Vine has a very vigorous constitution, is free in bearing, and will carry two bunches on a lateral just as well as one. I always find it at the finish somewhat deficient in colour round the footstalk, otherwise it is of a splendid black. It is a Grape that is much valued in the market late in the season; very rarely is it subject to shanking, but it is known to "scald" sometimes. I incline to the idea that this fault, by suitable treatment at the stoning period, may be got over. At that period I give less root-watering, a little more fire-heat, and more ventilation. If once the berries get steamed, scalding will be sure to take place. It is of a rich Muscat flavour when well ripened, and although the berries are hard, it is, in its season, hard to beat. The bunches are about 1 lb. weight, less, rather than more, and a larger number of bunches may be left on the Vine to make up the weight the Vine is capable of bearing without detriment to its health. The variety is a very free rooter, and for the benefit of the crop I would lift, or get under the roots at least once in three years. A span is the best form of house for this Grape, although I have it to-day in very good condition in a lean-to. As a Vine for extension, it is well adapted. I have never gone more than three rods, but I used to have nearly 20 lb. of fruit on each rod. Some persons complain, especially about Christmas, that this variety is hard eating, and sometimes tart; this tells at once that the Grapes would be all the better for keeping them till the spring. To have Lady Downe's fit for table at Christmas, the Vines should be started in January, or February at the latest. With the foliage in good condition, Grapes will hang on the Vine a long time without any shrivelling, but for the good of the Vines the coming season, it is better not to leave them hanging beyond the beginning of January. The Grapes keep well when cut and bottled. *Stephen Castle.*

NURSERY NOTES.

GREENHOUSE RHODODENDRONS AT MESSRS. J. VEITCH & SONS'.

At the present time there is a beautiful display here of these beautiful decorative subjects of the Java and multicolor section. Amongst the latter are some very fine colours, ranging from the deep crimson-rose, orange, and yellow to pure white. The property of this section consists of a compact and free-flower habit of growth; as yet the stock is much too limited to be put into commerce.

In the other section, named for the sake of distinguishing them, the Java, the finest in bloom was Jasminiflorum carminatum. There was a stock of this variety in 4-inch pots, their beautiful trusses of carmine-coloured flowers producing a very pretty effect. Minerva is a fine rich yellow. Rose Perfection, a beautiful rose; Luteum roseum is an exceedingly fine flower of a delicate satin-rose, the centre toned with light yellow; Monarch has good trusses of clear buff-

yellow, flowers tinged with orange; Amabile, very distinct, flesh tinted with rose; Brilliant, orange-scarlet, considered an improvement on Duchess of Edinburgh, with larger trusses, and a more vigorous grower; Ophelia is a novelty in colour, this being a soft light rose, with light orange-yellow; Aphrodite, a vigorous grower, and having exceedingly fine trusses of almost pure white flower, much resembling in colour Princess Alexandra, but a much finer variety than the last-named. Amongst several other kinds not in commerce, noteworthy were Virgil, Ajax, and Yellow Perfection. Amongst some of the best of the older kinds in flower, we noted Queen Victoria, Princess Royal, Princess Alexandra, and Maiden's Blush.

In the Balsaminiflorum section, we observed three remarkable double-flowered varieties, viz., album, aureum, and roseum, which have been certificated in recent years by the Royal Horticultural Society under the name of Balsaminiflorum album, aureum, carneum, Rajah, &c. One great advantage these Java hybrids possess is, that they are never out of flower. At every Royal Horticultural Society's meeting during the past twelve months, the firm has exhibited beautiful flowers of this section. The temperature they are grown in is from 55° to 60°, with a moist atmosphere. Given these conditions, they appear to grow with but little trouble. *B.*

Florists' Flowers.

SECOND BLOOM ON CHRYSANTHEMUMS.

In a general way, Chrysanthemums are cut down immediately their flowers are past, but treating them thus is not necessary, for two reasons—as when robbed all at once of their stems and foliage, they do not break so well at the base or crown as they do when the tops are simply shortened and left on; many varieties, when so managed, start again, and show flower-buds. I find that numbers of ours are doing so this season, and the blossoms by-and-by will be of much value; some of them will not open till the new year, and look as if they would afford a succession for a long time afterwards. The only plants that show this readiness to flower a second time are those that have been grown for specimen blooms, and have strong, well-ripened stems; and some varieties are more free than others, but all seem to have the same tendency if they are kept in a suitable place. This, it need hardly be said, is in a warm, airy house, where they should be stood with their heads well up to the glass, so as to afford all the light and sun possible, and get the petals and colours good by their means. *J. S.*

The Apiary.

WINTERING BEES.

Anyone can get along with bees in summer, but the great problem is how to winter them successfully; and for want of appliances, if for no other reason, outdoor wintering must ever prevail with the million. Some advise that bees should be placed in a cellar, and kept dark. I tried this in a very dry sandy cellar, with a cement floor, and yet with very disastrous results, arising from dampness and mould, which I find to be the greatest enemy of bees, especially in winter. Others advise that they should be placed on the north side of a building or fence, so as to exclude the sun, and thus prevent them from flying out and becoming lost. I have also tried this with very fatal results. Others advise placing them low down on the ground, and letting the snow drift over them. This is sure death, from the dampness generated from the melting snow. Others advise covering with enamelled cloth, packing in chaff, &c. These are all objectionable, because they absorb and hold dampness, which is dreadfully fatal to bees in winter, while they are in a dormant state, and unable to ventilate the hive in their own natural way.

After years of trial, I became convinced that all such theories were vicious and wrong in principle, and contrary to the natural requirements of the bee; that cold was not so much an enemy of bees in winter as dampness; that instead of being placed low down on the ground, or in some bank, where all the dampness could be thrown into the hive, the hive should be elevated so that the winds could sweep away such dampness as might gather around it; that instead of being kept dark in winter, the bees should have all the sunlight possible; that, instead of being placed in a shaded spot on the north side of a building or fence, they should stand on the south side, where they could receive the full benefit of the winter's sun, which, of all seasons, the bees most need in winter.

Acting upon these ideas, I placed my bees in the warmest spot I could find on the south side of a high tight-board fence, where the full blaze of the winter's sun could pour down upon them. I elevated the hives about 2 feet from the ground, and gave them all the ventilation which the Quinby hive will admit of. I discarded the enamelled cloth, and instead covered with lath, which will not warp. On these I laid a mat of woollen cloth. In front of the fly-hole, on flying days, I placed a portable box 2 feet long, 14 inches wide, and 7 inches high, covered with wire-cloth, and, since then, I have never lost a colony. There is no dampness, no mould. If the bees want to fly, they fly around in the box where they void themselves, and receive the full benefit of the sun, and yet not a bee is lost upon the snow. *Agnes.*

VINE BORDERS, AND SOIL FOR MAKING THE SAME.

Time and experience seem greatly to have changed ideas in regard to many things, and none more so, perhaps, than those connected with gardening, especially that branch of it relating to the formation and making of Vine-borders, and the soil that ought to be used for the same. If we take up any of the old works or books treating of this matter, we find the writers advocating as many mixtures as were in the witches' cauldron; a little of this, and a portion of that, one stating that carrion was the right thing to use, as it was the "*pabulum* that produces the nectar of Bacchus." Carrion, however, was soon found to be a failure, as, instead of the nectar, the extreme grossness of growth, if forced for a few years, caused the berries of the large bunches to become distended, and almost void of sweetness, and what should have been nectar or saccharine matter, was little more than crude juice, and skins were as red as the flesh put into the borders. This was the teaching in 1846 of Mr. Roberts, who then practised at Raby Castle, and before that date we have Speechley, Abercrombie, and Maw, Macphail, Nicol and Abercrombie, Judd and Giffin. It will be interesting, perhaps, at this date to quote, and so reproduce, a few words of what these worthies wrote. The mixtures Speechley advised—and he was designated the father of Grape-growers—is as follows:—One-fourth garden-mould, one-fourth sward of a pasture, where the soil is a sandy loam, one-fourth scrapings of roads, one-eighth cow and horse-dung, and one-eighth leaf-mould; the sward to be laid up till the roots had decayed. The compost recommended by Abercrombie and Maw was similar, but rather lighter, with the addition of shell, marl, and mild lime mixed in together. Macphail advocated strong loam, not destitute of sand, and he is thus in touch with modern growers, who mostly apply the same now. Judd prescribed half of rich gritty loam, one quarter of old dung, and one quarter of tan and leaf-mould mixed; the ingredients to be used rough, and laid to the depth of 3 feet. The tan and leaf-mould no one would dream of using now, I think, as they are about as dangerous a blending as could possibly be put into a border, for of a certainty they would breed fungus, and nothing is more destructive to the health and life of roots than that parasite. Giffen appears to have used much the same mixture, and to have been successful with it for a time, as he received the medal of the Horticultural Society for his skill in Grape growing, but we may be pretty sure that the Vines were short lived. We now come to a later date, and to Roberts, the user of carrion; but leaving that out, his compost was good, and he demanded plenty of drainage by having cross and main drains, and a one-foot layer of stones and lime rubble on the floor of the border. The soil he made use of was, two parts parings of an old pasture of strong loam, piled up till it was half decomposed, one-part also of a lighter texture, one-eighth of scrapings from a highway where limestone is laid, and the other eighth horse or cow-dung; but he wisely advised that the several parts should not be mixed till wanted for use, on account of rotting too much of the fibre, and causing the soil to be close. Barron's book of the Vine, which ought to be on every gardener's book-shelf, is now before me. What does he tell us on the subject of Vine borders? Without beating about the bush, and making much of the matter, he goes right at it, by stating that the soil best suited in itself for the growth of the Vine, is a fibry calcareous yellow or virgin loam, and goes on to mark or distinguish this in such a way that the veriest tyro must understand, so plain and precise is his description of the kind meant. Spencer, of Bowood, used to grow remarkably fine Grapes when I served under him, in nothing but pure loam, such as Mr. Barron mentions, as it came from off chalk, and was full of fibre, and well impregnated with calcareous matter. Mr. Taylor, late of Longleat, and now of Bath, is one of the best cultivators of the Vine of the present day, as he has abundantly proved by his splendid exhibits, and he appears to think more of the presence of lime, or the results from it, in soil for borders than of anything else, and, following up that opinion, used it largely; and there can be no doubt but that it is highly necessary in some form or other in growing good Grapes. The conclusion the most experienced men among us seem to have arrived at now is, that the fewer materials there are used for Vine-border making the better, and that there is nothing equal to sound yellow turfy loam, which is not only sweet and wholesome to the roots of the plants, but very enduring, and any stimulant required can always be administered in the form of liquid or as top-dressing, and in that way carried down so as to be made use of at times when most wanted. There can be no doubt, then, I think, that solid manure incorporated with the soil is an evil, as it must tend to accelerate decay of the fibres, and cause a closeness and compactness of the whole body, which condition is unfavourable to such a moisture-loving subject as the Vine, whose roots ramble and require a free run and quick drainage, that water may pass rapidly through. *J. Sheppard, Woolverstone Park, Ipswich.*

Home Correspondence.

THE CHILE PINE.—I have much pleasure in responding to the appeal you made in your number of November 22 respecting the specimens of the above in the Piltdown Nurseries, Uckfield. As far as I can gather, the tree is close upon fifty years of age. Its dimensions are:—Height, about 60 feet; girth at base, 11 feet 4 inches; do. at 6 feet from base, 7 feet 6 inches; circumference of branches, 108 feet. It does not appear to have grown so much in height as one might have supposed, but this may be accounted for from the following:—I find that of late years the habit of the tree has been to throw out laterals from the junction of the larger branches with the trunk, up to the height of about 20 feet, the length of the lower ones being from 12 to 15 feet. The whole of this mass of very bright green foliage adds, in my opinion, very much to the beauty of the tree. It is an interesting question with me whether in course of time these younger branches may not take the place of the older ones. The female trees bear a quantity of cones every alternate year, the germinating seeds per cone averaging about 50 per cent. There are at the present time about 150 cones in formation for next year. The north-east side of these nurseries is well sheltered by a splendid avenue of about sixty of these trees, from thirty to sixty feet in height, the avenue itself being 200 yards long, and which, no doubt, gives great protection to the Tea Roses in early spring. I may justly add, that we have long been celebrated for the

growth of these Roses. One great peculiarity in the avenue is, that there is apparently a sucker, 10 feet in height, which has been growing for the same number of years without a lateral, until this year, when it seems to be starting on its usual course. Have any of your correspondents noticed anything of a similar character? if so, it would be interesting to have the matter discussed in your paper. *David Booth, Piltdown Nurseries, Sussex.*

SEXUAL DISTINCTION OF ARAUCARIA IMBRICATA.—In the very interesting and instructive references contained in your issue of the 22nd ult., regarding the "coneing," &c., of the Chile Pine, I fail to observe any other character by which the sexes may be distinguished, in any state of growth of the plant prior to flowering. I am not altogether sure that there is any special character by which the sex of the plants may be determined unless by the respective pendulous and the more rigid or lateral habit the plants assume at any time previous to reproductive state. Neither am I cognisant of any such definition ever having been in print, though possibly there has been. Regarding the characters of habit just alluded to, a nurseryman recently expressed to me his opinion that he always regarded the pendulous and more slender branched plant as the female—though, strangely, he never had any personal experience or knowledge of the fructification of the Araucaria. In this matter, however, I know he does not stand alone. It would, however, be instructive, were your correspondents to record their knowledge anent the subject in question—and thus, probably, afford a means whereby intending planters would be enabled to select plants for sexual purposes. "*Monkey's Puzzle.*" [We are not aware of any reliable distinction between the male and female trees. Ed.]

SEAFORTHIA ELEGANS FLOWERING. — At the present time there is a plant of this species flowering at Bicton, Devonshire. It is a plant of about 25 to 30 feet high, which has flowered previously. The flower is emitted from the stem at a point several feet below the crown of foliage, and not in the axil of the leaf. Mr. Philips, the gardener, has the plant growing in a border in a warm house, which may account for its being so large, and having so fine a raceme of bloom. *D. C. Powell.*

NATIONAL CHRYSANTHEMUM SOCIETY.—I am glad to notice the two very practical letters that appeared in your last week's issue, which put the case very fairly, and leave, I think, very little more to be said. I trust they may deepen the interest and stimulate a further inquiry as to the unsuitableness of the Aquarium for the exhibition of the National Chrysanthemum Show. *James L. Wood.*

A METROPOLITAN HORTICULTURAL HALL.—Mr. Wood's proposal with reference to the future holding of the shows of the National Chrysanthemum Society, again draws attention to the proposed Home or Hall for Horticulture, which has been before the public for the past few months. One difficulty to be met in this particular case is, that even if the proposed Hall were erected, it would not be large enough by one-fourth to accommodate a show of the dimensions of the November exhibition of the National Chrysanthemum Society. As is well known the area of the proposed site is less than that of the St. James' Drill Hall, hence it is very obvious that it would be exceedingly inadequate for the requirements of large shows. The committee of the National Chrysanthemum Society declare that there is no other place in London but the Aquarium in which the shows could be held. None other is so central; none other affords so large an area. These are indisputable points. And there is further still, and to which Mr. Wood makes no reference, and which his offer does not cover the saving to the Society, in tabling—all erected free of charge, office, and committee accommodation, indeed the aids given to the Society through the directors is so great that some other than a big pecuniary subscription could at all equalise the advantages generally the National Society secures. Whatever may be the criticism to which the National Society lays itself open because of the Westminster associations, there is the fact that membership increases rapidly, that the scope of the Society's work extends rapidly, that its shows are seen by larger numbers of people than are any similar shows in London, and that there is no falling off, but rather the reverse, on the part of exhibitors. These are things which go far to justify the National Chrysanthemum Society in retaining its hold upon the Royal Aquarium, although the unpleasant associations of the building are indisputable. Much as we may desire to see erected a large hall in a central position in London, where all kinds of high-class exhibitions could be held, the enormous cost of sites prevents the carrying out of any such proposal. The Crystal Palace, the finest building in the world in which to hold a show, is too far out of London; and Olympia seems as if it is destined to be a millstone hanging round the necks of its owners, rather than a paying speculation. Still, some sacrifices may well be made to take the Chrysanthemum shows from out of the bad light, the nauseous smoke, the intolerable noises and hideous shouting, and the objectionable entertainments found at the Aquarium. If these nuisances cannot be put down by the directors for the show days, it becomes obvious that the flower shows are by them esteemed only as means to a dividend, and not as aids to horticultural progress. [Of course. Ed.] The position is a difficult one, and glad as a member of the National I should be if the shows could be held apart from the objectionable elements referred to, yet it is not possible to find in London a place so central, and where anything like the accommodation given could be furnished at such trifling cost. The Crystal Palace Company is, perhaps, the only body who would do so much for the National Chrysanthemum Society as the Royal Aquarium Company does; and were the Palace handy to London, I should cordially support the removal of the shows to the Palace. *A Member of the N. C. S.*

JAPANESE FLORAL ARRANGEMENTS. — Every gardener, or florist, and every lady who wishes to have true taste in arranging flowers, should read Sir Edwin Arnold's interesting and quaintly-written article on Japan in this month's *Scribner*. In it he discourses at length on the Japanese system of floral grouping, and compares it with ours, not at all to our advantage. In fact, he says, "the European florist who masses together his Roses and Gardenias, his Maidenhair Ferns and Calla Lilies, surrounding them with a dish of green and an outer coat of lace-paper, seems to the Japanese lover of flowers lower than a barbarian." The blossoms are to a Japanese artist rather a detail than a central point, and he avoids all tame symmetry, even as Nature herself does. "We," writes Sir Edwin again, "crowd our blooms and sprays together until they are like the faces of people in the pit of a theatre, each lost in the press. The Japanese treats each gracious beauty or splendour of the garden, or of the pool, as an individual to be separately honoured. Each suggests to his eyes a special luxury of line." So fond are the Japanese of floral decoration, and so careful are they not to offend against the harmonies of Nature, that distinct rules and canons are laid down with regard to the grouping of different species and the use of certain flowers. The illustrations to the text exhibit plainly the artistic ideas of the Japanese in their efforts to arrange flowers according to the manner they are produced in Nature. *C. A. M. Carmichael.*

STACHYS TUBERIFERA. — This new vegetable does not appear to secure much popularity, and it may be doubted if it ever will do so. I shall not grow any more of it, as it is said to be tasteless when cooked; but that is one point in its favour, for having no flavour, it may be flavoured with anything the cook may think will improve it. If the tubers were larger, they might take the place of Jerusalem Artichokes in places where space is limited, as the Stachys does not take much room in proportion to the crop obtained. Where Stachys has once been planted, there is always a difficulty in ridding the land of them, and it is as troublesome as Couch-grass. *W. A. Cook.*

STANDARDS OF CURRANTS AND GOOSEBERRIES. — In districts where much woodland exists, difficulties attend the preservation of the fruits on bushes, the birds clearing them of fruit when it is approaching ripeness, if nets be not used. Standard-grown bushes of the above-named fruits offer a ready means of securing the fruit, by surrounding each with a piece of net, or enclosing several under one. The stems may be from 2½ to 3 feet high. It is almost impossible to exclude blackbirds and thrushes from bushes by nets, however carefully they may be put on. In the case of standards, if the net be brought under the head of the tree, and gathered up and tied to the stem, it will be sufficient for the purpose. The fruit keeps better on standards than on bushes. To obtain good strong stems, the weaker-growing varieties should be grafted on strong growers, which is preferable to growing them on their own roots. There is another advantage in standards that I may mention—that is, that hardy-flowering perennials may be grown between them, and the partial shade the fruit-bushes afford them is an advantage to the flowers. Suitable plants are Daffodils, Hyacinths, Violets, Primroses, Spiræas, Christmas Roses, Anemones, and Ranunculus. *A. Evans, Lythe Hill.*

THE MATERNAL COURAGE OF THE WHITE OWL.—*Apropos* of the interesting and commendable remarks contained in your columns under the heading, "Ornithology in Relation to Agriculture and Horticulture," especially in regard to the attributes of the—shall I say—domestic owl. It has occurred to me that a description of the bold courage I once experienced of an enraged white owl in defence of its young progeny, might prove interesting to some of your readers, and I am not cognisant of a similar recorded incident pertaining to this otherwise shy "moping" (I beg pardon), "blinking," "snoring," and "hissing" species of the genus Strix. The incident in question occurred a few years ago, when I was resident near an Ivy-clad, desecrated, ancient parish church in the neighbourhood of Stratford-on-Avon. The long pendulous branches of the Ivy, that covered a portion of the square, formed the favourite resort of a pair of fine white or "screech" owls, and where they regularly incubated for several seasons, to my own knowledge, high up amongst the umbrageous mass of Ivy. Being anxious to inspect the family abode, I one day ascended to the top of a tall ladder for that purpose, and whilst in the act of handling the full fledged, scared, hissing, and screeching twin owlets, all of a sudden, I felt a sharp blow on my right ear, followed by a flow of blood, and on looking around I observed one of the parents, doubtless the mother, flying off to a tree about 100 yards distant. She had evidently been watching my movements from her *siesta* in an adjacent part of the tower, and was seen to fly direct at my head on hearing the cries of her progeny, and inserted one of her claws through the lobe of my ear, and tearing away a small portion of the flesh. Not caring to risk another attack, I elected to descend from the eyrie retreat as soon as possible, first having secured a hasty glance at the family larder, furnished as it was with several mice, a young rat, and a mole, spiked upon the ends of broken twigs, or lying on the edge of the large woody nest, including also a congeries of small bones, and pellets of undigested food, and from which was emitted an unpleasant smell, suggestive of a menagerie. It is almost needless to add that it was most interesting to watch the parent owls in the twilight, rapidly bringing home supplies of food suspended in their claws, to the expectant voracious progeny. Pity it is that such useful vermin scavengers should be the victims of so much ignorance and prejudice, unfortunately entertained by those who stand most in need of their services. *William Gardiner, Harborne, Birmingham.*

THE AUCUBA, HARDY.—In a note on p. 636, I see the statement that the Aucuba japonica is as hardy as the common Laurel, with the editorial emendation, "hardier." I suppose no one doubts that it is perfectly hardy in the ground; but I know that two I have are perfectly hardy in pots—one is certainly fifteen years old, from a layer, and has been out in all winters. In fact, the Aucuba japonica is so hardy that, on several occasions, the frost has actually split the pots without doing any apparent injury to the plants. Is not that proof of perfect hardiness? *S. Ray.*

THE POTATO CROP IN WILTS.—In the early part of August, some rather startling assertions were made respecting the Potato crop. Disease was then feared to be spreading at express rate, but since the crop has been dug and stored, we hear but little about disease. We hear, however, such statements as "that Potatos do not pay the small grower at present prices, viz., 30*s.* to 45*s.* per ton extra, good samples fetching 55*s.* The disease turned out to be of a very mild character, and I have heard no complaints of bad crops in Wilts, where, generally speaking, the crops have been good, although the tubers were small, and the quality is good. The variety Magnum Bonum is cultivated in the largest quantity, next comes Sutton's Seedling, which is becoming a very great favourite; it is a very heavy cropper, of excellent flavour, and withstands the disease well. Lady Truscott is another Potato which finds much favour hereabouts; Snowdrop, which has been well grown by several of the cottagers in this neigh-

bourhood, is, to my fancy, the ideal of a Potato. Chancellor is another variety that has done well; also Sutton's Abundance, Vicar of Laleham, Covent Garden Perfection, Climax, White Elephant, and Beauty of Hebron. These have scarcely been touched by disease, except Beauty of Hebron, but the crop of this variety was enormous, notwithstanding the disease. The several forms of Ashleaf are all more or less affected with disease. The best of all the Potatos were grown in a field, with not more than an average of 4½ inches of soil, and these Potatos boil like the proverbial ball of flour, and are of beautiful flavour. *W. A. Cook, Compton Bassett.*

WEIGELA ROSEA: EFFECT OF SOIL ON COLOUR.—This plant is becoming more popular as a forcer, and deservedly so, for when properly managed it forms a striking object in the conservatory, and is useful for affording cut-blooms. It may be grown to any size or in any shape. The plant should not be neglected after flowering is over, but it should be protected under glass till the proper season arrives for planting it out-of-doors. As the growth it makes the first summer after being forced is more or less premature, it becomes necessary to force them in alternate years. In August the plants intended for lifting should have their mass of roots cut round about with a spade, governing the distance from the stem by the size of the plants. This operation checks growth and gives them, as it were, a rest of three months, at the same time causing them to make a quantity of fibrous roots. Now, it is a curious fact that the Weigelas by using two entirely different soils, show a marked difference in the colour of their blooms. For example, by using two thirds loam and one-third charred vegetable matter, lime rubbish and silver sand, the flower will be nearly white; while by using two-thirds peat and one-third charcoal-dust and potsherds smashed fine, the flowers will come of a beautiful rosy-pink, which colour, in my opinion, is preferable to the former, as there is a preponderance of other white flowers in the autumn and winter. I do not advocate hard forcing for Weigelas, the flowering period being considerably prolonged if a moderate course of treatment is resorted to. *G. B. Claydon, Holbecks Park.*

VERBENA VENOSA.—There are many ways in which this useful bedding plant can be used with telling effect. For many years it has been freely used for intermixing with silver Pelargoniums, such, for instance, as the old Bijou Flower of Spring and others, and in this way, if not planted too thickly, the two blend together, and always look well. I have in the past summer employed it among white tuberous Begonias, and the beds were much admired until the first slight frost blackened the Begonia leaves; the Verbena, however, is not injured by such frosts as spoil the former, but it still maintained its beauty for some weeks longer. If the plants of Verbena venosa are raised from seed, it should be sown early in the year, and grown on in moderate warmth, the seeds taking a considerable period of time to germinate. Late sown, the plants seldom make nice stuff by bedding-out time, and summer is on the wane before there is much display. The old plants may be wintered in cold frames, and young plants propagated from cuttings taken from them in the spring. *H. Markham.*

THE PROTECTION OF PLANTS OUT-OF-DOORS.—Many plants that are reputed hardy are only really so in certain situations and conditions, as there are so many things and circumstances that have to do with their capacity for enduring cold—some of the chief being soil, elevation, and drainage. This is more readily observed in the case of shrubs than any other, as they come immediately before the eye, and the fact holds good just as much with herbaceous subjects and others having crowns or collars near the surface. Take Tritoma or Pampas-grass for instance, which, in land that is open and dry, become well matured and better able to resist low temperature. It is the same with shrubs, the wood and shoots of which, when in light warm soil, are solid, and contain, as a natural consequence, less sap or moisture, whereas those that grow later, owing to the ground being wetter, are softer in the stems, and quickly suffer from frost. It is, however, surprising what a little protection will do for them, by keeping the roots, and the next vital part, the collar, from becoming ice-bound. As this is so, it will be seen how important it is to afford plants that are of doubtful hardiness some small amount of protection; which, in the case of Pampas-grass, Kniphofia, Sweet Bays, and others, a barrowful or two of tree leaves kept in position by a few brakes, and an evergreen branch or two stuck around them will do. Tea Roses are made quite safe in this way, or even without the leaves, and only the brakes, or very loose straw or rough hay be used instead. The lighter the material used the better, as anything that keeps the soil in a wet state is injurious, and aids the ingress of frost. Over the crowns of herbaceous plants, or around the collars of others that do not die down, nothing is better than half-rotten leaves, as they in that state are non-conductors, and, when further decayed, of benefit to the plants as manure. Those who cannot get tree leaves will find Cocoa-nut fibre a good substitute for them, so far as efficacy in warding off frost is concerned, although it is a very poor kind of manure, and should be cleared away in the spring. The only drawback to these various protectors is, that birds pull them about in their search for food, thereby uncovering the plants. This work of theirs can be prevented by sticking in a few sprigs of Holly or Gorse, or anything of that kind. *J. Sheppard.*

COMPETITION PRIZES AND THEIR DISTRIBUTION.—I shall be glad if permitted to raise in your columns, now that the show season of the passing year is over, a discussion as to the present method of distributing prizes at flower shows, and also to describe what I conceive to be a better way. In attempting to promote change one is perpetually met on the threshold of a discussion by the stock assertion, "the present system is generally adopted, and so far has given general satisfaction." My reply is, that nothing that is can be accepted as better than what may be; and not until we try that which may be better can we tell how far the old method is best or otherwise. To aver that the old plan gives general satisfaction is to aver that which is not true. It may be very well for judges to declare that their awards at shows have given general satisfaction, and so on, because that is stock phraseology, but there is rarely a competition of any sort to which prizes are attached, which does not provoke some heartburning, more or less; feeling which is intensified when it is found, as is so commonly the case, that whilst the collection or exhibit awarded a 1st prize has got £2, the 2nd one—the which came so near in quality to the 1st, that only the keenest scrutiny could detect the divergences—had to be content with £1 only. This is but an ordinary illustration of the present uneven and unjust way in which the prize system works, which gives three pounds more to the exhibitor whose luck it is to be perhaps one point ahead of his next competitor. My proposal is that henceforth all prizes shall be awarded to exhibits according to their respective merits, and not according to hard and fast rules, which admit of no elasticity, and promote the grossest unfairness in the awards. I ask that the proposal may be considered on its merits also. If the plan cuts somewhat against the interests of the pot-hunter who is for making a big pool during the season out of the 1st prizes he can pull in, at least it bids fair to be far more just in its operation to the 2nd and 3rd prize winners than is the present method. I assume that in a class of any description in which there is certain to be fairly good and even competition, a sum of £6 is allotted for prizes. the common method of allotting the prizes is—1st, £3; 2nd, £2; 3rd, £1. Now, with the plain figures representing the respective amounts before the reader's eyes, it is easy to discern the fact, that whilst the 1st prize collection should be twice as good as the 2nd, it should be three times as good as the 3rd, to justify awards of this nature. Over and over again, judges who desire to be fair have found their feelings hurt by the injustice they must of necessity compel some exhibitor to suffer whose exhibits are so meritorious that they have almost placed him equal 1st, or have run the 1st lot so closely, that distinctions have been found only after hard searching. To award the 1st prize collection in such case double the sum received for the 2nd is, at the best, monstrous injustice, and leads to perpetual difficulties; but had the judges placed upon them the duty of awarding points only to each collection, the committee of the shows undertaking in their published conditions to award the sums set apart in the classes, in three prizes, according to the merits of the collection, as set forth in the judges' awards of points, it is then evident that each exhibitor would be rewarded according to merit, and no injustice would be done. Take a case in which the judges, taking a maximum of twenty points, awarded eighteen, seventeen, and sixteen to the 1st, 2nd, and 3rd. The awards may be pasted on the entry cards, and the number of points placed in the entry book against the competitors' names at once. When the committee meet to apportion the prizes in the respective classes, and assuming that the sum allotted to the class in question was £6, then the apportionment would be thus fairly awarded—1st, 44*s.*; 2nd, 40*s.*; 3rd, 36*s.*—a very decided connection between the relative merits of the exhibits, and the value of the prizes being thus preserved. In a recent case in which a collection of vegetables, the general average of merit being very high, the judges taking a maximum of thirty points, brought the best collection to twenty-eight, twenty-seven and a half, and twenty-seven points each, and yet had to award a 1st prize of £4, a 2nd of £2, and a 3rd of £1. A gradation of value so monstrously unfair that I felt impelled to take an early opportunity to make a protest against the present system of offering prizes, as that was a class promoted by an eminent seed firm, and as they can do as they like somewhat more readily than committees can, I would most respectfully urge Messrs. Sutton & Sons next year to name the sums they are willing to offer in each case, and allow them to be apportioned by points as I have indicated. The experiment is well worth trying, and we have it on high authority that "only fools refuse to try experiments." I look, therefore, with hope that in some way my proposals may meet with practical solution. *A. Dean.*

SWEET-SCENTED CHRYSANTHEMUMS.—In the very pretty single variety Gus Harris, we certainly have perfume, and that is an immense advantage. At the Birmingham Botanical Gardens, Mr. Latham has been having an extensive display of Chrysanthemums, amongst them several plants of the free-blooming, small Anemone-flowered, and some of the single-flowered varieties. Looking over the plants recently, I was struck with a pleasant May-blossom perfume from one or more of the plants, and as a large plant of Gus Harris was immediately in front of me, I found on closer examination that the delightful perfume came from that plant. The variety has a close, erect habit, and it is very free. The flowers are of medium size, with bright yellow disc, and petals of bright pinkish-lilac colour, lighter at their base. A race of fragrant Chrysanthemums would be welcomed by those who grow Chrysanthemums to decorate their greenhouses and conservatories, and the single-flowered varieties should have more encouragement; but as our Chrysanthemum Societies give so very little encouragement to plants of these in pots, their value is little known, as only small cut branches or a few flowers are seen at our exhibitions, or, at the most, here and there a plant in a group. Why not a class for, say, three or six specimen single Chrysanthemums, so that their habit, floriferousness, and beauty, may be more generally seen. *D. S. H.*

TROPÆOLUM SPECIOSUM.—We have a pumping station in the park here for throwing water into a tank at the top of the hall; this is clothed with Ivies intermingled with Tropæolum speciosum; the latter having branches nearly 20 feet in length. The Tropæolum did not die down last winter, and this spring branched out from the main stems in all directions. From the beginning of June till the middle of November it has been a sheet of bloom, and during the autumn has been loaded with its blue berries. The whole of the hill is mountain limestone. The pumping-house is square, and the Tropæolum does equally well on all the four sides; its underground stems also spread 4 or 5 yards from the house, the branches springing up amongst the grass and climbing the shrubs. *E. J. Lowe, Chepstow.*

THE IMMORTALITY OF INFUSORIA.—Under this title M. Alfred Binet contributes an exceedingly readable article to the initial number of *The Monist*, a new quarterly magazine, published at Chicago. The hypothesis is not at all new, having been started several years ago by the well-known scientist, Prof. Weismann; it is none the less interesting, however. But, like so many equally abstract theories, the vitality, or rather the potential immortality of the protozoan infusoria remains pretty much where it was when first promulgated. The theory itself is one of the most interesting in connection with the study of the lowest forms of animate life. Setting aside theories of a purely speculative character, the grounds upon which the hypothesis itself is based are briefly these:—The reproduction of infusoria consists in a bipartition of the body of the animal, so that the parent does not die but lives in the two products of its bipartition. In subsequent multipli-

cations the same phenomenon is always observed to occur, so that the entire substance of the parent is found preserved and living in the individuals to which it gave birth. Referring to this extraordinary method of reproduction, Weismann contends, somewhat dogmatically, perhaps, that "in multiplication by division there are no corpses. The protozoan is represented by a single cell that comprehends all the vital functions, the functions of reproduction, as well as those of nutrition and relation. After an exhaustive review—for which we must refer the reader to *The Monist*—of the various arguments in favour of and against Weismann's thesis, M. Binet is of opinion that it eludes a direct refutation. "It is neither confirmed nor overturned by observed facts." *W. R.*

FUMIGATING INSECTICIDES.—Your correspondent "R. D.," who directs attention in your issue of the 8th ult. to a new fumigator, when describing its superiority over ordinary tobacco papers, apparently overlooks the fact that, in spite of its being more agreeable to handle on account of its non-staining properties, its use is attended with the same drawback as the article it professes to supersede, inasmuch as to produce combustion it is necessary to employ "red-hot cinders." Now, it is well-known, even to amateurs like myself, that red-hot cinders give off sulphureous fumes, which are injurious to delicate foliage, and consequently it seems to me that the new fumigator is, after all, only a partial improvement upon the old, inasmuch as it does not do away with the objectionable cinders. [Use charcoal. ED.] What is really wanted is a fumigator which not only does away with the objections attending ordinary tobacco papers, but which dispenses with red-hot cinders, and surely in these days of advanced scientific knowledge such an article will be produced ere long. [MacDougal's self-acting Tobacco-paper answers perfectly without cinders or charcoal. ED.]. *J. C. W.*

SOCIETIES.

SCOTTISH HORTICULTURAL ASSOCIATION.

THIS Association held its monthly meeting in 5, St. Andrew Square, Edinburgh, on the 2nd inst., Mr. Morrison, Vice-President, in the chair. Mr. Smith, gr., Dysart House, Fife, read a paper on the "Culture of Calanthe." Mr. Robert Laird, of Messrs. R. B. Laird & Sons, Edinburgh, read a paper on "Ornamental Grasses." Excellent cultural details were given; a collection of dried grasses was shown. Mr. Preston, The Gardens, Falcon Hall, Edinburgh, sent seedling Chrysanthemums; they were of American origin, and had been sown in April last.

Mr. McKenzie, the Treasurer, presented the balance-sheet of the last Chrysanthemum show. The receipts were £1190 7*s.* 8*d.*, and the expenditure £1062 1*s.* 6*d.*, leaving a balance of over £130 to be added to the surplus of last year. Five pounds were voted to the funds of the Royal Infirmary, and 10 guineas for a cup was voted to the Royal Caledonian Horticultural Society's International Show of next year.

THE BULB GARDEN.

NARCISSUS EARLY SNOWFLAKE.

THIS is a charming early-flowering variety, after the form of N. Paper-white, which is destined probably to supersede that old kind, it being stronger in growth and producing larger clusters of flowers than that variety. The flowers being pure white and very fragrant, and also lasting when cut, are capital material for bouquets and florists' work generally. It is so easily forced, that bulbs potted in the second week in September, and placed in a cool frame, subsequently—when they had shown flower-spikes—removed to a warm house, blossomed in the middle of the last month. Everyone knows the good properties of the early white Roman Hyacinth, and the new Narcissus equals that remarkably early blooming bulb. *T. Coomber.*

PLANT PORTRAITS.

ARUM DETRUNCATUM, *Westnik* (St. Petersburg), *November*, 1890.

CORDYLINE INDIVISI VAR. DALLIEREANA, *Illustration Horticole*, t. 114. Leaves striped with bands of clear yellow.

FRANCISCEA LATIFOLIA, *Westnik*, November, 1890.

F. HOPEANA, *Westnik*, November.

HÆMANTHUS LINDENI, *Illustration Horticole*, t. 112. —Flowers pale scarlet. Congo. See *Gardeners' Chronicle*, October 18, 1890.

IRIS OCHROLEUCA, *Garden*, November 15.

I. MONSPUR ×, *Garden*, November 15.

LILIUM THUNBERGIANUM VAR. ALICE WILSON AND HOULTEI, *Garden*, Nov. 8.

LOTUS PELIORHYNCUS, *Gartenflora*, t. 1334.

RHODOCHITON VOLUBILE, *Revue de l'Horticulture Belge*, November.

SICANA ODORIFERA, *Revue Horticole*, November 16.

PLANT NOTES.

SICANA ODORIFERA.

THIS handsome cucurbit is the subject of a coloured plate and a descriptive article in the *Revue Horticole*, November 16. It is a Brazilian species cultivated by M. NAUDIN, at Antibes, and the fruit is Gourd-like, and about 4 inches long by 1½ inches in diameter, oblong cylindric, rounded at both ends, and of a rich, orange colour. It exhales a rich Apple-like perfume. It is called Curuba by the Brazilians, the name being apparently applied generically to many similar fruits. A second species, S. atropurpurea, has lately been introduced into France from Paraguay. The fruit is larger than that of the plant above described, fragrant, and of a dark violet purple colour.

TRADE NOTICE.

THE old firm of RYDER & SON, Seed Merchants, Florists, &c., Sale, Manchester, having been dissolved by mutual consent, has been purchased by John Ryder and Alfred Henry Jones, as from September 1, 1890. The business will be carried on under the old title of Ryder & Son, as heretofore.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending November 29, is furnished from the Meteorological Office:—

"The *weather* was mild and rainy at the commencement of the period, but soon became very cold over the entire kingdom, with occasional falls of snow. Over the south-eastern counties and at Jersey the snowfall was very heavy.

"The *temperature* was high on the first day of the week, when the maxima in most districts ranged between 55° and 61°. Subsequently the thermometer fell rapidly, and became extremely low for the time of year—at first over Scotland, and afterwards over England and Ireland. The absolute minima (recorded on the 27th in the 'N.,' and on the 29th in the 'S.' and 'W.'), were as low as 10° in 'Scotland, E.' (at Braemar), 15° in 'England, S.W.,' and 16° in 'England, S.,' 'Ireland, N.,' and the Channel Islands. In the other districts, the lowest readings varied from 18° to 23°. During the 28th, the thermometer in London did not rise above 25°, and the day was the coldest for November on record. The averages for the week were 6° below the mean in 'England, S.' and 'S.W.,' 5° below in 'England, E.,' the 'Midland Counties,' and the 'Channel Islands,' and 4° below in most other districts.

"The *rainfall* has been less than the mean in the east and west of Scotland, the south and south-west of England, and in the south of Ireland, and has just equalled it in the 'Channel Islands'; in all other districts, however, an excess is shown, that in the north-east and east of England being very large. The heaviest falls of snow recorded were at Yarmouth and Dungeness; at the former station the fall on the 26th yielded 0·98 inch of water in the gauge, and at the latter station the aggregate fall for the 26th and 27th yielded 1.50 inch.

"*Bright sunshine* has been very little prevalent in the 'Wheat-producing districts,' but in the 'Grazing districts' a fair amount has been recorded. In 'England, S.W.,' the percentage of the possible duration was as high as 52."

[BY the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (−) the Mean for the week ending Nov. 29.	Accumulated. Above 42° for the Week.	Accumulated. Below 42°, for the Week.	Accumulated. Above 42°, difference from Mean since Jan. 1, 1890.	Accumulated. Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (−) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1890.	Rainfall. Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	3 —	0	41	+ 214	— 102	2 +	247	53.4	17	24
2	4 —	0	57	+ 57	— 63	1 —	202	31.4	23	30
3	3 —	0	37	+ 172	— 108	7 +	175	23.7	19	29
4	5 —	0	50	+ 77	— 35	10 +	173	22.6	10	37
5	5 —	0	53	+ 57	— 41	2 +	169	21.6	12	32
6	6 —	0	48	+ 85	— 77	1 —	168	24.3	13	35
7	3 —	0	35	+ 108	— 111	3 —	210	51.0	25	31
8	4 —	0	34	+ 158	— 103	2 +	198	34.2	36	29
9	6 —	0	36	— 3	+ 15	6 —	203	34.6	52	36
10	4 —	2	33	+ 137	— 93	2 +	229	36.4	32	29
11	4 —	6	33	+ 151	— 33	2 —	212	37.7	31	32
12	5 —	10	23	+ 102	— 3	0 av.	197	30.4	30	42

The districts indicated by number in the first column are he following:—

Principal Wheat-producing Districts — 1, Scotland, N; 2, Scotland, E.; 3, England, N.E.; 4, England, E. 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

MARKETS.

COVENT GARDEN, December 4.

Market quiet. Supplies generally good. Prices unaltered. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Evergreens, in var., per dozen	6 0	24 0
Aspidistra, doz.	18 0	42 0	Ericas, various, doz.	8 0	18 0
— speci. plants, each	7 6	10 6	Ferns, in var., per dozen	4 0	18 0
Bouvardias, p. doz.	9 0	18 0	Ficus elastica, each	1 6	7 0
Chrsanthem., p. doz.	4 0	18 0	Foliage plants, various, each	2 0	10 0
— specimen plants, each	2 6	5 0	Hydrangeas, doz.	9 0	18 0
Cyclamens, dozen	9 0	18 0	Marguerites, doz.	6 0	12 0
Cyperus, per dozen	4 0	12 0	Mignonette, per doz.	4 0	6 0
Dracæna terminalis, per dozen	30	60 0	Palms in variety, each	2 6	21 0
— viridis, per doz.	12 0	24 0	Poinsettias, dozen	9 0	15 0
Euonymus, in var., per dozen	6 0	18 0	Solanums, per doz.	9 0	15 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Mignonette, 12 bun.	2 0	4 0
Bouvardias, per bun.	0 6	1 0	Pelargoniums, scarlet, 12 spr.	0 4	0 6
Calla æthiopica, 12 bl.	4 0	8 0	— dozen sprays	1 0	1 6
Carnations, 12 blms.	1 0	2 0	Poinsettias, 12 blms.	4 0	8 0
Chrysanth., 12 bun.	3 0	9 0	Primulas, double, 12 sprays	0 6	1 0
— 12 blooms	1 0	3 0	Roses, Tea, per doz.	0 6	2 0
Cyclamens, per doz.	0 3	0 6	— coloured, dozen	3 0	5 0
Eucharis, per dozen	3 0	6 0	— red, per dozen	1 0	2 0
Gardenias, 12 blooms	4 0	9 0	— Safrano, French, per box of 100	3 0	6 0
Heliotropes, 12 spr.	0 6	1 0	— ditto, per dozen	1 0	2 0
Hyacinths, Rom., 12 sprays	1 0	1 6	Stephanotis, per 12 sprays	4 0	6 0
Lilium, var., 12 bl.	2 0	6 0	Tuberoses, 12 blms.	0 6	0 9
Maiden Hair Fern, 12 blooms	4 0	9 0	Violets, 12 bun.	1 0	2 0
Marguerites, 12 bun.	3 0	6 0	— Parme, Fr., bun.	2 6	3 6
Narcissus (paper white), 12 sprays	1 0	1 6	— dark, Fr., bun.	1 6	2 6
— French, 12 bun.	4 0	9 0			

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, ½-sieve	... 3 6- 7 0	Lemons, per case	...20 0-40 0
— Nova Scotia, brl.	15 0-25 0	Melons, each	... 0 6- 2 0
Cobs, Kent, 100 lb.	...65 0-70 0	Pine-apples, St. Michael, each	... 2 0- 6 0
Grapes, lb.	... 0 9- 3 0		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, each	... ... 0 4- 0 6	Lettuces, per dozen	... 1 6- ...
Beans, French, lb.	... 1 0- ...	Mushrooms, punnet	2 0- ...
Beet, red, per dozen	2 0- 3 0	Mustard and Cress, punnet	... ... 0 4- ...
Carrots, per bunch	... 0 6- ...	Parsley, per bunch	... 0 4- ...
Cauliflowers, each	... 0 4- 0 6	Shallots, per lb.	... 0 6- ...
Celery, per bundle	... 1 6- 2 6	Spinach, per bushel	... 3 0- ...
Cucumbers, each	... 0 4- 0 6	Tomatos, per lb.	... 0 9- 1 0
Endive, per dozen	... 2 0- ...	Turnips, per bunch	0 4- ...
Herbs, per bunch	... 0 4- ...		

POTATOS.—The late sharp weather interfered much with supplies, as well as with the regular trade in London. The effect has been to harden prices for really first-class goods. Magnums, best samples, 90s. to 110s.; Imperators, do., 85s. to 95s.; Beauties and Elephants, do., 80s. to 90s.; Medium Potatos, various, 55s. to 70s. Market firm. *J. B. Thomas.*

SEEDS.

LONDON: *Dec.* 3. — Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, London, E.C., describe the seed market to-day as inactive, and devoid of interest. Red Clover seed just now excites but little interest. Of fine Alsike and white the offerings are small. There is no change in Mustard. In Rapeseed, the late advance is well sustained. Peas and Haricots are moving upwards, now that Maize is so dear. Dari being cheap, attracts attention as a useful feed. More money is asked for both Canary and Hempseed. Buckwheat and Linseed realise former terms. Tares keep steady. Choice Windsor Beans can now be bought for reasonable figures.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending November 29, and for the corresponding period in last year:—1890: Wheat, 32s. 7d.; Barley, 29s.; Oats, 17s. 8d. 1889: Wheat, 30s. 1d.; Barley, 29s. 9d.; Oats, 17s. 6d.

FRUIT AND VEGETABLES.

SPITALFIELDS: *December* 3.—Supplies fairly good, but trade slow, with very little alteration in prices:—Savoys, 2s. to 4s. per tally; Cauliflowers, 2s. 6d. to 6s. 6d. do.; Cabbages, 1s. 6d. to 2s. 6d. do.; Spinach, 9d. to 1s. 6d. per bushel; Brussels Sprouts, 1s. 3d. to 1s. 9d. per half-sieve; Curly Kale, 9d. to 1s. per bushel; Seakale, 1s. to 1s. 6d. per punnet; Greens, 9d. to 1s. 3d. per dozen bunches; Turnips, 1s. 6d. to 2s. 3d. do.; Carrots, 2s. 3d. to 3s. 6d. do.; Parsley, 1s. 3d. to 2s. do.; Celery, 4s. to 10s. per dozen bundles; Horseradish, 1s. 2d. to 1s. 4d. per bundle; Parsnips, 4d. to 9d per score of 22; Beetroots, 3d. to 6d. per dozen; Endive, 1s. to 1s. 6d. do.; Leeks, 1s. 6d. to 2s. do.; Mustard and Cress, 1s. to 1s. 6d. per dozen baskets; Cabbage Lettuces, 9d. to 1s. per dozen; frame Cucumbers, 1s. 6d. to 2s. 6d. do.; English Onions, 5s. to 5s. 6d. per cwt.; Spanish do., 6s. to 7s. 6d. per case; Dutch do., 2s. 6d. to 3s. per bag of 110 lb.; Belgian do., 2s. 6d. to 3s. do.; English Apples, 3s. 6d. to 9s. 6d. per bushel; American do., 12s. to 24s. per barrel; Pears, 3s. 6d. to 6s. 6d. per half-sieve; English Tomatos, 4s. to 6s. per peck.

STRATFORD: *December* 2.—With a good supply of all kinds of produce at this market during the past week, an excellent trade was done at the under-mentioned prices:—Cauliflowers, 3s. to 6s. per tally; Cabbages, 2s. to 3s. 6d. do.; Savoys, 3s. to 5s. do.; Turnips, 35s. to 40s. per ton; Carrots, household, 35s. to 45s. do.; do., cattle-feeding, 26s. to 32s. do.; Parsnips, 2s. 9d. to 3s. 6d. per cwt.; Mangels, 17s. to 18s. per ton; Swedes, 18s. to 19s. do.; Onions, English, 4s. 6d. to 5s. per cwt.; do. Dutch, 3s. 6d. to 4s. 6d. per bag; Apples, English, 3s. to 7s. per bushel; Dutch do., 14s. to 15s. per barrel; Carrots, 2s. to 3s. per dozen bunches; Celery, 6s. to 12s. per dozen rolls; Watercress, 8d. per dozen.

POTATOS.

BOROUGH AND SPITALFIELDS: *Dec.* 2.—Quotations:—Hebrons, 60s. to 100s.; Magnums, 55s. to 85s.; Scotch, 90s. to 120s.; Imperators, 60s. to 80s. per ton.

SPITALFIELDS: *Dec.* 3.—Quotations:—Magnums, 50s. to 70s.; Regents, 65s. to 90s.; Champions, 60s. to 65s.; Imperators, 60s. to 80s.; Hebrons, 55s. to 75s. per ton.

STRATFORD: *Dec.* 2.—Quotations:—Magnums, light, 60s. to 75s.; do., dark, 55s. to 65s.; Hebrons, 75s. to 80s.; Imperators, 55s. to 70s. per ton.

HAY.

Averages.—The following are the averages of the prices at the metropolitan markets during the past week:—Clover, prime, 80s. to 102s. 6d.; inferior, do., 46s. to 75s.; hay, best, 60s. to 87s.; inferior, do., 26s. to 50s.; and straw, 24s. to 39s. per load.

NOTICES TO CORRESPONDENTS.

BENTHAMIA FRAGIFERA: *C. B. S.* The leaves and fruits of this plant were very nice and fresh-looking on arrival, and say much for the genial climate of Jersey. We have seen much larger fruits from the same island.

BOOKS: *W. E.* (2), a few shillings; (3), ten or fifteen shillings; (4), Castle's *Orchids*, 171, Fleet Street.—*A. Blanc & Co., Philadelphia.* The book you mention is coming out in parts, and can be obtained from any foreign bookseller of your city.—*J. M. J.* There is no work which supplies just what you want. The best, perhaps, is *The Culture of Fruit Trees*, from the French of Du Breuil, published by Lockwood & Co., 7, Stationers' Hall Court, Ludgate Hill, London.—*J. J. Handbook of Herbaceous and Alpine Flowers*, by W. Sutherland. (W. Blackwood & Sons), price 7s. 6d. Thomson's *Handy Book of the Flower Garden*, 4th ed. (W. Blackwood & Sons), price 7s. 6d.

CAMELLIA MARCHIONESS OF EXETER: *X.* It was raised by J. Priauxl, Esq., of Guernsey, in or about 1840.

INSECTS: GRUBS AT THE ROOT OF FRUIT TREES.—*X.* The black larvæ (about two-thirds of an inch long)

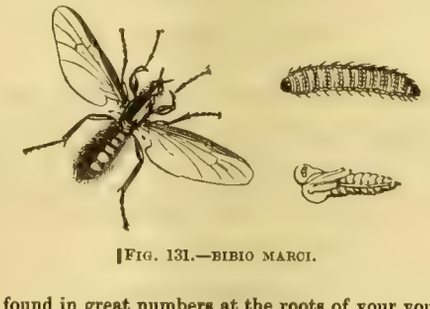


FIG. 131.—BIBIO MARCI.

found in great numbers at the roots of your young fruit trees, manured from the farmyard in the spring, are those of the common black two-winged fly, Bibio Marci (see *Gardeners' Chronicle*, 1844, p. 765), (fig. 131). We believe they more commonly occur in rotting vegetable matter. Water with gas-tar water. *I. O. W.—E. W.* Caterpillar with growth from injured head will be answered next week. *I. O. W.*

CORRECTIONS.—M. Correvon writes to say, with reference to his article on the cultivation of Eritrichium, on p. 626, that he intended to speak of uniformity of moisture, not of temperature, which naturally varies greatly on the Alps. By granitic soil M. Correvon means granite-pebbles or granitic-sand, used for mechanical rather than nutritive purposes.—It should have been stated by us, in our report of the Edinburgh exhibition of Chrysanthemnms, pp. 638 and 639, November 29, that Messrs. J. Laing & Sons, Forest Hill, were the exhibitors of the group described at the top of the 1st column, p. 639, and for which they received a Silver Medal.

EUCHARIS NOT GROWING LEAVES: *Eucharis.* The bulbs had lost their roots last year, either from strong doses of artificial manure, or excessive bottom-heat. This season they have made a few roots, and necessarily no leaves; also a few young bulbs with roots have started. These young bulbs will give foliage, and in due time flowers; the older bulbs may or may not do so; in any case, excessive heat and moisture are not desirable conditions of culture for some months to come.

FICUS ELASTICA: *W. E.* The leaf has the appearance of having been scalded with steam.

GOOSEBERRY AND CURRANT BUSHES: *F. W. Z.* Trench the ground deeply if it has been trenched at any previous time, but if it has not been so treated, be satisfied with bastard trenching only, breaking up the bottom of the trenches, but not throwing the soil to the top. Manure rather heavily. When the land is dug, it must be allowed to settle before planting, say, till February, if mild, or March, if the weather be severe in the former month. Before planting, tread the land evenly all over, and rake it with a wooden rake, to remove the biggest stones; then mark the stations for the bushes with a garden line and wooden pegs. In market gardens, the plants are usually planted at about 6 feet apart, but in private gardens, if space be of little moment, 8 feet is not too wide. The more space between the bushes, the more sun the bushes will get, and the better the flavour of the fruit. Some gardeners plant two rows across a quarter, and then have a break of vegetables, and so on. Plant but very little deeper than the bushes have stood in the soil previously, spreading out the roots all round the hole; make the soil firm about them, and give a slight mulch of manure to keep the soil moist. In a month after planting, give each bush a stout stake, binding the two together with withes or tarred cord, not forgetting to place a small cushion between the two.

LABELS FOR ROSE BUSHES: *G. G.* There was such a label as you name brought out some six years ago, but we have no record of it. It was dear to make and not likely therefore to find general acceptance.

LIME, &C., IN THE SOIL: *R. F.* Unless you are first taught practically the methods to be adopted in some chemical laboratory, we fear there are no books that will help you to ascertain the constituents of any kind of soil.

NAMES OF PLANTS: *A. W. H.* 1, Thuia (Biota) orientalis var. elegantissima; 2, Libocedrus chilensis; 3, Cupressus Lawsoni; 4, Juniperus Chamberlaini; 5, Abies (or Picea) nobilis; 6, Cotoneaster Simonsi; 7, Pernettya mucronata.—*H. H.* Cœlogyne assamica, not an Epidendrum.—*W. L.* A small form of Cattleya guttata; Cypripedium insigne violaceo-punctatum. The berries you name are not edible.—*T. G.* 1, Lastræa dilatata probably; you should send a more perfect frond; 2, Asplenium viride.—*G. W. B.* We cannot name such flowers.—*J. Hayter* should address the Editor, not the Publisher. 1, Begonia argyrostigma; 2 is a Dracæna, and 3 an Acalypha; but it is impossible to identify such specimens as you send.—*A.B.* 1, Pernettya mucronata var., others next week.

NITRATE OF SODA: *R. A. P.* In giving dressings of the above manure to so small a piece of land as that occupied by a row of Strawberry plants, it is sufficient for one dressing, that it be strewed on the surface very lightly—certainly not sufficiently to hide the mould, and not on the plants themselves. Do not apply it till growth begins. It may be repeated thrice during the summer.

PICOTEE: *A. Thomson.* The variety is worth perpetuating, if only for its habit of flowering at this season. The blooms are also passable, and the colour rich.

RATING OF NURSERIES, GREENHOUSES, &C.: *J. Bryson and others.*—For information under this head, see our issue for March 9, 1889, p. 308—Report of the Nursery and Seed Trade Association, and also reports of the case of Purser *v.* Worthing, Local Board, March 26, p. 422; and May 21, p. 676, of the year 1887. In that case it was decided by the Court of Appeal that, under the Public Health Act, nursery and market gardens should be assessed in respect of one-fourth part of the nett annual value. This decision does not refer to the poor-rates.

CATALOGUES RECEIVED.

PUTZ & ROES, Erfurt, Prussia—Trade Seed List.
C. PLATZ & SON, Erfurt, Prussia—Trade Seed List.
F. C. HEINEMANN, Erfurt, Prussia—Trade Seed List.
MARTIN GRASSHOFF, Quedlinburg, Westerhausen, Germany—Wholesale Seed List.
DICKSONS & Co., 1, Waterloo Place, Edinburgh, N.B.—Roses.
HARLAN P. KELSEY, Highlands Nursery, Linville, North Carolina, U.S.A.—Wild Flowering Trees, Shrubs, and Vines of the Southern Alleghany Mountains.
DICKSONS & Co., 1, Waterloo Place, Edinburgh, N.B.—Forest Trees, Shrubs, &c.

Communications Received.—N. W.—C. de B. Lièrre.—A. B., Philadelphia.—H. C., Geneva.—Count K., Ghent.—A. S. M.—W. W.—H. J. G., Paris.—Popular Gardening.—J. D. S., Baltimore.—L. L., Brussels.—F. J.—E. V. B.—H. J. G. (many thanks).—G. N.—A. S.—Sutton & Sons.—N. E. Br.—Prof. Sorauer Proskau.—L. A. L.—G. F. S. E.—A. B.—H. E. M.—W. T.—J. D.—W. Connolly.—R. D.—T. H.—J. S.—G. T.—C. Gill.—E. J.—A. J. M.—J. Maclean.—W. H. K.—Messrs. E. Webb & Sons.

Three Old Advertisements.—Those who have not perused Mr. Henry Sampson's exceedingly entertaining *History of Advertising*, can have but a little idea of the extraordinary interest which old advertisements offer as desultory reading. Nurserymen and seedsmen were among the latest tradesmen to avail themselves of the columns of the daily and weekly press—not so much from a mistaken idea that "good wine needs no bush," but because they were content with the patronage of the inhabitants of their immediate district to whom they were well known. Of competition until the latter end of the last century there was scarcely any, and of catalogues there were none. In turning over the files of some old newspapers, we recently came across three advertisements, which are so quaint and interesting as to deserve reprinting. The shorter of the two long ones appears in the *Country Journal or Craftsman*, the smartest weekly of its time, and a bitter opponent to the Walpole Ministry of October 27, 1733. It is headed, "To be Sold," and runs as follows:—"Just imported from Holland and Flanders, a fine collection of flower roots, viz., Tulips, Anemonies, Ranunculas, double Hyacinths, Frittularas [*sic*], Narcissus, with several other sorts, by Nathaniel Powell, seeds man, at the King's Head, near Fetter Lane, Holbourn. Several of these flower roots will blow in water glasses or pots; also all sorts of garden seeds, fruit trees, and plants, by wholesale and retail. N.B.—You may have glasses to blow flowers in of a new sort." Lest our readers should form a bad opinion of Mr. Powell and his place of business, we hasten to assure them that the King's Head was not a public-house where seeds and "mystic fourpenny" might be alternately discussed. Before houses in London were numbered, nearly every shop had a sign, and Mr. Powell gave an implied expression of his loyalty in the manner indicated. The longer and perhaps more interesting advertisement appeared in the same journal of January 20, 1732-3, and related to "plants of the true Scarlet Oak." It runs as follows:—"Being the only quantity in Great Britain. The acorns were imported from the north of America, and put in the ground in June, 1731, and though so lately sown, they are swift in growth so that several of the plants are above 2 feet in height, and when transplanted will grow 6 or 7 feet every year; whereas our acorns will not shoot 2 feet from the ground in five years. The leaves of this tree are above 10 inches in depth, and above 6 inches wide; it rises near 200 feet in height, with proportionable dimensions, is exceeding beautiful, the timber vastly valuable, and the greatest improvant [*sic*] ever yet planted. They are to be sold for 20*s.* per 100, at Mr. Pain's, 'The Green Lattice,' near Brownlow Street, in Holbourn, at Mr. Handcocks, gardiner [*sic*], 'The Adam and Eve,' in Islington, and at Mrs. Oram's Nursery Garden, at Knightsbridge where they are now growing; and noblemen, gentlemen, &c. may depend upon their orders being punctually obey'd, and the goods pack'd to keep three months out of the ground, without damage." From an advertisement in the issue of the same journal for October 13, 1733, it would appear that the stock was not cleared out, and the remainder was "to be sold cheap, the person being deceased." Let us hope that the stock was duly sold out, and that the results came up to the anticipations of the purchasers. In the *Craftsman*, November 24, 1733, we read:—"The Widow Fraser's nursery at Brumpton [*sic*], in the parish of Kensington, near London, where any gentleman or gardener may be furnished with all sorts of fruit trees, evergreens, and other things too tedious to mention. If any gentleman will be pleased to come or send, they [*sic*] will be further satisfied, for the stock will be disposed of at a very reasonable rate." From the foregoing it will be seen that horticultural advertising is by no means an institution of the present century; it will be seen also that the art of puff is older than is usually supposed. *W. Roberts.*

CHINESE FAIRY LILIES, direct from the Chinese Mountains.
JAMES CARTER AND CO.'S first importations have now arrived in the finest condition. Magnificent Bulbs price 1*s.* each, 10*s.* 6*d.* per dozen, carriage free. We were the original introducers of this attractive Lily into England, and have again secured the best Bulbs of the year.
Seedsmen by Royal Warrants to H.M. The Queen, and H.R.H. The Prince of Wales, 237 and 238, High Holborn, London.

CHRYSANTHEMUMS. — Strong Cuttings, best old sorts, buyer's selection, 1*s.* 6*d.* per dozen, 10*s.* per 100. For price of new sorts, see CATALOGUE. Many of the best prizes in the country are taken by my customers.—WM. ETHERINGTON, Chrysanthemum Grower, Swanscombe, Kent.

100 CALLA RICHARDIA ÆTHIOPICA, grand stuff in 24's; sending up flowers. Price £5, or offer.—H. BARNARD, Chase Side Nursery, Southgate, N.

FOR SALE, a quantity of well-furnished CHRISTMAS TREES, 7 to 12 feet high. — Apply, SLEIGHTHOLM, Gardener, Burntwood Hall, Barnsley.

LARGE BUYERS (also Agents) WANTED for 100 to 200 Kg. German Large-flowered, Summer Stock, GILLIFLOWER SEED, this year's crop. Most superior quality. Any desired quantity given.—Apply to B. 204, care of Haasenstein & Vogler, A-G., Hamburg.

SEAKALE.—Very strong crowns for forcing, 8*s.* per 100, 70*s.* per 1000; 3-yrs. old ASPARAGUS at 50*s.* per thousand. Terms Cash.
J. M. MASON, East Greenwich, S.E.

ANTHONY WATERER invites an inspection from intending Planters to the following well-grown TREES, having stout, straight stems, fine heads, and splendid roots, all having been transplanted within two years:—
ACACIA BESSONIANA, 12 to 14 feet.
ACER DASYCARPUM, 12 to 20 feet.
,, ,, WIERII LACINIATA, 10 to 14 feet.
,, NEGUNDO VARIEGATA, Standards, 8 to 10 feet.
,, REITENBACHII, 12 to 14 feet.
,, SCHWEDLERII, 12 to 16 feet.
,, WORLEYII, 12 to 14 feet.
ASH, Mountain, 12 to 14 feet.
BEECH, Common, 10 to 12 feet.
,, Purple, Pyramids, and Standards, 10 to 20 feet.
BIRCH, Silver, 12 to 14 feet.
CERASUS SEROTINA, 12 to 14 feet.
CHESTNUTS, Horse, 14 to 16 feet.
,, ,, Double White, 10 to 16 feet.
,, ,, Scarlet, 12 to 18 feet.
,, Spanish, 12 feet.
ELMS, English, 10 to 12 feet.
,, Guernsey, 10 to 12 feet.
LIMES, 12 to 16, and 20 feet.
,, EUCHLORA, 12 to 14 feet.
,, Silver-leaved, 10 to 14 feet.
LIQUIDAMBER, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 10 to 14 feet.
,, Scarlet American, 12 to 14 feet.
PLANES, 12 to 16 feet.
POPLAR CANADENSIS NOVA (the true variety), 12 to [16 feet.
SYCAMORE, Common, 14 to 16 feet.
,, Purple, 14 to 16 feet.
THORNS, Double Scarlet, 8 to 10 feet.
,, White, 8 to 10 feet.
TULIP TREES, 10 feet.
WALNUTS, Common, 10 to 12 feet.
WEEPING TREES.
BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
,, Weeping, Purple, Pyramids, and Standards, 7 to 12 feet.
BIRCH, Young's Weeping, Pyramids, and Standards, 8 to
,, Cut-leaved Weeping, 10 to 12 feet. [14 feet.
ELMS, Weeping, Pyramids, and Standards, 7 to 14 feet.
LARCH, Weeping, Pyramids, 6 to 10 feet.
POPLAR, Weeping, Pyramids, and Standards, 10 to 12 feet.
Knap Hill Nursery, Woking, Surrey.

SPECIAL OFFER
TO CLEAR.
SPIRÆA JAPONICA, 1st quality.
LILY OF THE VALLEY CLUMPS, 1st quality.
LILY OF THE VALLEY CROWNS, 1st quality.
DIELYTRA SPECTABILIS, 1st quality.
Named HYACINTHS.
,, CROCUS.
,, TULIPS.
HYACINTHUS CANDICANS.
NARCISSUS.
GLADIOLUS.
LILIUMS.
MICHAEL RAINS AND CO., 34, Mansell Street, Aldgate, City, London.

SEAKALE for Forcing, superior, selected, large Crowns, 75*s.* per 1000; under 500, 8*s.* 6*d.* per 100. Cash with all orders. Good strong 3-yrs. old Forcing ASPARAGUS, RHUBARB ROOTS of all varieties, and RHUBARB SEED. Prices on application.
WANTED, SEAKALE SEED, sample, quantity, and lowest price per bushel.
ALFRED ATWOOD, Grower, 21, Shilling St., Battersea, S.W.

CARSON'S PAINT
Patronised by 16,000 of the Nobility, Gentry, and Clergy, for all kinds of
OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames, &c.
1 Cwt., and Oil Mixture, Free to all Stations.
Liquid Non-Poisonous Paints for Inside of Conservatories, &c. Prices, Patterns, and Testimonials, Post-free.
LA BELLE SAUVAGE YARD, LUDGATE HILL, E.C.
BACHELOR'S WALK, DUBLIN.—*Discount for Cash.*

Evergreen Hedges.—Evergreen Hedges.
JOHN PERKINS AND SON offer:—
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Extra strong HAWTHORN QUICK, 3 to 5 feet, 35*s.* per 1000.
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Quality, THE BEST in the Market. (All sacks included.)

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Victoria and Paradise Nurseries, Upper Holloway, London, *January* 7, 1888. "GENTLEMEN—I have given your Insecticide, 'Picrena,' a good trial in competition with many others. I am pleased to say that I have found it to be more effectual in destroying Mealy Bug and other insects than anything we have ever used. It ought to command a good sale. (Signed) B. S. WILLIAMS."
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SEND FOR A
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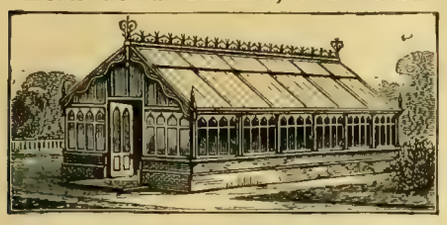
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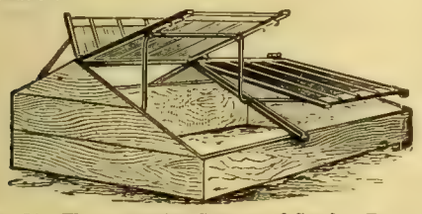
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3 ,, ,,	12 feet by 6 feet ...		6	0 0
4 ,, ,,	16 feet by 6 feet ...		7	12 6
5 ,, ,,	20 feet by 6 feet ...		9	5 0
6 ,, ,,	24 feet by 6 feet ...		10	17 6

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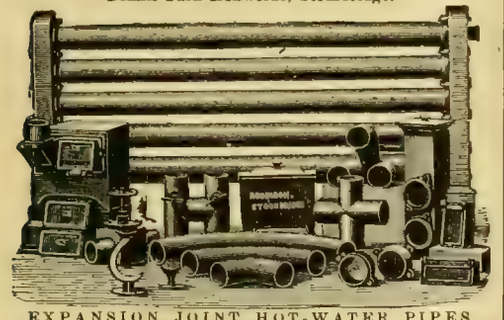


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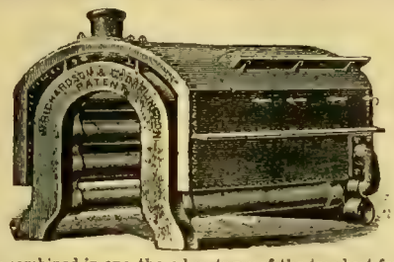
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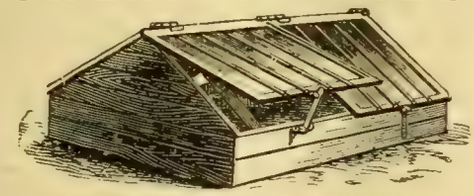
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6 feet long,	3 feet wide	Packing Cases FREE.	2	0	0
6 feet ,,	4 feet ,,		2	10	0
12 feet ,,	4 feet ,,		4	7	6
6 feet ,,	5 feet ,,		3	10	0
12 feet ,,	5 feet ,,		5	17	6

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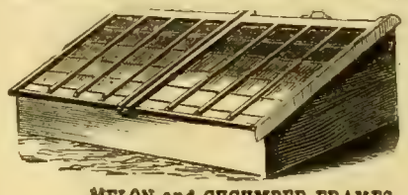


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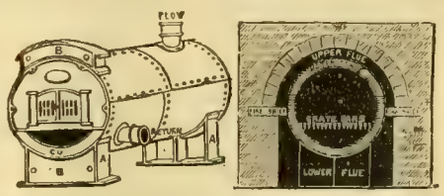
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2 ,, ,,	6 feet by 4 feet ...	...	...	2	0 0
2 ,, ,,	8 feet by 5 feet ...	...	...	2	15 0
2 ,, ,,	8 feet by 6 feet ...	...	...	3	0 0
3 ,, ,,	12 feet by 6 feet ...	...	...	4	4 0
4 ,, ,,	16 feet by 6 feet ...	...	...	5	8 0
PIT LIGHTS.	6 feet by 4 feet,	painted and glazed ...		0	14 0
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8	„	..	0	5	0	19	„	..	0	10	6
9	„	..	0	5	6	20	„	..	0	11	0
10	„	..	0	6	0	21	„	..	0	11	6
11	„	..	0	6	6	22	„	..	0	12	0
12	„	..	0	7	0	23	„	..	0	12	6
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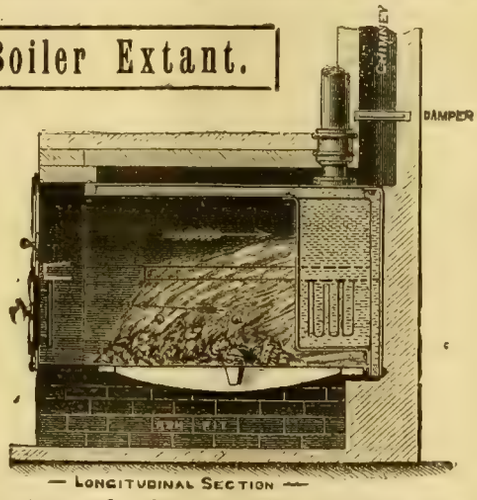
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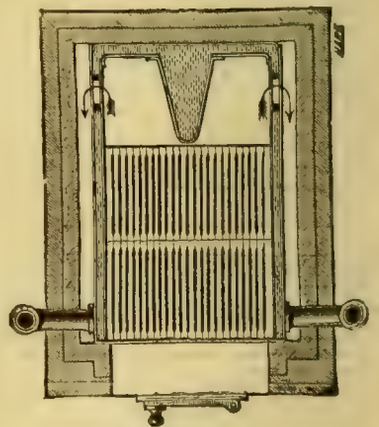
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MB 4	6	6	,,	by 3	0	,,	by 3	0	,,		4000	,,	60	0 0
MB 5	8	6	,,	by 4	0	,,	by 3	9	,,		7000	,,	85	0 0

TESTIMONIALS.

MESSRS. THOS. GREEN AND SON, LTD., NORTH STREET, LEEDS. **Re HEATING APPARATUS.** Borough Engineer's Office, Municipal Buildings, Leeds. *January* 9, 1886.

GENTLEMEN,—I have great pleasure in bearing testimony to the efficiency and satisfactory working of the Hot-water Heating Apparatus you erected in these public buildings.

The buildings are four storeys high, and we have a total length of about 28,000 feet of piping in them, varying in size from 1¼ in. to 6 in. diameter, with their connections, &c. The several offices and rooms can all be in operation at one time or separately, and the heat regulated by means of the valves to the temperature required, even in the coldest weather.

Two of your Patent Municipal Pattern Boilers, No. 4, work the whole of this piping easily, although we have three of them fixed. They are very powerful and economical in the consumption of fuel, and I am pleased to be able to report of them and the apparatus so favourably.

I am, Gentlemen, yours truly, THOS. HEWSON, Borough Engineer.

Morley House, Bagot, St. Saviour's, Jersey, *November* 10*th*, 1886.

GENTLEMEN,—The large Municipal Boiler which you sent me last year is doing its work satisfactorily; it is heating 5,000 feet of 4-inch pipe in one of my vineries, and I am quite sure that it has power to work a much greater length, while in cost of fuel it compares favourably with my other Boilers.

I have now five of your Boilers in use, and I cannot speak too well of their heating powers, or their comparatively small consumption of fuel.

MESSRS. THOS. GREEN AND SON, LTD., LEEDS. Yours faithfully, (Signed) G. W. BASHFORD.

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BY REV. O. FISHER.

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THE GARDENERS' CHRONICLE IN AMERICA.

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SALES BY AUCTION.

Monday Next.

LILIES FROM JAPAN, DUTCH BULBS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, December 15, at half-past 12 o'Clock precisely, immense importations, just received from Japan, of LILIES, comprising 10,000 extra-fine Bulbs of Lilium auratum, L. longiflorum, L. speciosum album and rubrum, L. elegans incomparable, L. Leitchlini, &c.; 5000 South African TUBEROSES and AMARYLLIS; 10,000 Berlin LILY OF THE VALLEY Crowns; also Clumps of same; SPIRÆA JAPONICA, in quantity; 5000 GLADIOLI, ANEMONES, DAFFODILS, BEGONIAS, together with several hundred lots of DUTCH BULBS.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next.

1000 Choice named Standard and Dwarf ROSES, from a well-known English Grower; FRUIT TREES, comprising many fine sorts of Apples, Pears, Plums, Peaches, Nectarines, &c.; LILY of the VALLEY Crowns and Clumps, SPIRÆA JAPONICA, AZALEA MOLLIS, from Ghent; GLADIOLI, many sorts in quantity. Also several hundred lots of DUTCH BULBS, comprising Hyacinths, Tulips, Crocuses, Narcissus, Scillas, Iris, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, December 17 and 20, at half-past 12 o'Clock precisely each day.

On view morning of Sale, and Catalogues had.

Shepperton.

By order of the Executors of the late Mr. Henry Bennett, the celebrated raiser of New Roses.

IMPORTANT TO ROSE GROWERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors (the Nursery having been let), to SELL by AUCTION, on the Premises, The Pedigree Rose Nursery, Shepperton, Middlesex, close to the Shepperton Station, on TUESDAY NEXT, December 16, at 12 o'Clock, the whole of the STOCK in TRADE, consisting of the entire Stocks of two New ROSES, Lady Henry Grosvenor and Capt. Hayward, neither yet in commerce; 2-year-old Seed Plants, H.P. varieties, 2000 Seedling Tea Roses, 200 ditto English Teas, 350 Seedling Roses not yet sent out, 3500 Tea Roses in pots, comprising Lady Mary Fitzwilliam, Princess Beatrice, Baroness Rothschild, Perle du Jardin, and others; 3000 dwarf Roses, of the best sorts; 5000 dwarf Roses, in dormant bud; 3000 Manetti Stocks; 5000 STRAWBERRIES, in pots. Also the Utensils in Trade, several Sets of HARNESS, CART, 300 casts of FLOWER-POTS, Stack of HAY, PLOUGH, HARROWS, Alderney COW, two HEIFERS, 60 head of POULTRY, and other effects.

May be viewed two days prior to Sale. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Tuesday Next.

10,000 LILIUM AURATUM, splendid Bulbs, just received from Japan, in unusually good condition; also 20 Cases of Special JAPANESE LILIES, an assortment of English-grown LILIES and Hardy BULBS, and 100 lots of HYACINTHS, TULIPS, and other DUTCH FLOWER ROOTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, December 16, at half-past 12 o'Clock.

On view morning of Sale, and Catalogues had.

Wednesday Next.

PLANTS, ROSES, BULBS, and TUBEROSES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, December 17, at half-past 11 o'clock, 20,000 AFRICAN TUBEROSES, an assortment of English-grown LILIES, FERNS, and DECORATIVE PLANTS, from an English Nursery; 300 Dwarf ROSES, LILY OF THE VALLEY (clump and crowns); a large variety of Hardy BULBS, DAFFODILS, and about 100 lots of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH FOWER ROOTS.

On view morning of Sale, and Catalogues had.

Dutch Bulbs.

GREAT UNRESERVED SALES, WEDNESDAY, and THURSDAY NEXT.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY, and THURSDAY NEXT, at half-past 11 o'Clock precisely each day, extensive consignments of named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS, all received direct for Unreserved Sale, and lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Friday Next.

CATTLEYA WAROCQUEANA, R. A. Rolfe,
By order of M. M. Linden, Brussels.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, December 19, at half-past 11 o'Clock, 100 lots of CATTLEYA WAROCQUEANA, a number of the Plants being in Bud. Two First-class Certificates were granted at the meeting of the Royal Horticultural Society on October 14 last, and the *Gardeners' Chronicle* of November 15 last states, "Among recent introductions, Cattleya Warocqueana is one of the most extraordinary."

On view morning of Sale, and Catalogues had.

Friday Next.—Established Orchids.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, December 19, 300 lots of various Established ORCHIDS, all in splendid condition, from Messrs. Charlesworth, Shuttleworth & Co.

On view morning of Sale, and Catalogues had.

Twickenham.—*Re* W. Gordon in Bankruptcy.

ABSOLUTE CLEARANCE SALE. TWO DAYS.
Important to Nurserymen, Lily Growers, and others.

MESSRS. PROTHEROE AND MORRIS are instructed by the Official Receiver, to SELL by AUCTION, on the Premises, The Wellington Road Nursery, and the Nursery, Staines Road, Twickenham, Middlesex, close to the Fulwell Station, L. S. W. Ry., on WEDNESDAY and THURSDAY NEXT, December 17 and 18, at 12 o'Clock precisely each day, without reserve, the whole of the choice GREENHOUSE PLANTS, Indian Azaleas, large white and other Camellias, 500 Calla æthiopica, Established ORCHIDS, consisting of large quantities of Cattleyas, Dendrobiums, Cypripediums, and others; HERBACEOUS PLANTS, in great variety, including 1500 Japanese Iris, probably the finest collection in the country; a large quantity of TREE and HERBACEOUS PÆONIES, Japanese MAPLES, an extensive assortment of English-grown LILIES, 2000 Imported LILIUM AURATUM, 1000 old English CLOVES, in pots; named RHODODENDRONS, the Stock of several new Japanese CHRYSANTHEMUMS, not yet in commerce; also the Erections of 8 GREENHOUSES, 1000 feet of Hot-water Piping, Slate Slab Staging, old Bricks, several loose Lights and Frames, a Small Lathe, 20 tons of Orchid Peat, Garden-pots, and other Sundries.

May be viewed the day prior to the Sale. Catalogues obtained on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B.—The beneficial interest in the Leases of the respective Nurseries will be offered on the Premises on WEDNESDAY, December 17, prior to the Disposal of the Stock.

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RHODODENDRON STOCKS, extra strong, 75*s*. to 80*s*. per 1000.
Apply, GRAY AND SON, Brox Nursery, Chertsey.

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ASH, common, 2 to 3, 3 to 4, and 4 to 5 feet.
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BROOM, white, 2 to 3 feet.
DOGWOOD, red 2 to 3 feet.
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FIR, Larch, 1½ to 2, 2 to 3, and 3 to 4 feet.
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LABURNUMS, 5 to 6, and 6 to 8 feet.
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PINUS AUSTRIACA, 1½ to 2, and 2 to 3 feet.
,, LARICIO, 1½ to 2 feet.
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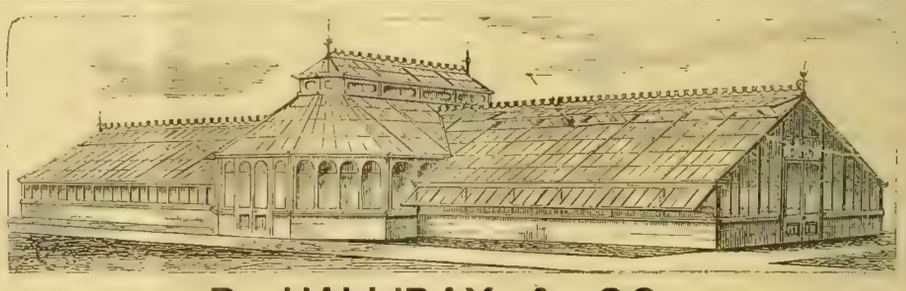
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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 13, 1890.

KNOLE.

THE date of the original foundation of Knole is uncertain. The manor appears to have belonged to the Saxon Kings of Kent, and then to the first Earl of Albemarle, husband to William the Conqueror's sister; later on, by marriage, to Roger, son of Hugh Bigard, Earl of Norfolk, and afterwards to James Fiennes, one of Henry V.'s famous soldiers, who was created Lord Say and Sele. As a public man of note, this worthy peer was seized and executed by Jack Cade and his rout. He had previously sold the place to the Archbishop of Canterbury, who enclosed the park and rebuilt the house, and for some generations Knole formed one of the sixteen palaces attached to the See of Canterbury, and occasionally visited by the Archbishops; Otford, another archiepiscopal residence, only four miles distant, being almost as large. Several Archbishops resided at Knole, and some of them died there, till, in the time of Cranmer, the place was relinquished by that Prelate to Henry VIII. Later on, Queen Elizabeth granted Knole first to Dudley, Earl of Leicester, and then to the greatest man the family of Sackville has produced — Thomas Sackville—Lord Buckhurst, and Earl of Dorset.

It is said that Cromwell, on taking Knole House, carried away several waggon-loads of arms, but the house still owns an armoury, where, in spite of Cromwell, there is a fine collection of warlike implements, and it is, as it long has been, a treasury of Art. Visitors to Knole cannot fail to observe that one of the buildings at the north-east corner of the pile was loopholed for the use of archers, and experts in the art of war have declared that if the house were garrisoned by 500 riflemen, in the absence of cannon, they would make it a tough job for any assailants to turn them out.

A visitor passes through the Green Court,

with its offices and statues, to the Stone Court, from which the house itself is entered by the Great Hall. A fine staircase leads to the Brown Gallery and to a number of rooms, including those occupied by the various monarchs, who in turn have received entertainment here. The house is remarkable for its collection of fire-dogs, specimens of which adorn every room in the mansion, most of them being of chased silver. The chairs and seats are models of their kind, and Oak tables, at which the retainers in olden times were feasted, are preserved in the Great Hall, where a Minstrel's Gallery and a daïs speak of ages past. Lord Byron describes this great house accurately in the following verse:—

"Huge hall, long galleries, spacious chambers, joined
By no quite lawful marriage of the Arts,
Might shock a *connoisseur*; but when combined,
Form a whole which, irregular in parts,
Yet leave a grand impression on the mind."

The irregularity of the house, derived from its different styles, does not, on the whole, seem inharmonious, and certainly does not prevent it from being an excellent example of a baronial residence, quite in keeping in appearance with its interesting associations and the lengthened tenure of the family who, by virtue of great vitality and a tenacious clutch, still hold the estates. The present owner bears the title of Lord Sackville.

Lord Ronald Gower, author of *My Reminiscences*, having the *entrée* everywhere, came to Knole several times. He did not always stay at the house, preferring his ease at his own inn at Sevenoaks, and dining when he felt inclined with the then owners of Knole, Lord and Lady Buckhurst, who have now become Earl and Countess De la Warr. Wherever he goes, Lord Ronald is welcomed as only a lord ever can deserve to be. Flitting down to Knole in the summer season, the bees humming, the weather charming, he says in his reminiscences, "We rambled about the endless corridors and rooms of Knole, and amidst the Beech groves in that rare old park." The wind being in the right quarter, and not in the east, Lord Ronald says, "There is nothing lovelier in England than Knole Park in the month of May." He had gone down to study and copy the pictures, but the weather proved so delightfully fine, that he preferred riding through the glades of the park heavy with perfume, dining, when he felt inclined, with the Buckhursts, "in the great gallery where James I. sits at one end gorgeous in garb as an Assyrian king." Another time he "found Lady Buckhurst sitting out under the old trees on the lawn near the bowling-green." His room, with the walls all covered with tapestry, was in the oldest part of the house, dating from the time of the Archbishop Bourchier in the fifteenth century. Dinner, in the great Cartoon gallery, picturesque and effective. On Sunday, service in the chapel, when the hostess played the organ.

The Park.

These notes on a mansion of world-wide fame will not, perhaps, be deemed too diffuse. As Knole is complete without elaborate gardening, which would hardly be appropriate to a baronial mansion, I shall only refer to the pleasant shrubbery and flower garden, and pass at once into the park of 1000 acres. One might almost say that even Knole would be nothing without its park, which Archbishop Bourchier enclosed just 400 years ago. This stately appendage skirts the town of Sevenoaks, and on its western side its characteristic timber tree, the Beech, overshadows the Hastings road for more than a mile. Wilderness Park is its near neighbour. The park is pleasantly varied by hill and valley, and table-land, and from many parts of it the turrets and gables of the great house are seen through the foliage. There are old Oaks as well as Beeches. One avenue of these commemorates the ownership of the Earls and Dukes of Dorset, since it is known by the "Duchess' walk," and one specimen tree was called "the old Oak" two centuries ago.

An illustration of this Oak was given in our columns so recently as June 7 of the present year (p. 712), together with a descriptive note by Mr. A. D. Webster. Not far off is a noble Beech, known as the King Beech. This is, as we believe, the same tree that was mentioned in our columns in 1841 as the largest undecayed and entire Beech in the kingdom. At that time, the trunk measured, at 6 inches from the ground, 39 feet 9 inches; at 1½ feet, 30 feet 9 inches; at 4 feet, 28 feet 1 inch; at 7 feet, 25 feet. The mean height of the tree was then given as 89 feet, and the circumference of ground covered by the branches 347 feet.

Walking from the house, and leaving the kitchen-garden on the left, an avenue of Beeches leads by a gentle ascent to a boundary of the park, and from this high spot the landscape includes great part of the weald of Kent, and much of the northern part of Sussex and of many an historic spot. Hever Castle, the home of Anna Boleyn; Penshurst, the cradle and tomb of the Sidneys; Eridge, once the great Earl of Warwick's hunting-seat, and now the site of a lordly residence of the Earl of Abergavenny, where some excellent gardening may be found. Beyond Eridge and the neighbouring town of Tunbridge Wells, is the high ground of Ashdown Forest with Gill's Lap, a clump of Fir trees in one of its loftiest points. I am scarcely quitting my subject in mentioning Gill's Lap, for around that spot lie the broad lands owned by the Sackvilles, almost since the Conquest, including Buckhurst Park, the seat of Earl De la Warr, and the manor-house of Bolebroke, from which the Dukes of Dorset took one of their titles. *H. E.*

New or Noteworthy Plants.

Cattleya rex, *n. sp.*

Recently, when visiting the establishment of L'Horticulture Internationale, Parc Leopold, Brussels, my attention was attracted by a small batch of Cattleyas in one of the new plant-houses. The general appearance of the plants suggested the idea of an extraordinarily tall and slender form of Cattleya labiata, but I was told it was an entirely new large-flowering Cattleya, which, although known to Wallis, and described by him as being the handsomest Cattleya, and seen by M. Linden, *père*, on his travels, had never been imported alive, although M. Linden had at different times sent two collectors after it. Ultimately, one of the collectors lately sent out by L'Horticulture Internationale succeeded in finding the plant, and, a certain number have been imported in good condition, and one has flowered, fully bearing out the character given it. A portion of the six-flowered inflorescence, and a drawing of the whole of it has just been sent me, and I have no hesitation in saying that it is one of the handsomest which the favourite labiata section of Cattleyas has yet given us. The sepals are 3½ inches long, and three quarters of an inch in width; white, tinged with primrose yellow. Petals ovate, 3½ inches in length, and 2¼ inches in width, creamy white; their edges wavy and slightly notched. The lip, which is obscurely three-lobed, is a wonderful piece of colouring. The convolute side lobes forming the tube which folds over the pure white column, are creamy white on the edges, and yellow streaked with red beneath. The interior of the tube, and the upper part of the front lobe, are of the richest crimson, veined in a beautiful manner with golden yellow. The front lobe of the labellum, which is finely expanded, and edged with a pure white fringe, is crimson of various shades, from the rosy hue to the purple tint, all worked in to form a richly coloured marbling. Taking the flower at a glance, the nearest thing I can liken it to is the Cattleya Imschootiana, for which Baron Schroder recently received a First Class Certificate at the Royal Horticultural Society, but this is different and superior in every respect. There is also something about the colouring of the lip which calls to mind a good form of C. maxima. In habit C. Rex is certainly distinct, the thin pseudobulbs being often a foot in length, and the single oblong leaf borne on them also about a foot long. *James O'Brien.*

Crassula recurva, *N. E. Brown, n. sp.*

This species was sent to Kew from Zululand, by Mr. J. M. Wood, the Curator of the Botanic Garden, Natal, and several plants of it have flowered during the last two years. It is in the way of C. rubicunda, but not so showy in its flowers; in the young stage, however, the rosettes of purple and green leaves are rather attractive. When the flowering stems are developed, the radical leaves disappear, and those on the stem being more or less recurved or revolute, give it a somewhat remarkable appearance. The following is a description of the plant:—

A herbaceous perennial, growing to about a foot in height, the stem, leaves, pedicels, and calyx, covered with reflexed white hairs, those on the leaves shorter and more papilla-like. Stems often more than one from the same rosette, green or reddish-purple. Leaves of the rosette 2 to 3 inches long, one-third to half-an-inch broad, sessile broadly linear lanceolate, acuminate, flat or slightly convex above, convex beneath, green, spotted with red-purple above, and entirely red-purple beneath; stem-leaves similar but smaller, and recurving, or strongly revolute. Cymes of moderate size, flat-topped. Calyx-lobes linear-lanceolate, acute, green, or purple, about 2½ lines long. Petals a little longer than the calyx-lobes, oblong, acute, with recurved-spreading tips, pale rosy-purple. Stamens as long as the petals, filaments whitish, anthers brown, with yellow pollen.—Zululand. *N. E. Brown, Herbarium, Kew.*

Abies Fraseri.

Silver Firs in general extend over very wide areas, and the variations they present are correspondingly great; but Abies Fraseri, so American botanists tell us, is confined to a few of the higher slopes of the Alleghanies in the States of Carolina and Tennessee. It rarely exceeds 70 feet in height, is generally much less, and when not fruiting, is not always easily recognisable from the balsam Fir, A. balsamea. In Fraseri, the mid-rib is more prominent on the lower surface than is balsamea, so far as we have seen. Engelmann states (see *Gard. Chron.*, Feb. 3, 1877, p. 147), that in all forms of A. balsamea, the thick woody cells which underlie the epiderm, and constitute what is technically known as the hypoderm, are almost entirely absent, whilst in A. Fraseri there is a continuous layer of them. Bertrand also (*Ann. Sc. Nat.*, 5 ser., vol. xx., p. 92), says that A. balsamea has no hypoderm, and these statements are confirmed by native specimens before us. We are, however, somewhat doubtful as to the value of this distinction, for in the cultivated specimen of Fraseri (identified by its cone), the hypoderm cells form only an imperfect layer. The position of the resin-canals in the middle of the leaf substance is the same in both. The rows of stomata on the under surface are said by Sargent to be eight to twelve in Fraseri, while in A. balsamea they do not exceed six. The cones of the two species are quite distinct, the bracts in A. Fraseri being longer than the scales, and consequently protruding beyond them very conspicuously, whilst in A. balsamea the bracts are relatively shorter than, and do not project beyond, the scales. Our figure was taken from a specimen kindly furnished us by Mr. Anthony Waterer, of Knap Hill. It shows the general shape of the cone, the scales of which were purplish, the projecting bracts golden-brown, so that, though of no great size, the cones were very attractive in appearance. The wing of the seed is also of a purplish colour.

Those who know the tree best do not give it a good character, either as a timber tree or for orna-

mental purposes. In a young state, under cultivation, it is a neat-growing shrub or small tree, with rich deep green leaves, and the cones, as we have said, are very ornamental. The cones of A. balsamea, as figured in Hoopes's *Book of Evergreens* (an excellent manual of cultivated Conifers), are much more slender regularly cylindrical, and with concealed bracts. The leaves on the fruiting branches are figured as sharply pointed, a character which was not observable in Mr. Waterer's specimen of Fraseri. Abies Fraseri was introduced by Messrs. Fraser to the nursery of Messrs. Lee, at Hammersmith, in 1811, the original tree being, in 1839, about 16 feet in height. As the tree is short-lived, it is hardly likely that any of the originally-introduced trees are now in existence, whilst it is stated that much of the seed introduced as Fraseri of late years belongs really to balsamea.

There is a very neat dwarf Silver Fir, known as Hudsonica, and which is especially useful on rockeries. It is sometimes referred to balsamea, sometimes to A. Fraseri as a variety. Like A. balsamea it has no hypoderm, but the resin-canals are nearer to the epiderm than in that species, and its cones have not been recorded. Its position is, therefore, somewhat doubtful. Let those who want a dwarf evergreen, of somewhat spreading habit, not be deterred from asking for Hudsonica on that account.

Fraser, who was the first to discover the tree, called after him, is almost forgotten by British horticulturists, in spite of the fact that he was one of the most intrepid and diligent of collectors. It was he who introduced numerous plants to our gardens through the Lees and Loddiges, among them Rhododendron catawbiense. In 1780 he went to Newfoundland, four years after he travelled in Carolina and Georgia, and other southern states. From 1789 to 1796 he was again in the States; in the latter year he betook himself to St. Petersburgh, where he was commissioned by the Emperor Paul to re-visit America. This time he took with him his son John. From the United States he went to Cuba, returning to Europe with rich collections in 1802, but the Emperor Paul was dead, and his successor cared not for plants. Fraser had a difficulty in getting his money, and again betook himself to America. He returned to London in 1811, where he sickened and died, having crossed the Atlantic no fewer than seven times, at a period when crossing the Atlantic was not the easy thing it is now. After the father's death, the elder son, John, again visited the United States, and remained there as a collector till 1817, when he returned to England, established himself as a nurseryman at Ramsgate, and died in 1852. To him we owe in part the introduction of the Dahlia. The denomination of a genus of Gentians, "Frasera," and of a species of Silver Fir, Abies Fraseri, are very meagre compliments, if measured against the work done by these collectors. *M. T. M.*

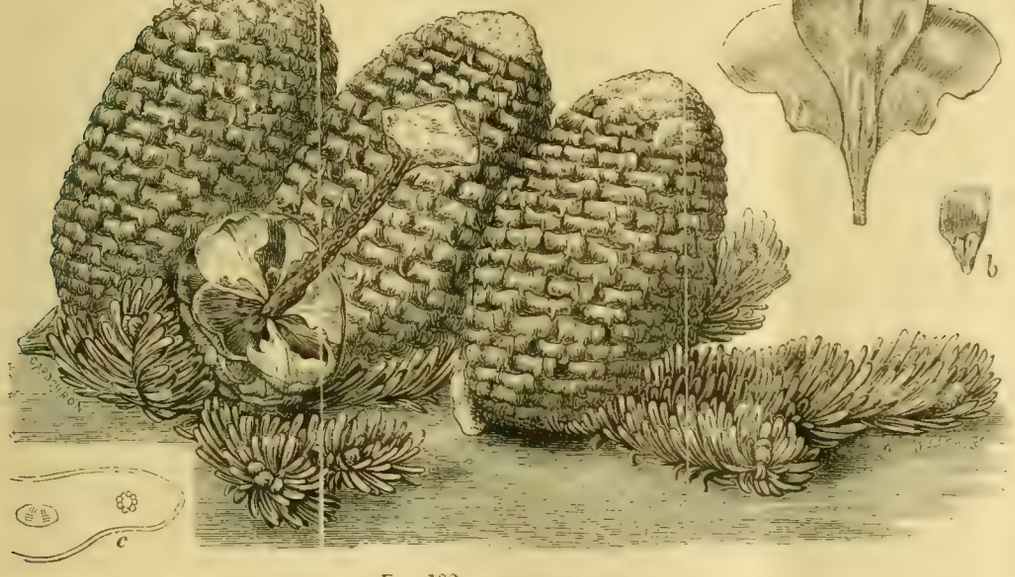


Fig. 132.—Abies fraseri.

Cones, purple; bracts, golden brown; *a*, scale and bract magnified; *b*, seed n.s.; *c*, section of leaf magnified, hypoderm not shown.

Orchid Notes and Gleanings.

BYGROVE HOUSE, CLAPHAM PARK.

In this well-kept and generally very interesting garden, some capital examples of Orchid culture, in conjunction with other good gardening, are to be found at the present season. Sydney Lawrence, Esq., is the proprietor of Bygrove, and Mr. Chard is his gardener.

The Orchid-house—a large one, used as a Pine-stove until twelve months ago—has had a new roof of neat design, and the arrangements made inside are now much more commodious than formerly, and conducive to the well-being of the plants. The Orchids consist of many species and varieties, which are grown together. At the warm end were noted Oncidium Lanceanum in excellent health; Dendrobium Dalhousieanum with pseudobulbs of more than 5 feet in length; a strong plant of D. densiflorum, which this year carried over forty flower-spikes; the new D. Statterianum, with flower-spikes; and D. nobile, D. fimbriatum, and D. Paxtoni were doing well; as also Lælia purpurata, and Cattleyas Trianæ, Mossiæ, and Mendeli. On the central stage were observed fine examples of Peristeria elata, Phaius grandifolius, in 10 and 12-inch pots, a plant of the latter showing twelve fine flower-spikes; large pans full of Cypripedium barbatum, and a very large specimen of C. Roezlii, which is said to be rarely out of bloom. At the cooler end of the house were found good plants of Cymbidium Mastersii, one having eight and another six flower-spikes, with blooms just opening; large baskets of the quaint Cœlogyne fuliginosa were blooming freely, some large pans full of C. cristata, and a goodly specimen of the rare C. c. alba. Other plants in flower consisted of Lycaste Skinneri, Anguloa Clowesii, Epidendrum Stamfordianum, Bolbophyllum Lobbi, the latter a large specimen. In a smaller house close by, there were double and single Chinese Primulas; and hanging overhead, and at rest, were seen strong plants of Dendrobium Wardianum, one of which had a pseudobulb of 3 feet long. The Odontoglossum-house—a small lean-to structure with a northern aspect—contained O. Pescatorei, O. cirrhosum, and some fine plants in variety of Cypripedium insigne, one of which very nearly approached in its marking C. i. punctatum violaceum.

Orchids also find accommodation in the stove—a wide span-roofed structure. Phalænopsis Schilleriana, P. amabilis, Oncidium ampliatum majus, O. luridum, Saccolabium Blumei majus, Cypripedium Stonei, C. caudatum, Aërides, and Vandas in several varieties were noted; and a fine plant of Angræcum sesquipedale, just showing flower, hung over the doorway. In the centre bed of this stove were beautiful specimens of Musa Cavendishii, Phyllotænium Lindeni, Anthurium crystallinum, Adiantum Farleyense, Pancratium fragrans, and six fine plants in 9-inch pots of Eucharis amazonica, the very picture of good health. *J. P.*

Catasetum barbatum and Others.

The finest of this variable species is that flowered by Sir Trevor Lawrence, Bart., M.P., viz., C. b. proboscideum. Another pretty form comes from Mr. G. Cypher, gardener to Mrs. General Studd, Royal Crescent, Bath; it is a male form, and has a spike of about twenty flowers with green sepals and petals, barred with red, and the usual curious lip of the species, with its white and green crest. R. A. Todd, Esq., of Honeyden, North Cray, Kent, has recently flowered a very fine C. macrocarpum (female) and other good species, and has still others in bud. Catasetum Rodigasianum, one of the handsomest of the genus; C. atratum, C. cristatum, the fine C. Bungerothii, and the new C. B. Randii, with clear yellow flowers, have flowered in different collections, and have always been admired. Some of the Cataseta are known to produce dissimilar flowers on the same plant, and even on the same spike; those who flower any should carefully number and tabulate them, so that further information may be gleaned. *J. O'B.*

Paphinia grandis.

It would be interesting to know which Orchid is considered to bear the largest flowers in proportion to its size. I think Paphinia grandis would well be worth considering in that point. Its slender 4-inch-high plants often bears several spikes of from one to three flowers each. Judging from a flower just to hand, M. Linden, of Parc Leopold, Brussels, seems to have fallen on a particularly fine strain of it. The flowers sent has sepals and petals each over 3½ inches in length, bright claret-crimson at the tips, and white, spotted with crimson, at their bases. The column is yellow, and the lip a most wonderful combination of devices to aid fertilisation by insect aid. The front lobe has numerous white processes, with curved guards on each side; and above is a callus, which directs to the channel leading to the stigma. Again the side lobes of the lip horn-like processes, in two pairs at the narrow isthmus of the lip, the whole forming a perfect series of direction posts. *J. O'B.*

Woodhatch in Winter.

This is probably the least bright month in the Orchid-houses. But in such a well-managed collection as Mr. T. B. Hoywood's, near Reigate, it is very interesting to watch the healthy sheen of the broad leaves, the plump pseudobulbs, and the great promise of incipient flower-scapes. All these points of good culture show how Mr. Salter, the gardener, succeeds, as he invariably does, in anything he takes in hand—teste, Chrysanthemums, his record in this season of ten 1sts and 2nds being very creditable. Among the Orchids now in flower are Oncidium Forbesii; I have never seen the form grandiflorum the variety here quite deserves such a name. Of the Masdevallias, a large number of tovarensis and ignea are in flower, some of the latter being broader in petal and deeper in colour than usual.

M. Veitchiana and Schlimii are also in evidence; Schlimii seems to keep on throwing up spikes throughout the season. Some of the pots of Phalænopsis amabilis were quite gorgeous to behold. Among the Orchids in the Phalænopsis-house are placed little flowering Sonerillas. The flowers of this plant are extremely pretty, these are of a rare, exquisite, mauve tint, and the bright, golden stamens are like miniature Cockatoo crests. Mr. Haywood's collection of Odontoglossum crispum is well known—one large, purple-flushed variety compelled great admiration. Very few could be found fault with on the score of the brown spots. Of the Vandas, tricolor and lamellata were in flower. The variety of V. tricolor was not named: it was almost worthy of it. In another house were to be seen Cypripediums Spicerianum and leuchorroda, with Dendrobium Wardianum (huge spikes), and Cymbidium giganteum. It is curious to notice in the last-named how delicately balanced the labellum is, so that it sways with the weight of the visitor, and thus causes it to lightly brush the stigma. *C. A. M. Carmichael.*

Masdevallia bella, *Lindenia*, t. 257.

Cœlogyne peltastes, *Lindenia*, t. 258.

This species, originally described by Reichenbach in our columns (xiv., 1880, p. 296), is remarkable for the concave pseudobulbs, which fit on to the branch of a tree, like greaves. The flowers are green, with the exception of the lip, which is white, with pink lines. Mr. Rolfe considers that these saddle-like pseudobulbs, fitting by their edges tightly to the branch, form receptacles for water. Mr. Rolfe is confirmed in this opinion by having seen the roots making their way into these singular cavities.

Catasetum Rodigasianum, *Lindenia*, t. 259.

A new species introduced from South Brazil by the Horticulture Internationale. The sepals are green externally, spotted with deep purplish-brown. The inner surface is almost entirely of the latter colour; the petals are green, and purple spotted on both sides. The lip is greenish-yellow, sprinkled over with small brown spots; the column is green. The female plant is not at present known. It is dedicated to the Director of the National School of Horticulture of Ghent.

Chysis aurea, *Lindenia*, t. 260.

The flowers of this are more than an inch across, sepals and petals oblong, yellow spotted near the tip with pink, spots aggregated into a blotch; lip orange with red veins, concave 3-lobed, with the lateral lobes crisped and marked by five prominent veins. The flowers are self-fertilised, but for all that, hybrids have been raised artificially, such as C. Chelsoni×, a cross between bractescens and C. lævis; and C. Sedeni×, between C. Limminghei and C. leractescens, the latter being the pollen parent.

ORNITHOLOGY IN RELATION TO AGRICULTURE AND HORTICULTURE.

(*Continued from p.* 654.)

The Rook.

"Forasmuch as innumerable number of rooks, crows, and choughs, do daily breed, and increase throughout this realm, which rooks, crows, and choughs, do yearly devour and consume a wonderful and marvellous great quantity of corn and grain of all kinds, that is, to wit, as well in the sowing of the same corn and grain, as also at the ripening and kernelling of the same, and over that a marvellous destruction and decay of the covertures of thatched houses, barns, ricks, stacks, and such like; (2) so that if the said crows, rooks, and choughs should be suffered to breed and continue, as they have been in certain years past, they will undoubtedly be the cause of the great destruction and consumption of a great part of the corn and grain which hereafter shall be sown thoughout this realm, to the great prejudice, damage, and undoing of the great number of all the tillers, husbands, and sowers of the earth within the same."

So runs the preamble to an Act of Parliament passed in the twenty-fourth year of the reign of King Henry VIII. (1532). And for remedy of this state of things it was enacted that every occupier of land, "as well spiritual as temporal," should do what he could to destroy those birds, upon pain of a "grievous amerciament." Also that every parish should provide a net to take crows, rooks, and choughs, with all things requisite to the same, and maintain the same for the next ten years. The net was "with and after a shrap made with chaff and other things meet for the purpose," to be laid at such times of the year as were convenient for destruction of the birds, and in such places as should be thought expedient. Any man, with licence of the owner of the ground, might take crows and rooks, and was to be paid after the rate of two-pence the dozen.

The clause relating to the crow-net only was revived in the reign of Elizabeth, but it was not until the year 1856 that the Act, though long obsolete, was finally repealed.

Yarrell says that in Scotland legal persecution began in 1424, and another Act in 1457 forfeited to the Crown all trees whereon rooks were suffered to build their nests, should the nests be allowed to remain until Beltane (May Day).

The "crow-net" is figured by Willoughby in his *Ornithology*, and Bishop Stanley tells us of an entry in the presentments concerning Alderley in Cheshire in 1598. "We find that there is no crow-nett in the parish."

Shrap, or shrape, appears to have been a piece of ground scraped or swept—perhaps where the snow had been swept away in hard weather. We have *shrapen* in Middle English for scrape, and in Webster's dictionary we find "Shrap, shrape=a place baited with chaff to invite birds."

Ever since those days, wars of extermination have been periodically waged upon the rooks. And at times the destruction wrought, not only among them but on many other birds, must have been enormous, until, in 1863, an Act was most wisely passed, imposing a penalty of £10 upon anyone laying out or sowing poisoned grain or seed. Since that time the rooks have had an easier time of it.

But everywhere in the present century a kindlier feeling towards the rooks has gradually grown up. Here and there a man was found to allow that they did some good, and at last one perhaps more observant than his fellows, and of independent opinion, was found to declare that they did more good than harm! He, poor fellow, must have had a bad time of it at first among his agricultural friends and neighbours. Now, it is pleasant to think, this is the opinion of many, if not most, agriculturists. Most of them, that is to say, who do not happen to live in a district where the rook is exceptionally and perhaps unduly abundant, and where the proportion of pasture land is small. I do not know whether it is that Scotland is remarkably prolific of rooks, or insufficiently productive of the rook's natural food, but certain it is that there the rook wars have broken out most fiercely and most frequently.

At all events, practical men will now, if not aver that the balance is in favour of the rook, at least allow that the balance is very nicely poised. Let us try and examine the evidence, and see on which side it will go down.

It will be best first to consider the mischief the rooks can do, and then the good.

Rooks damage, or are alleged to damage, the crops in the following ways:—

They dig up, and eat, the corn as soon as it is planted, and until it is sprouted well above the ground.

They eat and knock down the corn when it is nearly or quite ripe. And it is also said that in some places they damage it soon after it has come into ear. Crops of Peas are also damaged by them.

They dig up and eat Potatos, both the "settings" in spring, and the ripe tubers in autumn.

They peck holes in Turnips in winter.

They pull the corn straws, with ears attached, out of the ricks in winter, and occasionally do some damage by destroying the thatch of ricks, and thus letting in the weather.

Besides this damage to crops, rooks steal the eggs of partridges and other birds.

This is a serious indictment. There may also be some minor charges to be met, but the five enumerated first are, and have for years been, almost universally brought against the rooks, and they are mainly the cause of the intermittent war which has for many generations been waged against their race. It will be well, therefore, to consider these five charges in detail.

To take the first. There is no doubt that newly-drilled corn, until it has grown well above the surface of the ground, must be carefully watched, and the best means must be taken to frighten and drive away the rooks during the critical time. But that this corn is not the food which the rook would choose to a large extent is easily shown. Almost any agriculturist will tell the enquirer that autumn-sown corn requires but little watching, and is very little troubled by the rooks. Why? The reason is plain. In autumn other food is plentiful. Grubs, worms, and insects still abound, and are found near the surface of the ground, both in the stubbles, as well as in the ploughings, and among the rich aftermath grass. It is the spring-sown corn which suffers. Early spring is always a trying time for birds; most of the old food has been eaten up during the winter, the insects have not yet come forth, and no new food has been produced. No wonder, then, that the temptations of a newly-drilled field is too much for the rooks. It is doubtful whether they can now do anything approaching the same amount of damage as they did in the pre-drilling days. Now-a-days, although they can dig down to the corn, and the little cone-shaped holes made by the birds' beaks can everywhere be seen in a field harried by rooks, yet this digging must take time. In further proof of the fact that it is necessity, in a great measure, which drives the rooks to the spring corn, it is most noteworthy to observe that it is only in very dry, bitterly cold spring weather that the rooks become unbearably troublesome in this respect. And it is rather unfortunate that this same severity of the season, which makes the unbroken ground too hard for the rook's bill, and drives the worms far below the surface, has also the effect of drying and pulverising the soil on the newly-drilled lands, and of rendering the seed corn peculiarly accessible to the rook's bill. Let a change in the weather, accompanied by soft, warm, growing showers, ensue, and it will soon be seen that a large number of the birds which had persistently evaded the efforts of the crow-keeper, will neglect the grain for the worms and grubs now teeming to the surface.

Newly-planted Beans are also liable to the attacks of the rooks. There is an old country saying—

> "Sow four Beans as you make your row,
> One to rot, and one to grow,
> One for the pigeon, and one for the crow."

But the damage done in this respect is probably not very serious; that is to say, it is probably very seldom that a crop of Beans at harvest is much lighter than it would have been, had the rooks let the field alone in seed-time.

Now that parents are obliged to keep their boys at school until they are twelve years old, and store their heads at the expense of their bodies, instead of letting them earn the few shillings which would bring in such a welcome addition to the weekly food supply in many large families, it is very difficult to get a boy for crow-keeping. Yet "crow-keepers," with their horns and "clappers," are perhaps the best means of protecting the newly-sown fields,

Rooks soon get accustomed to the mechanical wind-turned clappers. If the crow-keeper is armed with pistol and powder, someone should go up once a day and send a charge of shot at the birds, for they soon seem to know when blank cartridge only is used. One or two of their number shot and gibbeted, is generally a good "scare-crow," and has been known to deter them from revisiting a field of ripe corn they had attacked. A clockwork crow-keeper has been invented. A figure of a man in thin wood carries a gun, which at regular intervals is raised to the shoulder and fired. The intervals are regulated by setting a dial.

In North Norfolk the writer was informed that seed corn was dressed with a mixture of tar and lime, which effectually protected it from the rooks—a custom, which, it was said, had been practised for many years. By an Act of Parliament passed in the 26th and 27th years of her present Majesty (chapter 43), it was made illegal to sow, or lay out, any poisoned grain or seed; but it was expressly stated that nothing in the Act prohibited the use of any solution or ingredient for dressing, protecting, or preparing any grain for *bonâ fide* use in agriculture.

Fields of ripe and ripening corn, chiefly Wheat and Barley, are often terribly punished by the rooks. This takes place most frequently, and the crop suffers most, when the corn has been laid by heavy rain or high winds. The sides and corners of the fields are almost always preferred by the birds, and some fields, from their position and surroundings, are more visited than others. A corn-field adjoining the pastures and meadows which the rooks frequent, is always more liable to their attacks than one lying in the midst of an open, treeless, arable country. When the flock is busy worming on the grass, it is easy for a few birds nearest the hedge to flap over into the corn almost without being noticed. Large trees, to which the rooks habitually resort in summer, are also a source of danger to a corn-field near them. Hidden in the thick foliage, the rooks wait, silent and unnoticed, for a good chance of swooping down upon the field unobserved. It is not only the corn they eat on these occasions, but what they spoil. Even when the corn is upright, they will sometimes knock it down for themselves. This happens more frequently with a thin crop and short straw. Raising themselves to their utmost stretch, or rising a little way, they beat the corn down with flapping wings. The Bean crop in harvest does not appear to suffer much. It is a curious fact, that just after the harvest is off the ground, the rooks very seldom, if ever, pay any attention to the large amount of scattered grain left on the stubbles, but rather prefer at that season to haunt the grass fields for the grubs and worms they find there. This seems to indicate that the rook's fondness for a farinaceous diet is, after all, not very great.

As with the spring-sown corn, watching the crop is the only way of mitigating the damage. As the attacks are often limited to a small space, this is more easily carried out than in seed-time; and the hedges, being in full leaf, it is often not difficult to creep up to the birds in the corn, when a couple of shots into them as they rise will give them a considerable scare, and the bodies of two or three of their number hung up will often deter them from returning.

In the Potato field, rooks occasionally do some damage by digging up and carrying off the newly-planted "settings" in spring, and also the ripe tubers in autumn. But in mitigation of this offence, it can be said that the amount of labour which the rooks would have to expend before reaching their spoil prevents them from doing a great deal of injury. The mischief at either season is not of very common occurrence, while the visits paid by the rooks to the Potato fields in autumn are, often at all events, made for the purpose of searching out the grubs which are concealed there; and the writer can say that he has never heard of rooks doing any appreciable damage among ripe Potatos in the district with which he is best acquainted. The latter part of this charge is, indeed, seldom or never there brought against the rooks.

Rooks will, in severe seasons, peck holes in the Swede Turnips which are still in the fields, and not covered up in any way. Besides eating a larger or smaller portion of the pulp, they let the water into the bulb at the hole made by their beaks, and thus accelerate its rotting. It has been suggested, that the rooks are in search of a grub or maggot in the Turnip, but enquiry has failed to substantiate this theory, which may, however, have some truth in it. But roots, if they are intended to keep in good condition, should be taken up and "pitted" before the hard weather comes; they are then safe from frost and rooks alike, though the latter will settle on the top of the pits, and peck the roots if they are not properly covered up. Root-crops left out in the open all winter, and neither pitted nor covered over by the ridging plough, as is the practice in some districts, will probably not be worth much after a spell of weather severe enough to induce the rooks to feed on them. Unless speedily eaten up by sheep and cattle, they are apt to go bad very soon, and therefore, the rooks' alleged depredations are practically of very little account.

Unroofing ricks and pulling them to pieces in severe weather, when the snow is on the ground, is another charge brought against the rook. The writer heard great complaints of this kind of damage in North Norfolk. *O. V. Aplin, Member of British Ornithologists' Union.*

(To be continued.)

PLANT NOTES.

CALOCHORTUS MADRENSIS.

This new and elegant species, recently figured in the pages of the *Gardeners' Chronicle*, reminds one somewhat of C. pulchellus in the brilliancy and abundance of its flowers, and will probably be as easily managed as that wide-spread and highly popular species. C. madrensis, which was found a few years ago by Mr. Pringle during his Chihuhua expedition, flowers the latest of all the Mariposa Lilies, coming into flower long after all the others were past. Should this character be permanent, this species will prove a great acquisition to our none too large collection of dwarf summer bulbs. C. albus, which we rarely see now, is as hardy as C pulchellus, and if protected from excessive moisture, during the resting season, makes fine strong bulbs. There is, indeed, no reason why all these Calochorti should not be cultivated in the open border, lifting and ripening in summer, replanting in autumn, and protecting with loose straw or mats from severe frosts in winter. At any rate we are trying this plan, and learning from previous failures hope to succeed. *D.*

Limnanthes Douglasii.

Readers on the look out for Bee plants should not fail to give this pretty little plant a trial. A prostrate annual belonging to Geraniaceæ, bearing a profusion of flowers with white, striated petals, and a clear, yellow base. Bees are very fond of these flowers, and on bright days we have often seen the ground literally covered with them. But besides being useful in this way, it is interesting from a horticultural point of view, the elegance of its fragrant flowers and bright green succulent foliage mark it as well worthy a high place in our list of annuals. The improved form, grandiflorum of nurseries, will be the best to grow. Seeds may be sown in the open in early April. *D.*

Veronica cupressoides var. variabilis,

known in gardens as V. salicornioides, is, in the South at least, one of the most tantalising and unsatisfactory plants we have ever had to deal with. For a year or two it goes on famously, and forms a tuft often a foot across, when suddenly the whole plant will die off. Can anyone explain it? *D.*

Iris Kingiana.

One of Dr. Foster's new species, and named in honour of Dr. King, Director of the Botanic Gardens at Calcutta, and described in the *Gardeners' Chronicle*, May 7, 1887, has just now (November 26) opened its flowers in the Kew collection. Its usual flowering time in England is May, the leaves attaining their full development towards the latter end of summer. The withered leaves of the previous summer being still on the plants, we were not a little surprised to see fresh flower-buds, and in a few days fully developed blooms. The plant in question differs from that figured in the *Botanical Magazine*, in having much longer and broader standards, and better-marked falls. The rhizomes were sent by Mr. Duthie from British Garwhâl. *D.*

Grislinia littoralis.

This pretty New Zealand shrub is a welcome addition to our shrubberies, and is, indeed, a beauty all the year round. It is not prized for its flowers, as they are very inconspicuous, but on account of its broad glossy leaves of a light green colour above, and glaucous beneath. It is also a most useful shrub for planting near the sea, and in smoky districts. It is easily propagated by cuttings made 4 inches long, and cut just below a joint with a very sharp knife, so as not to tear them, and put in some light soil round the sides of a 48 pot, and placed in a close propagating case, roots in a few weeks; after they are rooted, gradually harden them off. *T. H.*

Azara microphylla

is among the neatest of evergreen shrubs we have, it having a very graceful habit of growth. The leaves are glossy, are of unequal size, are in pairs, and small, and deeply serrated. The flowers are borne in clusters in the axil of the leaves on the lower side of the branches, and are very fragrant. These are followed by berries of an orange-red colour. In the winter the plant needs a little protection in most districts, excepting by the sea in the south and west, unless in sheltered positions. It makes a splendid wall plant. Propagation is by means of cuttings taken off in September and placed in cold frames; but a much better method is to put a dozen in a 48, and keep them in a close case in a temperature of 60° for about a month. *T. H.*

FLORISTS' FLOWERS

WINTER-FLOWERING CARNATIONS.

The Carnation claims our admiration at the present season, as in the height of summer. I observed a fine collection of the plants in flower recently at Messrs. Paul & Son's, Cheshunt. The plants were from French stock, and were, contrary to many of our raising, of a bushy, compact, habit of growth, and the average height 15 inches. There was a considerable variety of colour in the flowers, ranging from white to crimson, scarlet, and purple.

Carnation flowers last long at this season, and their value as cut flowers is well-known to all. The varieties which pleased me most at Messrs. Pauls' were two very good, pure white ones, viz., Madame Carlé, which is not new, and Miss Moore, a novelty which seemed to have flowers of better form, quite as freely produced, and as sweet-scented. Isabella Mingat is white, prettily marked with purple-tinted lines; Victoria is blush-coloured—a charming, free variety, quite dwarf in habit—one of the best. La Fontaine is distinct, not too double, and with a pale, yellow ground colour that well displays some scarlet flakes and stripes on the petals. Iima is not new, but it is still the best rose-coloured variety; the flowers are large and of good form, and the habit excellent. Le Centenaire Mr. Paul takes to be the best of the scarlets, it has large flowers with broad petals of considerable substance; Gambetta, also scarlet, is well worthy of a place in the selectest collections. J. P. Nugue is another good, scarlet-coloured variety, as also Baroness Alice de Rothe-

child, which is taller in growth than any of the above, but the flowers were the brightest and best shaped of any of them. The plants were grown in the open, and dug up and potted in the months of September or October.

It is stated that the best results are obtained from plants grown in France, and I believe it, but surely we ought to be able to grow a hardy plant like the Carnation is, as well as the French growers. These dwarf-growing varieties lack nothing in hardiness, and if the French have any advantage over us, it must be in climate, which causes plants to set flower-buds more freely [and make shorter growth. Ed.] than with us. By selecting sheltered positions, well exposed to the sun, we may be enabled to obtain as good results. I do not recommend the planting-out system for winter flowering Carnations in small gardens, as in these only few plants are required, and the best returns are got by growing them in pots at all times. Cultivation in their case is simple, and may be summarised in a few lines. The propagation by means of cuttings should be carried out in late winter or early spring, if young plants are thought most desirable, and I think they are. I have had the best plants and the greatest number of flowers when the cuttings have been put in towards the end of January. Small side-growths slipped off make the best cuttings, forming roots quicker than the thicker leading shoots. At that early period of the year, the cuttings are not liable to shrink in substance, as is the case at a later period. A frame with a moist bottom-heat of 80° will answer capitally for striking purposes; and if bell-glasses, or little boxes with a sheet of glass laid over, but not touching the cuttings, are used, roots form freely. The cuttings should be planted firmly in sandy soil, the pots or pans being plunged to the rim in the hot-bed, which should be covered with a layer of fine coal-ashes or Cocoa refuse. Grow them on steadily without any check after they are potted off, and especially in the spring months. It is best when the cuttings are rooted to place the pans containing them on a shelf near the glass in a warm house, and in a week or so plant each new-rooted cutting in a small 60, repotting them as soon as it is seen that they require it. When they have been inured to a cooler atmosphere, place them in cold frames; air may be admitted freely to the frame in mild weather. By the end of May the plants may be arranged on a bed of coal-ashes out-of-doors, choosing a sunny position.

Carnations like moderately rich soil, the staple being decayed fibrous loam, and if some mortar rubbish be added, it will be of benefit. Place a single stick to each plant, attending to the watering and syringing of the plants in hot dry weather, and keep them clear of insects. *J. Douglas.*

The Bulb Garden.

IMPORTED LILIUM AURATUM.

The early consignments of this Lily are unusually fine this season, the bulbs are heavy, solid, and plump, of good size, and above all show a decided desire to recommence basal root action. A large batch placed in cocoa-nut fibre a week or two since are pushing their roots freely at the present time, November 26, and being by no means isolated, we may expect to hear of good results accruing from the earliest flowered batches in 1891. Nor is this all, for with these basal roots, so prominent at the present time, the future bulbs will stand a good chance to fully establish themselves, which cannot possibly ensue in those cases where the bulbs emit very few if any basal roots at all, and where the development of the flowers has to depend absolutely upon the stored-up food which the bulb itself contains, assisted as it undoubtedly is by the great mass of stem roots which this particular Lily is prone to produce annually. Finer Lily bulbs of this, in better condition, have not reached us among the early importations for years, and such being the case, the chances for establishing clumps in the open borders are more favourable than usual, and all who anticipate such cannot do better than take it in hand at once, for nothing that we can plant in the open borders can possibly produce better effect than a few fine clumps of this handsome Lily, which once established, are as simple to manage as anything that could be named. The great drawback to this Lily becoming established is the fact that many thousands of bulbs which do reach us apparently sound and plump, never attempt to produce a basal root at all, but notwithstanding this, the bulbs send forth stems, and many of these perfect flowers, just at the expense of the bulbs, and when the flowering is complete, nothing but the shell, as it were, or a mass of rotten pulp, remain to mark the spot where this noble Lily stood. In planting them in the open, select a sheltered spot, well-drained, and plant the bulbs five or six inches deep in very sandy loam, or peat and loam in equal parts, but without manure, this latter being best added in a modified form when the growth is being made in summer time. *J.*



Fig. 133.—Cypripedium villosum. (see p. 689.)

Lilium longiflorum, *var.* Harrisii.

Newly-imported bulbs of this handsome and valuable Lily, which were potted a few weeks since, will now need attention, as they will be pushing their sturdy stems above the plunging material. The moment this is apparent, they should be removed to a cold frame, which may also be freely ventilated on warm sunny days. Another reason why they should not longer remain in the plunging material after growth has well begun, is, that they soon push forth stem roots, and these are either broken or very much checked by after-exposure. The slightest frost also disfigures the young leaves; but should the weather be severe, employ only sufficient artificial heat to exclude frost till the end of the year. Avoid, too, a stuffy atmosphere, which so materially assists green-fly, the worst pest that this plant has to contend with. Should green-fly attack them, and they most assuredly will, endeavour to fumigate the plants while in a frame with the tops close to the glass, for it is in the youngest heart leaves at the summit of the plant that these aphides find a shelter, and unless the house is densely filled with smoke, it does not descend in sufficient force to kill them. The plan I adopt is this, when the plants are too tall for the pit, I fumigate the house thoroughly on a still night, and the following day dip the heads of the plants in a solution of quassia and soft soap, the former will prove fatal to those aphides on the leaves and stems, while the latter will be equally effectual to those sheltering in the top of the plants. Severe measures like this, and they had better be precautionary than otherwise, will keep them down, but ordinary fumigation will not. The above repeated twice, generally carries our lot—which is about a thousand—through till the flower buds are of full size, at which time any insects are more easily dealt with; never allow them to get a footing, is the best advice I can give, but fumigate to keep them at bay. One large market grower of my acquaintance informed me that it cost him more for fumigating his batch of this Lily than the crop of flowers produced, and if this be true, some other crops had to pay for the purchase of the Lilies, as also the growing, well managed, however, this need not be. *J.*

Chiswick Gardeners' Mutual Improvement Association.—Mrs. S. A. Lee, Chiswick, has, with the object of encouraging original research and observation, again very kindly offered a sum of £15 10*s.* to be distributed in prizes for essays on horticultural subjects.

EPIMEDIUMS.

Botanists have given specific rank to eleven, or, at most, twelve of these elegant hardy plants, although in gardens where they are now widely cultivated, and possibly amongst which there are a few hybrids, something like thirty would be under rather than over the mark. Some few of these names are, doubtless, mere synonyms, while a few refer to slightly improved forms of the old species. Be this as it may, however, they are greatly confused in gardens at the present time, and it seems to be a rare chance to get a plant under its proper name from the nurseryman. Mr. Baker's *Synopsis*, published in these columns in 1880, is by far the best work on the subject, and the only available one to most of our readers. In this work the garden synonymy has been worked out with the greatest care, and in such a way as to enable anyone to utilise it with ease.

The Epimediums are such a beautiful class of plants, and are being sought after so largely for planting rockeries, that a short list of the garden names, and their proper place in Mr. Baker's *Synopsis*, may be a help in forming collections of these plants. We had about one dozen of the so-called species, and when in flower we worked them out as follows:—E. niveum, Hort.=E. macranthum, E. luteum and E. caucasicum=E. pinnatum, E. versicolor and E. colchicum=E. macranthum, E. sulphureum and E. elegans=E. rubrum, E. diphyllum majus=E. Musschianum, E. Musschianum violaceum=E. concinnum. This is a rare species, with pretty nodding purple flowers, and soft green leaves. Besides these, one may still find a few other names occasionally cropping up, all or most of which will be found in Mr. Baker's *Synopsis*. These Epimediums, mostly natives of Japan, are perfectly hardy with us, and although they sometimes get blackened with late spring frosts, this is far more common in sheltered than in exposed situations.

As rock plants, they are invaluable, not only when flowering in spring, when their pretty varied-coloured, curious Toadflax-looking blossoms, and elegantly-tinted leaflets are looking in perfection; but all through the summer and autumn months, the masses of fine foliage on graceful wiry-looking stalks, give a tone to the general effect, that it would be hard to exceed with plants of equal beauty and hardiness. They may be, and often are, grown in the front of mixed borders, where, to my thinking, most of their beauty is lost. To see them at their best—and this is well worth striving to attain—they should be perched up almost on a level with the eye, and, if possible, with nothing solid behind them. A light and not too rich soil suits them well, with plenty of sunshine. They do fairly well in shady spots, but require exposure to direct sunlight to bring out the various tints, and beautiful veining of the young leaves in spring. As pot plants, they make a pretty group, with very gentle forcing in early spring, and, though lacking in colouring, they have a very pleasing effect. The tufts intended for pots should be lifted from the ground in September, potted, and allowed to stand in a cold frame until a fortnight or three weeks before they are required for the house. After having flowered, they may be planted out again, and others lifted for the following spring. In addition to the species mentioned above, there are our native E. alpinum, E. elatum, E. sagittatum, E. Peraldérianum, E. pteroceras, and E. diphyllum, the latter, as well as E. sagittatum without the usual spurs. *D. D.*

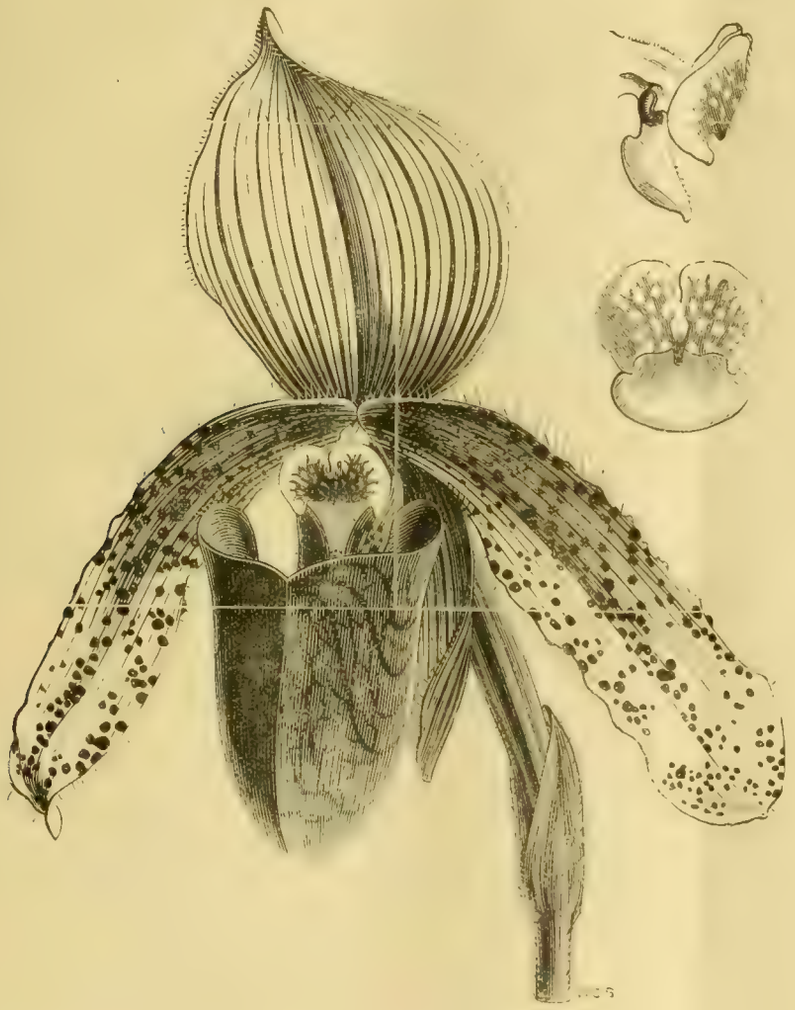


Fig. 134.—Cypripedium superbiens. (see p. 689)

CYPRIPEDIUMS THAT FLOWER AT THIS SEASON.

C. insigne, fig. 135, p. 691, is an old friend, but its special value for flowering at the dull season renders it always attractive. The species varies greatly in the amount of spotting in its upper sepal, as also in the depth of the snow-white portion at the top. C. insigne, var. Maulei, alias Chantinii, is one of the best varieties. The species has been crossed by Mr. Seden, the result being some very fine varieties, with a porcelain white upper sepal, green undulate petals streaked with purplish brown and finely spotted. Some of these were shown at the meeting of the Royal Horticultural Society on Tuesday last.

C. superbiens or *C. Veitchii* (fig 134), is another of the popular varieties allied to C. barbatum, and having finely-spotted leaves. The upper sepal is white, striped with green, the lateral petals dotted with dark brown spots, and ciliated at the edges; the lip is of a dull purplish-brown colour. The staminode, shown in the upper corner of the illustration, is downy, and traversed with green veins. It flowers in summer, and also in late autumn.

Cypripedium villosum (fig. 133).—This desirable species ranks as one of the best for exhibition purposes, on account of its distinct colour (which varies in plants), and likewise on account of the lasting qualities of its flowers. The flowers measure 5 to 6 inches across, with a fine glossy appearance over their whole surface. The colour, which is orange-red, is intermixed with green and dark purple.

Mr. Ashton, gr. to H. Tate, Esq., Allerton Beeches, Liverpool, kindly furnished us some time since with a photograph of a fine variety growing under his charge.

Of other species, or hybrids raised in gardens which flower either early or late in the winter, mention may be made of the following: C. Spicerianum, a distinct and fine species of the stemless section; C. Boxallii of the same section and in growth like C. villosum; C. cordinale, a distinctly late autumn bloomer, is a Veitchian hybrid of much beauty; C. Leeanum, a distinct-looking hybrid of C. Spicerianum and insigne Maulei, should not be forgotten. Then there are C. politum, C. purpuratum, C. Stonei, and C. Sedeni, a plant that is rarely seen without a bloom upon it.

BOOK NOTICE.

The Trees of North-Eastern America. By Charles S. Newhall. (London and New York: G. P. Putnam's Sons.)

This is an octavo volume, devoted to the description and illustration of the trees of Canada and of the North-Eastern States of the Union, east of the Mississippi. It is intended for popular rather than scientific purposes, and will be found useful to nurserymen and tree-lovers. The plan followed is to divide all trees into two divisions, according as they have simple or compound leaves. The simple-leaved forms are then arranged, as the leaves are opposite or alternate, and then according to the nature and degree of toothing of their margins. The compound-leaved trees are divided into the feather-veined and into the palmate-veined series; then, according to their position, opposite or alternate, and ultimately, according to the lobing and indentation of the margin. By this method, which is similar to that adopted in a more detailed manner by Loudon, it is, in general, easy to refer any particular tree to its appropriate genus. The recognition of species is facilitated by the descriptions given, and by the rough outlines of the foliage. The author does not confine himself to botanical details. Many readers, for instance, will be glad to know what the "Gum Tree"

really is, which is so familiar to us as the haunt of the opossum.

"Possum up a gum-tree,
Cooney in de holler,
Nigger in de cornfield,
Don't yer hear him holler."

We had often wondered what the gum-tree could be, which, thanks to the poet, has attained so wide a reputation. Poets have often a sublime disregard of accuracy of nomenclature, and prefer popular names as affording so much more exercise for the fancy and imagination. It appears that the "gum tree" climbed by the "'possum" is the tree known to botanists as Nyssa silvatica, or sometimes as the Tupelo. The opossums climb the tree in search of the fruit. Another incidenal allusion is, that to the practice of decorating churches with Holly at Christmas. "Trummying (?) of temples with floures, boughes, and garlondes, was taken of the heathen people which decked their idols and houses with such array." Early Church Councils made rules and restrictions concerning the practice: *e.g.*, in France, Christians were forbidden to "decke up their houses with lawrell, yvie, and greene boughes in the Christmas season for *Hedera est gratissima Baccho.*" Unfortunately our author, though he uses quotation marks, does not specify whence his quotations are taken. We cannot say much for the illustrations, some of which are very rough, those of the White Cedar (Chamæcyparis sphæroidea or the Arbor-vitæ, Thuia occidentalis), are quite unrecognisable. A glossary of terms and an index, add much to the value of the book, which we commend to the notice of amateurs.

PLANTS AND THEIR CULTURE.

THE STOVE.—With shorter days and little sunshine, a lower temperature should prevail, or the health of the plants will suffer, and insects will increase fast. A day warmth of 65°, and by night 60° will, for the present, be sufficiently high, but much will depend on the outside temperature. Houses which are badly heated should be covered with some kind of material at night, to do away with the need of driving the fires and over-heating the hot-water pipes, than which nothing is worse. With lower temperatures less water is required by the plants, except in the case of winter-bloomers in growth.

Gardenias are best grown where they can be specially treated, and I would recommend the planting of them in small pits or heated frames, and keeping them quite free of mealy bug, as they are more difficult to clean in pits or frames than in pots. Crotons will now claim attention, and over-large plants should be shortened back, and by doing this now, the plants will have time to make new breaks before they are re-potted. The plants should be diligently cleared of thrips and mealy bug, and after pruning them it is a good time to clean them. Damp the plants with the syringe on bright days, and keep them in the moister part of the stove, as when they are staged near the pipes they soon begin to suffer. A few of the well-coloured points may be propagated by putting a single cutting in a 60, and placing the pot in a good bottom heat.

Dracænas, Acalyphas, Aralias, and other large growers, may be cut back at this date, the stems of the first-named being used for increase of stock. Heads of foliage of these plants may be rooted by tying moss round the stems a few inches below the leaves, and keeping it wet. Pandanus Veitchii, at this date, may be increased by suckers from the base of old plants, but the plants must have been kept dry for some time. Larger kinds may be got to root; but they root slowly, and should not be kept very wet. The old stools give many suckers. By propagating these useful plants at this period, several weeks are gained, and the plants get of a nice size early in the year. The plants required as edgings to beds and stages may be secured at this date, such as Panicum, Peperomia, Tradescantia, Gymnostachyum, and Selaginella—discarding the old stock of these. *G. Wythes, Syon House, Brentford, W.*

THE ORCHID HOUSES.

THE ODONTOGLOSSUM HOUSE.—To lovers of these plants the winter season will be an anxious one in watching for the slugs and snails that devour the flower-spikes now appearing. The plan which I adopt, and which has saved many a spike, is, as soon as the spike shows itself, to place a piece of copper-wire round the pot, then dip the pot up to the base of the plant in a pail of water at a temperature of 80°, and hold it in that position for two or three minutes; should any slugs be in hiding in the pot, they will be almost sure to come out, warm water being repugnant to them. The plant should then be suspended to the roof by the wire. Other means of catching these creatures consists in laying about the staging Potatos cut in half and hollowed out; also good fresh Lettuce leaves, or small heaps of bran; and some one or other of these traps should be constantly in use, and they should be examined once a day, in the evening.

No better place can be found for Oncidium Marshallianum than that afforded by the roof of the Odontoglossum-house, the treatment of the plant being the same as that which I have advised for Odontoglossums. It is often grown too warmly, and recently-imported plants would be the better for being placed in the intermediate-house until the spring months. The temperature of the Odontoglossum-house may now be allowed to fall as low as 45° at night, giving 5° increase in the morning; and the plants may be syringed overhead as soon as the thermometer registers 48°, the walls, stages, and walks receiving a good damping at that time, and with the damping down of the walks only in the evening, nothing more will be required in that way.

The Intermediate-house.—A good number of the cooler species and varieties of Cypripediums assist to make a good display. C. Sedenii will be the better if kept in a very light position, the flowers coming very much deeper and brighter in colour. C. insigne and its varieties, also the hybrids between C. insigne and Spicerianum, of which there are many, are all useful at this season.

Odontoglossum citrosmum having now finished up its growth, a long season of rest will become necessary. Few plants stand drying up to make them flower so well as do those of this species, and no water need be afforded the plants until the pseudo-bulbs shrivel. If it be kept moist at the root during rest, no matter how good the growth may have been, the plant will most likely not flower.

Cymbidium Lowii and C. eburneum should have small doses of liquid manure afforded them; C. Lowii is a species that is very apt to lose its buds in foggy weather, but I have found that this may in some measure be avoided if the plants are stood down on the walks near to the hot-water pipes, during the time the fog lasts.

The Barkerias now in flower form a charming species, that well repay whatever trouble may be taken with them. They last in flower for at least two months at this season. The mistake made by some growers of keeping the plants dry even during the winter and early spring, when they are at rest, has been pointed out in former Calendars. If they are allowed to become dry, they lose their foliage at once, but kept moist, the foliage will not have fallen when the plants are bursting away into fresh growth in May. A temperature of from 50° to 53° at night, with a rise of 5° during the day, will suit the plants in this house, and air should be admitted carefully night and day in every department. *A. G. Catt, Parkfield Gardens, Hallow.*

THE FLOWER GARDEN.

PROTECTION.—Spring-flowering plants, which were showing a tendency to a too free growth, have been checked by recent frosts—a matter of congratulation, as growth at this season seldom does much good. Take every precaution to provide protection for any plants that are likely to suffer; also for specimen trees, shrubs, climbers on walls, &c., that are liable to injury from frost; and both root and top should be protected.

The pruning of many of the deciduous climbers on walls may be proceeded with, and continued until it is finished. Neatness in climbers is neither desirable nor attainable with all species, and white Jasmine, Wistarias, Passion-flowers, Clematis, Honeysuckles, are among those which, from their straggling habit, should be taken in hand first. Tea Roses should only have their long shoots tied in, their pruning being deferred for a time; Banksian Roses should have all their long flowering shoots laid in, the pruning taking place after they have flowered. Chimonanthus fragrans, being also a winter-flowering plant, should be pruned after the blooming period.

Bedding Plants in Frames and Cold Pits.—Give air to frames freely whenever the weather is mild, and on very fine mild days the lights may be removed altogether for a short time, keeping the plants clear of decaying foliage. As the plants soon suffer from want of light, remove the coverings of frames as often as is possible in severe weather, if only for a few hours during the time when the thermometer rises above the freezing point. If severe weather is imminent, it will be found advisable to pack up a good thickness of litter, leaves, or fern on the outside, up to the level of the woodwork. If a framework of wood, hurdles, or evergreen branches wattled together can be placed around to keep the litter, &c, in place after being stacked, it will be found of great service during the whole season. Should frost penetrate the frames, with a fine syringe damp all the plants with cold water, cover up the frames, and keep it dark for a few days with the object of preventing rapid thawing of the plants. Such kinds of bedding plants as Coleus, Iresine, and Alternanthera, should be stored in a warm-house or pit, and kept growing.

Dahlias, Cannas, &c., that had been taken up and allowed to dry in a shed, should be stored away in a cool dry shed where there is no danger of frost penetrating, and covered with fine dry soil or ashes. Gladioli taken up should be laid out singly on dry shelves, where they can be dried without removing the soil.

Lawns.—If possible, alterations and improvements should be completed before the end of the year, as the New Year brings its own work in abundance. Clear up leaves and keep the turf swept of worm-casts, rolling it on days when there is no frost. *D. C. Powell, Powderham Castle, Devon.*

FRUITS UNDER GLASS.

FIGS.—Trees which were started last month, and now have their terminal buds starting into growth, should have the mean temperature of the house raised a little by day, but the worst of the winter being before us, there must be no increase of night-warmth. The fermenting material around the pots, or in other parts of the house, should be turned over twice weekly, and replenished when its heat is getting exhausted. No fresh raw stable-dung should be used, but only what has been prepared.

Syringing may be performed once or twice daily according to the amount of fire-heat given, too much atmospheric moisture being productive of weak and flabby leaves, which will be unable to bear sunshine at a later date, and are sure to fall a prey to red-spider, at a time when it will be difficult to deal with. Although atmospheric moisture must be plentifully supplied, it is of the greatest importance that the air should be kept in motion by means of ventilation, and not be kept stagnant. A temperature at night of 50° to 55° will be sufficiently warm for the present, and that of the day may range from 60° to 70°, according to the state of the weather, but in the earlier stages of forcing, it is safer to avoid much warmth in frosty weather, or during the prevalence of easterly or northerly winds. Air should be admitted through a number of small apertures, as in hit or miss ventilators, placed in proximity to the hot-water pipes. Water will not be much required at the root, the fermenting material supplying so much moisture, that the drying of the soil goes on slowly, but when it is necessary to afford water, let it be done thoroughly. The Figs, which show always in excess of what the trees will bear, should be thinned, first taking all deformed or misplaced fruits, as well as some of the others.

Successional houses should be prepared for starting with the new year, watering the borders at intervals

several times till they have been well moistened. The borders should be restricted in size—a narrow, shallow border made of porous material, well mulched, will produce the finest Figs. The present is a good time to propagate Figs by cuttings, which should consist of short, well-ripened shoots about 9 inches in length, with a heel. Remove all the eyes below ground, and stick the cuttings in large 60's in a heavy sandy loam, and plunge the pots in a mild bottom-heat as soon as they have made a callus. Figs may be struck from eyes, but cuttings give the quickest results.



Fig. 135.—cypripedium insigne. (see p. 689.)

Strawberries.—Where ripe fruit is required by the end of the month of February or early in March, the plumpest and best ripened crowns of La Grosse Sucrée, or Vicomtesse H. de Thury, or any other approved variety, should be put on the shelves of an early started Peach-house or vinery, or on beds of warm leaves, and as near the glass as possible. The night temperature may not at starting exceed 45° to 50°, with a 5° to 10° rise by day. See that the drainage of the pots is good, and dip the leaves of the plants in a weak solution of sulphur and water, in which a little soft-soap has been dissolved, this having the effect of killing the eggs of red-spider and green-fly. When the plants are started on beds of leaves, scarcely any water at the root will be necessary for a time; but the reverse will be the case on dry shelves, and where the syringing of the plants twice daily becomes a necessity. As soon as the flower-spikes top the foliage, all plants on bottom-heat should be taken out of the bed, and placed on the surface of the bed for a few days, before placing them on shelves or in the Strawberr-house. No check from cold should take place at this stage, or imperfect flowers will appear; and too much heat at starting, especially at night, will give the same result. I have found that La Grosse Sucrée will stand with impunity a higher temperature than Vicomtesse, and that it makes fewer leaves, and throws its much stronger flower-stalk higher. *W. Crump, Madresfield Court, Malvern.*

The Kitchen Garden.

Seasonable Work.—Although at this season operations in the kitchen garden are neither plentiful nor pressing, much may still be found that requires doing. Trenching and digging vacant plots as they become vacant should take the first place; when doing these jobs, it is well to decide as far as may be, with what crops such plots shall be planted next year. In the matter of manuring, it is often a wasteful blunder to manure ground that is already full of the necessary food for certain crops, whilst ground for Seakale, Beans, Peas, Spinach, Turnips, Cauliflowers, and Cabbage, requires considerable quantities dug into it. Many old gardens would be greatly benefited by heavy dressings of fresh lime and loam, [in place of the usual manure. Potatos, Beet, Parsnips, grow finest on land that is not freshly manured, but which has had manure the previous year. Many plants will require protection from frost, notably Globe Artichokes, Celery, and Parsley by putting frames over the beds. Endive out-of-doors may be tied up, and dry leaves packed around it; and Carrots should be covered in severe weather, and generally, where crops are left in the ground till wanted for use, it is best to cover the land with litter. Keep a good store of litter under cover, in readiness for emergencies.

Hot-beds.—Leaves and dung should be got together in readiness for the making of hot-beds for young Carrots and Potatos, the leaves preponderating over the stable litter. Throw all together into a conical heap, and turn the same twice or thrice before making the beds up. Early Nantes or Short Horn Carrots are good for frame use, while the old Ash-leaf is one of the best flavoured and prolific as a frame Potato. French Beans to be planted in the beginning of the year in beds, or to be grown on in pots, may now be sown in small pots, placing three seed in each pot, standing them in gentle warmth of, say, 50°, and supplying no water until germination has taken place. No better varieties are to be found than Ne Plus Ultra or Osborn's Forcing; the latter, although not so free in podding and shape, is of better quality than the other, and of a deeper green colour when cooked. French Beans, which have filled their pots with roots, may be liberally supplied with weak manure-water, keeping the temperature of the pit at about 60° by night, more or less according to the temperature out-of-doors, but it should not fall below 55°. *H. Markham, Mereworth Castle, Maidstone.*

Orchids at Home.—M. Auguste Linden, in a recent issue of *Le Journal des Orchidées*, publishes an account of his botanical researches in the Malay Islands. He says, "When I had finished exploring the Archipelago, my chief object was to get as near to the islands as the coral reefs would permit, and I sought, by the aid of my binocular, to discover what each one contained, especially when such island was too small for me to attempt to land; which, as I have said, is always a difficult matter. It was in this way that I met with Vanda Batemanni. It was growing almost as a water-plant, at high tide, on the rocks which often project some distance into the sea. On the little island where I saw it for the first time it was in considerable quantity, the specimens being fine and sturdy. The most beautiful plants were those which grew amongst shrubs, and on isolated rocks. I saw many over 6 feet 6 inches long, and bearing on each side from four to eight faded flower-branches. Besides Vandas, I saw a few other Orchids, but none of them bore flowers by which I could determine the species. Of one of them, however, Bulbophyllum grandiflorum, I have a lively remembrance. It quite covered a small shrub with its flowers, and at a little distance the effect was most remarkable. Vanda Lindeni, which I discovered on one of the islands in the neighbourhood, grows quite differently. It is always met with on dead branches of large trees, on the outskirts of small forests, or on fallen trees by the borders of rivers or brooks, but always at a certain distance from the ground. This remarkable species grows in clumps of from 50 to 200 branches, or even more. It is very difficult to obtain, as the red ants, one of the plagues of these beautiful regions, always choose these tufts in which to make their nest. The natives have a great dread of their bites, which raise large blisters often lasting for several days. Therefore there is some difficulty in climbing the trees to pull down the plants. To gather them, I was obliged to resort to another plan. I lashed several Bamboos together, and fixed a hook to the end of the long rod thus made. With this I succeeded in pulling down several pieces of the plants. When once the plants were brought to the ground, we dragged them hastily to the water, where they were washed, to free them from the terrible insects with which they were often covered. Vanda Lindeni is an extremely abundant bloomer. I saw clumps on which there were certainly more than a thousand racemes, most of them comprising from twenty to twenty-five flowers. Unfortunately the specimens of this marvellous Orchid, which I succeeded in bringing to Europe alive, gave but a poor idea of the plant when seen in its natural state, the inferiority being in the growth of the specimens, as well as in their blooms."

EDITORIAL NOTICES.

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

NEWSPAPERS. — *Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

WEDNESDAY, DEC. 17 — Floral *Fête* and Bazaar on behalf of the Holmes Memorial Fund, at the Royal Aquarium, Westminster.

SALES.

MONDAY, DEC. 15 — Lilies, from Japan, Dutch Bulbs, &c., at Stevens' Rooms.

TUESDAY, DEC. 16 — Lilium auratum, &c., at Protheroe & Morris' Rooms.
Clearance of Seedling and New Roses, &c., at The Pedigree Rose Nursery, Shepperton, by Protheroe & Morris.

WEDNESDAY, DEC. 17 — Roses, Fruit Trees, Border Plants, Dutch Bulbs, &c., at Stevens' Rooms.
Bulbs and Plants at Protheroe & Morris' Rooms.
Clearance of Lilies, Iris, and other Plants, Glass Erections, &c., at Twickenham, by Protheroe & Morris (two days).

THURSDAY, DEC. 18 — Dutch Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, DEC. 19 — Imported and Established Orchids, at Protheroe & Morris' Rooms.

SATURDAY, DEC. 20 — Roses, Fruit Trees, Border Plants, Dutch Bulbs, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—40°.2.

*** Secretaries of Societies, and others, are earnestly requested to forward immediately, the dates of Show fixtures and Meetings of horticultural societies of any kind for 1891, for insertion in the Almanac, to be published in our issue for January 3.

Commercial Botany.

COMMERCE and botany hitherto have not got on well together Commercial men have not, as a rule, troubled themselves about the botany of the commodities in which they deal. And so it happens that the true source and origin of many an important vegetable product is still unknown. Popular nomenclature, a bane of knowledge, and an obstacle to progress, runs riot in this department. How many different sorts of Rose-wood are there, for instance? We doubt if even Mr. JACKSON * could enumerate them; and we feel sure that he would tell us that not one of them has any direct connection with the Rose. So we are sure Baron VON MUELLER would repudiate the propriety of the term Gum-tree, as applied to a Eucalyptus, and it is not any more truly applicable to a Nyssa, a Myrtle, or an Escallonia. To call a poisonous Euphorbia a Gum Thistle, is not only misleading, it is positively dangerous, for Thistles proper, whatever they are, are not poisonous. But it is not only the frequent inappropriateness of the name applied to commercial products that is matter for regret. Still more lamentable is the lack of knowledge on the subject. So general is this, even among Mincing Lane merchants, that the term botany is quite out of place in this connection. Of late years, however, the force of facts—of such facts as appeal to men of commerce—has shown the necessity, even from a financial point of view, of botanical knowledge as exact as it is possible to have it. It is quite possible to grow the wrong plant, and to waste years of valuable time and pounds of sterling money in so doing. This has happened before now in the case of the Cinchona, where relatively worthless trees have been cultivated for lack of adequate knowledge.

Impressed with the loss to science, and the injury to commerce, which accrues from the imperfection of our knowledge, and from the general apathy of mercantile men and cultivators, we turned to Mr. JACKSON's book—*Commercial Botany*—with some eagerness. We own to experiencing some feeling of disappointment at finding the botany occupying a very subordinate place in it. Let us illustrate our meaning by referring to the first chapter devoted to indiarubber or caoutchouc. In it we have reference made to the several kinds of "rubber" known in the market, the names of the plants yielding them, the attempts that have been made to cultivate them in our various dependencies, and a few statistics showing the enormous increase in the consumption of the article. All this we are very glad to have in a short compass, but where is the botany? There is not much botany in the mere enumeration of the names of the plants mentioned. Nothing is said that we have lighted on as to the physiological history of caoutchouc as a vegetable product, nor on the anatomy of the tissues in which it is formed. No descriptions are given of the plants known to yield the product, and the name of the natural orders to which they belong is not always mentioned. These are matters not merely of scientific interest—they are of great importance to cultivators and merchants, and will be increasingly so in the future. It is true that had Mr. JACKSON treated his subject on the same plan as PEREIRA or DANIEL HANBURY did, he would have required much more than a modest volume of 160 pages for the purpose. Our objection, however—if objection it be—is solely to the title Mr. JACKSON has chosen for his book.

Adverting now to what it actually does contain, we must congratulate the author on the very large amount of information he has been enabled to compress into so small a compass. Of course, Mr. JACKSON's long connection with the Museums of Economic Botany at Kew, has given him advantages, such as no other man living can have had. We should not have been surprised had he been overwhelmed with the mass of materials before him, and to have found him, as it were, buried under its weight. It is not so, however. By means of an arbitrary but clearly defined arrangement, he has contrived to lay before the reader, without unnecessary detail, a brief account of all the principal products which, if not first made known, have first become prominent during the present century. There is an impression still too prevalent, that botany, however interesting it may be to students, however innocent as a pastime to those in search of recreation, is nevertheless of little practical value. A glance at Mr. JACKSON's pages ought to suffice to dispel such an illusion. Turning over its pages, botanists and gardeners might feel proud that they have been enabled to do so much, were they not likely to be humbled by the thought of how much more remains to be done. In these pages the splendid services to humanity rendered by the Indian botanists, ROXBURGH, WALLICH, WIGHT, FALCONER, ROYLE, and others in times gone by, not to mention many still happily left to us, have often been adverted to. Nor have we overlooked the signal benefits conferred by Kew, not only from the scientific point of view of accurate determination, but from the cultural side, and from the predominant part it has played in the distribution of plants of economic value throughout the various colonies.

The labours of Sir WILLIAM HOOKER in this direction, as well as in the establishment of the Kew museums, should always be held in reverence by those interested in economic botany. The work was energetically carried on by his successor, Sir JOSEPH, when he held the reins of office, while the *Kew Bulletin* of the present day shows that this botany is being pushed from the practical side more energetically than ever. If sugar fail to be remunerative, or coffee languish from disease, Kew is ready with a substitute, and by precept and practical help in the introduction of new and likely substitutes, stimulates the flagging industries of hard-pressed colonies, diverts them into new channels, and lays the foundations of future prosperity. The pages of the volume before us afford incidental and indirect testimony of the value of the work done at Kew—all the more likely to escape attention because it is indirect. The public has come to look on "Kew Gardens" as a mere pleasure-ground. It is well that the truth should be brought home to it that Kew is a great scientific institution and a great promoter of the applications of scientific knowledge, and that its more showy aspects are merely subsidiary to these its primary objects. Any of the parks, a nursery garden, or a florist's shop even, could, in their several degrees, fulfil some of the functions of Kew; but the particular objects we have alluded to, and those which have placed Kew at the head of all similar institutions in the world, cannot be carried out elsewhere with anything like the same facility and completeness. As the head-quarters of economic botany, this mention of Kew was inevitable while speaking of Mr. JACKSON's work. His *Commercial Botany* cannot be considered, and was not intended to be, a text-book of the subject; but as an epitome, it is remarkably full, and the information is, as might have been expected, up to date. On testing the work by means of the table of contents and of the index, we have very rarely found it at fault. The omission of Coquito-nuts, the seeds of Jubea spectabilis, which are much used in confectionery, may be noted. A list of the plants alluded to, grouped under their natural orders, will form a very desirable addition to that new edition which we hope soon to have the pleasure of announcing.

* *Commercial Botany of the Nineteenth Century.* By J. R. Jackson, Curator of the Museums, Royal Gardens, Kew. (Cassell & Co.)

YUCCA GLORIOSA.—Anything more stately can hardly be imagined than this old inhabitant of our gardens. Among many others, of which a full descriptive list was published in our columns in 1870, this still remains, for general purposes, the best. Our illustration (fig. 136), is taken from a photograph, kindly sent us by Mr. HUGHES, of a fine specimen growing in Birkenhead Park, under the care of Mr. PARKINSON. No plants better withstand the injurious effect of smoke and the vitiated air of towns than does this Yucca, if it be planted in well-drained loamy soil. Our illustration only affords another example of the excellence of the Yucca as a town plant.

GARDENERS' ORPHAN FUND.—We would call the attention of gardeners and others resident in Chertsey and neighbourhood to an evening concert



FIG. 136.—YUCCA GLORIOSA IN BIRKENHEAD PARK: A FINE TOWN PLANT. (SEE P. 692.)

in aid of the above, which will be held at the Constitutional Hall in that town, under the management of a busy local Honorary Secretary to the Fund, Mr. A. J. BROWN, East Street, Chertsey, and to whom all communications offering assistance in decorating the hall and disposing of tickets should be addressed.

—— At a special general meeting, held at the Cannon Street Hotel, London, on Tuesday evening last, Mr. MARSHALL in the chair, some important alterations in the rules were made. Mr. WYNNE moved, and Mr. J. WILLS seconded, "That in the opinion of this meeting it is desirable, in the best interests of the Gardeners' Orphan Fund, that the date of commencement of the financial year should be altered from July 1 to January 1, and that the annual general meeting should be held in February instead of July." And on the motion of Mr. WRIGHT, seconded by Mr. ROUPELL, the necessary alterations of dates in rules 3, 9, and 10, were then carried unanimously. As the amount required for the Deal Memorial (£554 13s.) to enable the committee to place on the list of beneficiaries the seven unsuccessful candidates at the last election, has been raised, it was carried, on the motion of Mr. R. DEAN, seconded by Mr. WALKER, that the children A. H. Budd, W. Jones, S. A. Offer, A. H. Rowland, M. Grieve, E. E. Kinch, and F. T. Pragnell, be placed on the fund as from January 1 next. The thanks of the meeting were then accorded to the subscribers to the George Deal Memorial Fund, and especially to Messrs. N. N. SHERWOOD and H. J. VEITCH, through whose generous aid such a fitting memorial was raised.

LINNEAN SOCIETY, DECEMBER 4.—At this meeting Professor Stewart, President, took the chair, and Mr. John Watson was admitted a Fellow of the Society, and the following gentlemen were elected:—Messrs. A. Barclay, W. Brown, W. A. Clarke, W. Gill, C. McRae, W. H. Miskin, R. Bentley, H. Williams, H. G. Plummer, J. Streatfield. Mr. F. J. George exhibited an autumnal-flowering form of Mercurialis perennis with stems 4 feet in length, which he had found at Preston, Lancashire. Mr. R. A. Rolfe exhibited and made some remarks on a coloured drawing of Cycnoches Rossianum, showing both male and female inflorescences on the same pseudobulb. Mr. J. Christy exhibited and made remarks on some Coca leaves which had been forwarded from an East Indian plantation, and which were found to be superior to any received from South America. On behalf of Mr. H. N. Ridley, of the Botanic Gardens at Singapore, Mr. B. D. Jackson read a paper on "Orchids, genus Bromheadia," on which some critical remarks were offered by Mr. R. A. Rolfe. The next paper was one by Mr. J. H. Lace and Mr. W. B. Hemsley on "The vegetation of British Beluchistan," illustrated by a route-map showing the district in which Mr. Lace had been collecting. Seven hundred species were catalogued, amongst which were eleven new to science. The paper was ably criticised by Mr. C. B. Clarke, and Mr. J. G. Baker made some interesting observations on the peculiar prickly character of the vegetation which predominates in the hot and dry district explored.—At the evening meeting to be held on December 18, 1890, at 8 p.m., the following papers will be read, "On the structure and development of the Cystocarps in Catenella opuntia," by R. J. Harvey Gibson, F.L.S., and "The effect of Exposure on the relative length and breadth of Leaves," by G. F. Scott Elliot, F.L.S.

THE NATIONAL CHRYSANTHEMUM SOCIETY, FLORAL COMMITTEE.—Mr. E. SANDERSON in the chair. Two First Class Certificates of Merit were awarded to Mr. R. OWEN, Castle Hill Nursery, Maidenhead, for new varieties, mainly English seedlings. Kioto, a bright yellow incurved Japanese, with broad petals, very promising; and for single Japanese Rudbeckia, so named from the similarity to a Rudbeckia flower, and having broad bright magenta florets; a distinct variety. A Commendation was awarded to J. P. KENDALL, an incurved Japanese, of very fine and promising character; colour, a silvery amaranth, with a pale, silvery-buff reverse. Mr. JOHN APLIN, gr., Hasfield Court, Gloucester, sent three excellent blooms of Mrs. Alpheus Hardy; and Mrs. E. W. CLARK, a large and striking bright rosy claret-coloured variety, to which a First Class Certificate of Merit was awarded at the last meeting.

STOCK-TAKING: NOVEMBER.—With the exception of the returns for the Parcel post, there is "decrease" written against every item in the return of imports for the month of November: the total decrease foots up £4,184,818. For the eleven months the decrease in the imports is put at £8,144,987. All this looks very bad at first sight, but the comparison is not a fair one, the circumstances being quite exceptional. There was a working day less in this year's November than in last year's; and at this time last year the strike of the dockers had ended, and the wanting imports were being rushed in. Again, the derangement caused by the new tariff of the United States was at its height during the past month, and there certainly has been a partial panic in the money market, and a consequent hesitancy in the speculative departments of the import trade. The alarmists are, therefore, out of court, for the imports of the time are in excess of those for the month in 1888. The following is our usual excerpt from the summary of the imports from foreign countries and British possessions for last month:—

	1889.	1890.	Difference.
	£.	£.	£.
Total value of imports	41,337,091	37,152,273	—4,184,818
§II.—(A.) Articles of food and drink—duty free	12,566,244	11,224,898	—1,341,346
(B.) — do., dutiable	3,108,853	2,786,491	—322,362
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	10,869,409	9,495,050	—1,374,359
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,853,895	3,536,514	—317,381
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,386,766	1,332,415	—54,351
(B.)—Parcel Post ...	33,682	42,126	+8,444

On the export side of the account there is a decrease in the total for the month of £1,244,485—in goods, the product of British and Irish industry; for the eleven months there are but two deficits recorded. The increase is exactly £14,181,003, the increase in the exports of foreign goods being £88,297. The returns of the imports of fruits and vegetables are as follows:—

	1889.	1890.	Difference
§ II. Fruit:—			
Apples, raw ... ... bush.	688,068	600,648	—87,420
Unenumerated, raw ... ,,	134,428	344,833	+218,405
Onions ... ... ,,	365,170	498,849	+133,679
Potatos ... ... cwt	21,350	51,779	+30,429
Vegetables, raw, unenumerated ... ... Value	£48,079	£49,787	+£1,678

As usual, comment is quite unnecessary.

RE BRIGHTON AND HOVE CHRYSANTHEMUM SOCIETY.—Mr. MARK LONGHURST, the Secretary, informs us that the results of the recent show were very satisfactory, the takings at the doors amounting to £324. The numbers who paid for admission were 9,494.

EUCALYPTUS GLOBULUS.—Mr. P. S. BURT favours us with a photograph of a tree of this species, one of many growing in the neighbourhood of Ventnor, where we lately had the opportunity of seeing them. The particular tree is about 40 feet in height. In a neighbouring garden is a tree with ripe fruit upon it. The trees will live on the sea coast of the south of England throughout all but the "grand winters," and possibly they will, when of the age of the specimen in question, resist these also.

"CATALOGUE OF BOTANICAL WORKS."—Messrs. DULAU & Co, 37, Soho Square, have sent us their Catalogue, which is an interesting one. Among the items, we note that Messrs. DULAU offer series of plates of plants belonging to particular natural orders, so that if anyone is, let us say, interested specially in Orchids, he can obtain an assortment of plates of plants of that family, and so with other groups.

RINGING TREES.—HARTIG gives the following account of his experiments in ringing the bark from trees. Trees from which a ring of bark has been taken are affected differently, according to the kind of tree, and the thickness of the trunks. Some die rapidly, while others remain alive a long time. The author has already expressed his opinion that most likely root-structure has considerable influence on plants submitted to this operation, and any prognostications as to the probable effects must be guided by the fusions or inosculations which may have taken place between the roots of the tree under treatment and those of the untouched trees around. If the roots, after the cessation of nourishment, and of growth, and the formation of new rootlets, soon lose the faculty of absorbing water and mineral substances (Pine, Spruce Fir, &c.) from the soil, the death of the plant must be the direct consequence of the operation, unless there are underground unions with the roots of neighbouring trees by which life is sustained until the dead part of the trunk becomes impermeable to water. But if the roots do not entirely lose the power of absorbing water even in their oldest parts—as in the case of Maples, Lime trees, &c.—the trees continue to thrive without underground union so long as the denuded trunk is in a fit state to allow of the passage of water. The following interesting example will therefore be easily understood. A Spruce Fir tree a hundred years old, divided at a height of about twenty-three feet from the ground into two almost equal trunks. In 1871 a complete ring of bark was removed from one of these trunks. The tree was cut down in the winter of 1888—9; the two crowns were quite green, those of the ring side being rather less abundantly provided with leaves. The roots of the injured side had ceased to grow, but in spite of that, the ringed branch continued to grow for seventeen years, nourished by the roots of the uninjured side. "*Annales Agronomiques*," Nov. 25, 1890, p. 526.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are glad to learn that a further purchase of £300 Consols has been made, the total amount now funded being £25,000, from which an annual income of £687 10s. is realised, and is a guarantee that all pensions can be paid. The annual general meeting will be held on Thursday, January 15, at 3 o'clock, when BARON SCHRODER will preside; at the annual friendly dinner to be held the same evening, the chair will be taken by N. N. SHERWOOD, Esq.

COTONEASTER FRIGIDA. — Messrs. WILLIAM FELL & Co., nurserymen, Hexham, have sent us a very finely-berried branch of this striking and ornamental tree. The specimen had been procured from Cragside, Rothbury, the seat of Lord Armstrong, where it is growing luxuriantly, planted in clumps, interspersed with the other large and varied collection of ornamental trees; the bright scarlet berries which hang on so long—long after the Mountain Ash berries fall—have a brilliant effect when seen against the sombre hues of the fine Coniferæ, Rhododendrons, and the deciduous trees abounding at Cragside. Messrs. FELL & Co. rightly remark, that Cotoneaster frigida deserves to be far more extensively used in our shrubberies than it has been.

"Kew Bulletin."—As an appendix to the *Kew Bulletin* for 1890, an index to the Kew Reports for 1862—1882 has been published, which will be of great service to those interested in economic botany. The *Bulletin*, it may be added, is intended to furnish in a detailed and timely form the information formerly included in the Annual Reports. Serviceable as the *Bulletin* is, it does not, however, take the place which the Report used to do, and many interested in the progress of botany and scientific horticulture as illustrated in the gardens, herbarium, library, and museum, would gladly welcome an annual report as well as a monthly bulletin.

The Shirley Hibberd Memorial.—The meeting convened by the Royal Horticultural Society to consider the propriety of establishing a permanent memorial of the late Shirley Hibberd, was held on Tuesday last in the Lindley Library. The President, Sir Trevor Lawrence, Bt., introduced the business with a warm eulogium on the deceased horticulturist, pointing out the value of his services to horticulture and to the Society, and calling on Dr. Masters to propose the first resolution, which ran as follows:—"That, in the opinion of this meeting, it is desirable to establish a Memorial commemorative of the disinterested labours of the late Shirley Hibberd, and as affording some expression of our gratitude to him, and our respect for his memory." This was seconded by the Rev. H. H. D'Ombrain. Both speakers alluded to the multifarious and disinterested labours of Mr. Hibberd, and Dr. Masters mentioned the numerous suggestions that had been brought under his notice, as to the form the memorial should take, as mentioned in our last issue (p. 661). Eventually a committee was appointed, consisting of the Rev. W. Wilks, Mr. George Paul, Mr. J. Douglas, representing the Council of the Royal Horticultural Society; Dr. Maxwell Masters (Chairman), Mr. Richard Dean, Mr. Collingridge, and Mr. Marshall, representing the Fellows and subscribers. The meeting, considering the wintry weather, was well attended, the library being well-nigh filled. The committee already named, will be glad to receive and consider any suggestions that may be made to them, and subscriptions may be paid to any member of the committee, or to Dr. Masters, at the Royal Horticultural Society, 117, Victoria Street, S.W. A considerable amount was subscribed in the room.

Camphor in Florida.—In connection with the subject of the scarcity and consequent high price of Chinese and Japanese camphor in the English market, a paper was recently read by Professor Maisch at the Philadelphia College of Pharmacy on the cultivation of the Camphor tree in Florida, and the probability of successfully establishing a camphor industry there. It was stated that the Camphor tree will grow in almost any kind of Florida soil and temperature. The trees attain a height of 10 feet, and a trunk of 4 inches in diameter, at the age of four years, while one tree 10 years old measured 35 feet high, and had a trunk 1 foot in diameter. From some branches weighing 13 lb. a teacupful of camphor was distilled, and it is estimated that in ten years there will be more Camphor trees than Orange trees growing in Florida, and that the industry will be more remunerative than the sugar production. It is stated that the current price for Camphor tree yearlings is from 25 to 50 cents. The first cutting of the trees for distillation should be made at the age of from four to five years, and this should be done by pruning from the ground to the height at which the head of the tree is to be retained; from that time the pruning should be conducted with the view of developing the growth of the head, and with this treatment material would be furnished for distillation each year, and in twelve or fifteen years the trunk will be of sufficient size to furnish timber, and a return secured by the sale of the valuable camphor wood. By planting the trees 15 feet apart, the stumps may be allowed to produce shoots until young trees have been raised and are sufficiently advanced to take the place of the old ones, when the stumps may be removed and submitted to distillation. From these notes it will be seen that there is a good prospect of Florida coming to the fore in the supply of camphor to meet the increasing demand for the manufacture, it is said, of smokeless powder. The camphor that has already been made in Florida is reported to be of very good quality.

Biographical Index of British and Irish Botanists, by James Britten, F.L.S., and G. S. Boulger, F.L.S.—From the December number of the *Journal of Botany* we extract the following:—

"Switzer, Stephen (1665 or 1682—1745): b. Hyde, near Winchester, circ. 1665, or East Stretton, Mitcheldever, Feb., 1682; d. 1745. Gardener under London and Wise at Blenheim, 1706; with Lord Orrery, 1724—31. Had gardens on Millbank and near Vauxhall, and a shop in Westminster Hall. Visited France. 'Ichnographia,' 1718. 'Cythisus of the Ancients,' 1731. Pritz. 310; Cott. Gard., vi., 93; xiii., 53; Felton, 45; Donaldson, Agric. Biog., 44.

"Teesdale, Robert: d. Turnham Green, Middlesex, Dec. 25, 1804. F.L.S. 1788. Gardener to Earl of Carlisle, at Castle Howard. British botanist. Friend of Smith. Discovered Carex tomentosa, 1799. 'Plantæ Eboracenses,' Linn. Trans. ii., 103. Phil. Trans., 1792; Bot. Guide, 663; Trans. Linn. Soc. xi., 283; Contrib. to E. Bot., 202, 2046, 2517, &c.; R. S. C., v., 927. *Teesdalia*, Br.

"Telfair, Charles (1777?—1833): b. Belfast, 1777 (?); d. Port Louis, Mauritius, 1833; bur. Cemetery, Port Louis. Surgeon. Founded Bot. Gardens, Mauritius and Réunion. Correspondent of Sir W. J. Hooker, R.S.C., v., 929. 'Notice Historique,' by J. Desjardins, 1836. 'Life,' by Bojer. Bot. Misc., ii., 123; Journ. Bot., 1834, 150. Plants at Kew. Oil portr. at Freemason's Lodge, Port Louis. *Telfairia*, Hook

Testimonials.—It may be hoped that the precedent established by the Royal Horticultural Society on Tuesday last may be followed in future when occasion arises. The number of these testimonials and the demands on the resources of the horticulturists, are becoming objectionable. It may be hoped, rather than expected, perhaps, that in future no memorial of a public nature connected with horticulture generally will be started without the initiative of the Royal Horticultural Society. Subscribers would then have a guarantee that there were substantial grounds for the memorial beyond that of private good feeling. Such action would of course not affect private efforts of the kind, but we should be able to discriminate between what are public and what merely personal memorials.

Presentation to a Young Gardener.—A presentation of a handsome watch, with gold chain, was presented by gentlemen of Bristol and the neighbourhood to Mr. S. H. Poole (son of Mr. Poole, head gardener to Lady Cave, Cleve Hill), on the occasion of his leaving Cleve Hill for Linton Park, Maidstone, as a token of high esteem and respect.

Jamaica.—The *Bulletin* of the Botanical Department for August contains a short article on the cultivation of the Onion in that island, and the commencement of a synopsis of the Ferns of the island, from the competent hand of Mr. Jenman, the superintendent of the Botanic Gardens, Demerara.

New Publications.—Dr. Penzig, *Pflanzenteratologie*.—Firminger's *Manual of Gardening for Upper India*, 4th Edition.—*Handbuch der Pflanzengeographie*, von Dr. Oscar Drude.—*Recherches, &c., sur quelques Campanules*, par M. H. Feer.—*The Flora of Warwickshire*, by J. E. Bagnall.—*Commercial Botany of the Nineteenth Century*, by J. R. Jackson, A. L. S. (London: Cassell & Co.)—*The Horticultural Directory and Year-Book*, from *Journal of Horticulture* Office.

GARDENING AT LONGLEAT.

Because Mr. Pratt's name has not appeared as formerly in the list of prize-winners of the big fruit shows during the last two years, it must not be inferred that there is any falling off in the size, quality, and general good finish of the produce grown in the famous vineries and other fruit-houses in the Marquis of Bute's gardens at Longleat.

Recently, in company with two other gardeners, I had the pleasure of not only looking through the extensive and capitally-kept gardens and grounds, but was also privileged to see several of the grand rooms in Longleat House, with their high-panelled and elaborately-painted ceilings, and the Art treasures, to which the present Marquis and Marchioness have made numerous additions. The view from the windows of the mansion of flower-garden, pleasure-grounds, and the park, with its deer, was very beautiful, especially as at the time the Bracken was putting on its warm tints of orange and yellow.

The flower-garden is a geometrical one, has beds which are edged with Box, standing about 1 foot high, and half as broad, cut flat on top and sides. The good, but old-fashioned Indian yellow Pelargonium, and the purple and crimson King Verbenas, are still those that are most largely employed for bedding, and a fine effect is obtained by their use. These and parterres of carpet-beds, and large patches of Stachys lanata close by, look well when seen from the conservatory. To such an extent is bedding-out indulged in here, that 20,000 Pelargonium cuttings have to be struck each year, and other plants in proportion. In one of the borders by the "big" vinery, I noticed a fine lot of dwarf, bushy plants of Wallflowers, embracing all Sutton's excellent strains of this plant. These, with other spring-flowering plants, are transplanted to the beds as soon as frost has killed the summer-bedders, the soil being pressed about the plants in planting, and watered to settle the soil.

The conservatory is a short distance from the house, and forms the back of the inner or square flower garden. It is a high antiquated building, with a ceiled roof and back wall, and a front consisting of large sash windows and masonry piers between them. Amongst other plants, there were several fine specimen Camellias, of the old double red, double white, and Donckelaari varieties. These plants are grown in boxes of slate, about 2½ feet in depth and width. The plants measure 15 feet in diameter. The numerous flower-buds, and the dark green leaves, go to show that the liberal manurial top-dressings afforded the trees during growth have been well applied.

The plant-stoves—hip-roofed structures, with a walled-in bed filled with tan for plunging the plants in, like the fruit and other houses—are located in the kitchen gardens, which are nearly one mile distant from the mansion. Among the plants found in these houses were a fine Eucharis amazonica, a fine lot having large dark green thick leaves, indicative of robust health, and strong heads of flowers. These plants receive plenty of tepid liquid manure whilst growing and flowering, and the pots are kept plunged in warm leaves at those times, the warmth of the house being 65° to 70° at night, and 10° higher by day. The Eucharis are rested a few weeks after they have ceased to flower. One plant each of Allamanda Hendersoni and Bougainvillea glabra were finely in bloom, and almost covered the roof of one of the houses. Large numbers of Crotons, Dracænas, Poinsettias, Palms, Maidenhair Ferns, and other useful decorative plants are grown.

Two large pits in a very sunny situation are devoted to the growing of Marie Louise Violets. These plants are grown in the open, and are transplanted to the pits at about 1 foot apart. The bed being brought very close to the glass, the sashes good, and the situation high and dry, damp—the great enemy of Violets—does not affect them at all, other precautions being well attended. Grapes at Longleat have been better this year than ever, and

hundreds of large handsome bunches, with fine and beautifully coloured berries were hanging on the Vines in the Muscat-house on October 21. These were the finest Muscats I ever remember to have seen. The same top-dressing is given these Vines as that afforded the Eucharis, and whilst the berries are swelling, this top-dressing is liberally supplemented with liquid manure and lime-water every fortnight, and those who would like to excel in the culture of this best of all Grapes would do well to make a free but judicious use in the application of lime to their Vine borders. The kitchen garden and hardy fruit department, and the general good keep of the place, also bear ample evidence of their being presided over by a good all-round practitioner. *H. W. W.*

ABNORMAL GROWTH OF ADIANTUM.

From Messrs. Birkenhead, of Sale, I have received a frond of Adiantum capillus veneris var. grande, in which the sporangia are replaced by clusters of bulbils, which develop small fronds *in situ*. As the cases are rare in which bulbils occupy the position of the sori, the records being confined, I think, to Lastrea prolifera, an exotic Fern, and two or three of the plumose forms of our native Athyrium filix fœmina, I think this instance is worthy of note. As will be seen in fig. 137, a magnified segment of one of the pinnules, shows the young plants protruding from beneath the indusium, root-hairs are developed profusely from pear-shaped excrescences, resembling exactly those produced upon A. f. f. Clarissima, which, however, develop prothalli aposporously from their tops instead of fronds, as in this case. Some years ago, Mr. Greenwood Pim, of Dublin, sent me a frond of A. c. v. Daphnites presenting the same bulbiferous character; the roothairs, however, were not so much developed. That plant also was only partially affected, one frond only, I believe, producing bulbils. Messrs. Birkenhead, however, inform me that two or three plants of the grande variety in their possession are proliferous throughout. It remains to be seen if plants can be raised; in the case of Daphnites, I failed to do so, and the plumose Athyria cited seems to develop an axis of growth with difficulty, though the first fronds grow freely enough. *Charles T. Druery.*

THE CATALPA.

The genus Catalpa is eastern American and eastern Asiatic in the distribution of its species. Two of these occur in North America, one in the West Indies, one in Japan, and one in the northern regions of China. They are all trees with ample, generally opposite, simple leaves, large terminal panicles of showy flowers, and long, slender, nearly cylindrical, capsular pods. The flowers, which appear in all the extra-tropical species in early summer, are characterised by the deeply two-lipped calyx, the irregularly two-lipped, bell-shaped corolla, which is white, and conspicuously marked with purple and yellow in the throat, and by two, or rarely four, fertile, and one to three sterile, rudimentary stamens. The capsule is divided into two cells by a partition which is at right angles to its valves. The seeds are numerous, and densely packed in the cells of the pod; they are furnished on each end with long, papery wings, cut at the extremity into delicate white fringe.

The familiar species, and the type of the genus as it is now constituted, is Catalpa bignonoides, the Catalpa tree, or Indian Bean (fig. 138). It is a low, wide-branched tree, with a short, stout trunk covered with thin, pale, furrowed bark. The wood, like that of the other species, is light brown, and contains numerous large open ducts, which mark the layers of growth. The wood of all the species is remarkable for the thin sap-wood, which consists of three or four layers of annual growth only. The leaves, which emit a disagreeable odour when crushed, are cordate at the base, somewhat acuminate, and are occasionally provided with a pair of salient lateral teeth. They are light yellow-green in colour, and do not unfold until nearly all other trees are covered with foliage. The flowers open at the north late in June, or during the early days of July; they are produced in very large, compact panicles, and are about an inch or an inch and a half long. They are peculiar in their campanulate corolla, with an oblique limb and entire lower lobe. The inner surface is thickly covered with purple spots, and is streaked with yellow.

This tree has much to recommend it as an ornament for the garden. It is hardy; it grows rapidly; it is not very particular about soil, and insects do not prey upon its foliage. The large, brilliant leaves, have an almost tropical appearance, and the flowers, which appear late in the season when flowers are particularly valuable, are produced in the greatest profusion. There are few trees, certainly, of temperate regions which present a more remarkable floral display than a large Catalpa tree in full bloom. These qualities have made the Catalpa one of the most popular trees in all the temperate regions of the world; indeed, it has been cultivated so long, and has now become so completely established in many parts of the southern States, that it is not easy to determine exactly where it grew before man carried the seeds from one part of the country to another.

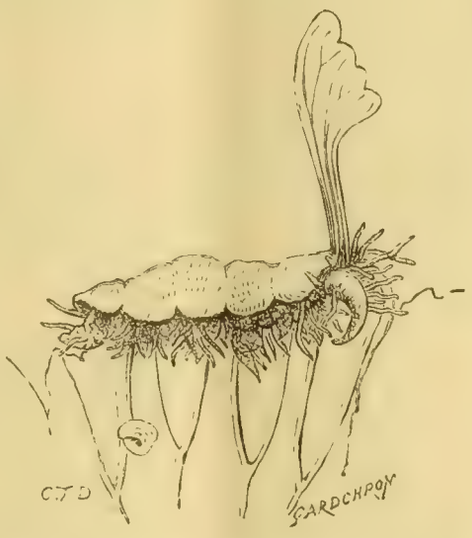


Fig. 137.—Segment of pinnule of Adiantum capillus veneris var. grande, showing site of sorus occupied by bulbils.

The Catalpa appears to have been first made known to Europeans by Mr. Mark Catesby, the English naturalist, who was in our South Atlantic regions early in the last century, and who is remembered by his handsome *Natural History of Carolina*, which appeared in London in 1731. He published an excellent figure of the tree, which he says was unknown to the inhabitants of the settled portions of Carolina until he introduced it from the remoter parts of the country. What Catesby meant by the remoter parts of the country is not clear; but it is hardly probable that he ever penetrated more than one or two hundred miles from the coast, and certainly he never crossed the mountains into the region which is now generally regarded to have been the first home of this tree—south-western Georgia, and central Alabama and Mississippi. It is probable, therefore, that the Catalpa was first brought east of the Alleghany Mountains by the Cherokees, who are known to have been somewhat interested in plants, and that it was from their cultivated plants, or their offspring escaped to the forest, that Catesby obtained the plants for the Carolina planters, and for his English correspondents, to whom he sent the Catalpa as early as 1726. Even to this day there is doubt in regard to the true home of the species. It may be seen growing on the banks of the upper Apalachicola and Flint Rivers, in south-western Georgia, so remote from existing habitations that it is difficult to imagine that the seed which has produced these trees could ever have been blown from cultivated plants. Still it is impossible to surmise how far a plant provided with seed so admirably adapted for transportation by the agency of the wind can eventually be carried from an original starting-point; and the fact that the Catalpa is hardy so far north, and that it has even become naturalised in some parts of Pennsylvania, seems to be an indication that its true home is not in the hot, low, semi-tropical country of the Gulf States, but rather in some still unexplored mountain region of the Appalachian foot-hills, from which it was early carried by the Indians east into Carolina, and south-west into Georgia and Alabama, through which States, and beyond, it has gradually spread, until it is now found over a large area of the middle and southern States.

Two well-marked varieties, at least, of this tree have appeared. The first, the so-called Golden Catalpa, has bright yellow foliage. The second is a dwarf, compact shrub, rarely attaining a height of 6 feet, but spreading widely, and thickly covered with leaves. This curious plant, which is not known to have produced flowers, passes universally in nurseries as Catalpa Bungei, although it has nothing to do with the Chinese species of that name. It is sometimes grafted as a standard on tall stems of the Catalpa, and, grown in this fashion, it makes a small tree with a compact round head, useful for the decoration of small gardens and city squares.

The second North American Catalpa, C. speciosa, was distinguished specifically a few years ago by the late Dr. J. A. Warder, a Nestor among American tree-planters in the west. It is a native of the river-swamps, which abound about the mouth of the Ohio and the adjacent parts of Missouri. Dr. Warder's attention was directed to some Catalpa trees planted in the streets of an Ohio town, and found that they grew more rapidly than other individuals planted with them, and that they assumed a more upright manner of growth. He found, too, that the ends of the branches of these trees were not killed in winter, as was the case with many Catalpa trees, and that they flowered fully two weeks earlier; that the flowers were considerably larger, and were produced in shorter, fewer-flowered panicles; and that the pods were much larger, and nearly twice as thick. These observations led him, and several botanists, to study these peculiar trees, and it was found that the western Catalpas all differed in these respects from the trees which had been ordinarily cultivated in the eastern and southern States, and that instead of one, North America could boast of two species. It was found—and this is probably true of all the species of the genus—that the wood of C. speciosa, although not hard or very heavy, possessed the power of resisting decay in a remarkable manner when placed in contact with the soil. It was found, too, that the young trees grew with astonishing rapidity, and were hardy as far north certainly as the forty-second degree of latitude, and could support the climate and high winds of the western prairies. These were qualities which western planters were in search of, and nurserymen at once set about raising the western Catalpa in great quantities. It has so far proved to be all that was expected of it, and millions of these plants have already been planted in the United States, especially in the West.

The other American species, C. longisiliqua, is a large forest tree widely distributed through the West Indies, where it is prized for its hard, handsome wood, used in cabinet-making, and known as Spanish Oak.

The Japanese Catalpa, C. Kæmpferi, is a smaller and less beautiful tree than either of its North American relatives. It has darker green foliage, smaller and less showily coloured flowers, and slender pods. It is no longer a rare plant in

American gardens, where it grows rapidly, flowers and fruits profusely, and is perfectly hardy as far north certainly as eastern Massachusetts. An interesting hybrid between this and one of the American species has now appeared. It is remarkable in characters intermediate between its two parents, in its hardness, and in its vigorous and rapid growth.

The second Asiatic species, C. Bungei, which must not be confounded with the plant found in nurseries under that name, is a native of northern and central China. It is a large tree, with smaller flowers and leaves than those of the American species, and is not yet known in cultivation either in the United States or in Europe. It may be expected to thrive where the Ailanthus will grow; and its introduction into our plantations has long been desired by American dendrologists, who have sought in vain to secure a supply of seeds of this interesting tree.

Our illustration shows a Catalpa tree growing in a garden near Canterbury, planted about sixty years. Its height when measured some years ago was 32 feet, its diameter 60 feet. One hundred and fifty spikes of bloom were counted on a length of 3 feet of one of the lower boughs. The Catalpa is one of the best town trees known, and it is very hard to kill, new shoots appearing when the old trunk appears to be all but dead. *Garden and Forest.*



Fig. 138.—The Catalpa.

HEDGES.

Few things contribute more to the appearance and to security from trespass of an estate than strong, well-kept hedges; and when these are well planted and properly managed, they prove an efficient fence gainst the inroads of cattl e, and are capable of affording shelter for stock. On the other hand, when hedges are badly planted, and allowed to suffer from neglect after planting, the plants constituting the hedge are apt to die off prematurely, leaving gaps which are difficult to fill up with living plants, and if they are filled with Thorns, &c., they give a ragged appearance to the line. Some persons have recourse to posts and rails in mending hedges, often nailing the rails to the boles of any standard trees which may be growing in the hedgerow—a practice that cannot be too much condemned. Another practice is to stretch barbed wire along the centre of the hedgerow, when it has become thin, and as the wire is obscured by the growth of the hedge plants, it forms a dangerous trap for animals, who never suspect its presence [and a horrible nuisance to inoffensive botanists!]. The best precaution to take is to plant properly in the first instance, and when the plants are established to prune them every year, so as to obtain a close and even surface, with growth from bottom to top. For twenty years I have had hedges under my charge pruned, weeded, and cleaned out by contract, at an average cost of 1*d.* per running perch, and when hedges can be kept in a proper state of repair at so small a cost, there is no excuse for allowing them to fall into a bad state.

The planting of hedgerows of all kinds may be done in mild weather throughout the winter, and the same season is the proper one for cleaning, manuring, &c. Owing to low prices ruling for farm produce, farmers are not generally in a position to spend much money in carrying out improvements o any kind; but landlords, as a body, having made considerable abatements in rents, I think a portion of such money should be spent by the tenant in the planting and renovation of fences, and in other necessary work on a farm.

In carrying out estate improvements, experience teaches the importance of the thorough drainage of wet land, and this must precede all other operations also in the planting of hedges. Having drained the land, it should be trenched, or at any rate deeply dug. If it may safely be done without bringing up infertile subsoil, 20 inches is not too

deep to dig the land, and the space occupied by the hedgerow should not be less than 4 feet.

In the course of my practice, I have had to deal with a variety of soils, and have very generally found that a liberal dressing of manure, incorporated with the top spit previous to planting, has been followed by marked benefit. Strong soils are much improved by a good dressing of lime applied either before or after planting, the lime gradually sinking into the staple, and facilitating the decay of fibrous substances in the soil, as well as affording of itself food for the plants. If moss be present on the soil, heavy dressings of road-scrapings or well pulverised clay are beneficial. Lime is also of great use in ridding land of moss; but lime and manure should not be mixed together, and applied at the same time. When the bed for the hedge-row is finished, it should stand about 8 inches higher than the adjoining land; and where the latter is undulating, care should be taken to let the hedge-row follow the undulations, if these are not too abrupt. The curves of the hedge-row should be easy, although this may not always be possible.

When beginning to plant, stretch a stout cord along the line to be taken by the hedge, fixing it every 10 yards with a hooked stick, or two straight sticks placed crosswise, and cut a trench of sufficient depth with the spade, the back of the tool being hard-pressed against the cord. When Thorns are to be planted, choose strong stocky plants that have been twice transplanted. Cut back any very strong and damaged roots, placing the knife below the root and cutting upwards and outwards; cut off the tops of the plants to within about 2 inches of the base of the stem, to induce the breaking of shoots from the collar of the plant, and thus lay the foundation for a close well-furnished fence. Plant the Quicks, &c., so prepared at about 8 inches apart, laying them in an upright position against the cord, and cover the roots when duly spread out with fine soil, and make the soil firm by treading it. If desirable, a plant of common Holly or Privet may be planted here and there along with the Thorns, to afford increased shelter in winter, and add to the appearance of the hedge at that season. Common Beech is another efficient hedge plant. It thrives best on dry calcareous soil, but is apt to contract disease when planted on a soil that is cold, from holding too much moisture. It should be planted a little further apart than Quicks, and the tops should not be cut off. In choosing the plants, select only such as have been allowed plenty of space in the nursery to form side branches. Several other kinds of plants are used for hedges, but the two former make the strongest and most efficient fence against cattle.

All young hedges should be kept free of weeds, and even in cases where no surface weeds appear at all, I have found it an advantage to stir the surface soil with the hoe and the rake occasionally during the season of growth. I need hardly say that such hedges require to be protected by a fence of some kind until they are well established. *J. B. Webster.*

SCOTLAND.

SCOTCH PUBLIC PARKS.

(Concluded from p. 623.)

BAXTER PARK, DUNDEE.—It is now many years since I visited this park, and the anticipations then formed have not been realised to any great extent. The design and the planting of the park seemed to be of a fairly satisfactory kind, and any small defects in either which were then apparent might have received attention as time went on; but instead, these matters seem to have been left very much to settle themselves, and probably in the next ten years there will be witnessed a practical demonstration of the survival of the fittest, which might be interesting to some, but it scarcely seems to be the best manner of managing a public park. The plantations were originally planted thickly for the sake of giving an immediate effect, but they should have been thinned out before the plants spoiled each other, and at present, Hollies, Laurels, Rhododendrons, Cupressus, &c., are one heterogeneous mass, each struggling for existence and mastery. Amongst others, a Weeping Willow was noticed, which had got worsted in the struggle, and which still lay where it had fallen across the path, and the stock on which the Weeping Willow had been grafted seemed determined to renew the struggle, and had sent up some vigorous shoots, and gave promise of being able to hold its own. On one side of the park, a sort of half-hearted trial had been begun to cut back some common Laurels; these had broken back all right, so it could not be urged that they would not stand the ordeal, and, so far as it went, it was an improvement which wants to be much extended.

The bedding-out was in unison with the rest of the keeping of the park. The semicircular geometrical flower-beds along the broad walk were, curiously enough, made to appear as ribbon borders, by running the lines through, so that all the beds on that side were filled exactly alike; round the crescent, however, there was a little variation, and some beds of Pyrethrum had still the decaying flower-stalks attached, although they must have been out of bloom for weeks. Some beds of Ten-week Stocks were in like condition. Carnations were shocking to behold, they having been simply gathered up in a bunch and a bit of string tied round the middle to keep them together. One more example—a bed with a centre of low, scarlet-flowered Pelargoniums, with a tall, ungainly line of Tagetes outside, and two dwarf lines of double white-flowered Feverfew.

I went up to the top of the park to see a rocky grotto sort of place, which, instead of being clothed with vegetation as expected, was a weird waste, with a dried-up fountain in the centre. It seemed to be the theatre of operations of itinerant photographers, who were very busy taking portraits, my visit being on a Saturday afternoon, when the weather was fine, and the park full of people. That plants would have grown in the place had they been planted, was shown by the specimens of Cotoneaster and Ilex which grew there. However, it is a rare kind of place which has no sort of redeeming feature, and here the cricket-lawns and bowling-greens were in very good order, as was also a row of clipped, specimen pyramidal Hawthorns, along the edge of the central walk. The park has a good aspect, and commands a fine view of the Firth of Tay—including the Tay Bridge—from the flag-staff mound. It is an undoubted boon to the people, and if the management would wake up a little, it might easily become one of the best parks in the kingdom, and worthy of the jute metropolis. *F. R.*

GLASGOW.

This city has long been noted for its parks, and the excellent way in which they are kept, and a recently-made visit showed that this good reputation was still maintained. Kelvin Grove, the West-end park, well wooded and undulating, with fountains, museums, and beds of flowers, affords sufficient variety to please every one. Since the time of the International Exhibition of 1888 in Glasgow, several improvements have been made on the University side of the Kelvin, in increasing the number and variety of the shrubs and trees, and the flower beds are more plentiful, but the area that was occupied by the buildings of the exhibition is not in harmony with the rest of the park; but it may be that this part is waiting its turn to be dealt with. The south side, or as it is called the Queen's Park, is the people's favourite resort, especially on fine Sundays. This portion does not possess fine trees such as are found on the Kelvin side, but for flower beds and general good keeping it is its equal, and in the matter of flower-bedding superior. It is rather a difficult spot to deal with from a landscapist's point of view, the side nearest the town (Cross Hill), having a sharp rise to the general level of the park, which renders any masking of the former not easy. With this object, a line of trees was planted contiguous to the Queen's drive; but to an observer standing on the first terrace the town appears in full view. It struck me that this might be remedied by planting trees close up to the terrace, and possibly some of those already planted will in time do this, but the process is a slow one, and should be accelerated by more planting being done. Those who wish to have a view over the town could still enjoy it by going up to the seats round the flag-staff. The long border was this year (as from time immemorial) planted out ribbon-fashion, with Lobelia erinus, Tropæolum Cooperi, and Cineraria maritima, and the effect was fairly good; and at the end of the walk there was a neat and effective carpet bed, the groundwork of which consisted of Sedum glaucum, Herniaria glabra, and Antennaria tomentosa, chiefly. It was rather irregular in shape, and was panelled out with from three to four rows of plants, such as Echeveria secunda glauca, Golden Feather, Arabis lucida variegata, a few Alternantheras, and a lot of specimen dot plants of Echeveria metallica, Pachyphytons, large Sempervivums and Agaves, with patches of Cerastium tomentosum and Mesembryanthemum cordifolium var. A bed planted with the above has the advantage of being beautiful after the tender things are removed from it. Amongst the beds on the parterre were some good examples of summer and winter bedding combined, that is, the beds were partially filled with Hollies and Retinosporas, and was partially planted with Pelargoniums, and edged with Ajugas, or Golden Feather. Others had blue Violas and Golden Feather, Verbenas, bronzy-leaved Pelargoniums, Cineraria maritima, and variegated Alyssum. Several small round beds of Violas looked very well, as also others planted with Pentstemons. Some subtropical bedding was done with the similar materials to the carpeting, but the crowding of the plants rendered the beds ineffective. Spaces in the front of the shrubberies were brightened up with Violas, Pyrethrums, and Cineraria maritima, but there was nothing that was very striking amongst the shrubs themselves. But on reading one conspicuous label attached to a plant, one read Rhus cotinus, which was unfortunate, seeing that the plant was a good specimem of Rhus typhina. Near Mr. Cruden's house there were good beds planted with bronze and tricolor Pelargoniums and Centaurea ragusina. Altogether, I can recommend the Glasgow parks as being worthy of a visit when once in the neighbourhood, and at the proper season.

EDINBURGH

is the last place I saw in my hurried visit to the North, and that not with any fulness. My observations were entirely confined to the Princes Street Gardens, which run, as is known, parallel with that street, and in the valley separating the old from the new town. This situation is peculiar, and being far below the level of the street, the situation lends itself readily to very striking gardenesque effects. However, little as yet has been done in that way, for the gardens. The chief features are the nice keeping of the turf, a few flower-beds, those in the east gardens, alongside the walk, reminding one very much of the little bits of pigments in a toy colour-box, which are often inserted parallel with the sides. On the other side of this walk there is a row of Yucca recurva—they have a ragged appearance, and might with advantage be removed, and their places occupied by something more suited to the position; and almost anything would be better, the Golden Elder excepted, there being far too much of that shrub already. If evergreens are desired, good plants of Hollies, Aucubas, or such like, which seemed to flourish close by, and perhaps a line of weeping trees, might not be amiss for the position; at all events, something with a more vigorous look about them would be an improvement.

In the west gardens, surely something might be done by which advantage might be taken of the grand masses of rocks on which the castle stands, and more suitable subjects planted. Another matter which appeared rather monotonous was the planting of the shrubs—each clump a repetition of the other,

that is, you get a Rhododendron, then an Aucuba, and next a Holly, and so on, and all pretty much alike. Why not have made a mass of one species of plant, and the next group of another, and thus render the general effect and interest of the thing much greater. Notwithstanding these apparent defects, the general keeping of these gardens is excellent. Some elaborate examples of carpet bedding were to be seen; indeed, we thought the great force of the place was in this direction. *F. R.*

PROGRESS IN FRUIT CULTURE.

Having occasion to look up a certain illustration of an Apple in *The Herefordshire Pomona*, of my late friend, Dr. Bull, I was struck by the small size of the fruits there figured compared with the exhibits of the present day, and the case is more marked when we consult Leroy's great work and the old *Malus Brentfordiensis* of Curtis. In fact, fruit culture or feeding of fruit trees is quite a recent practice, except, in the case of such gardeners as Charles Ross of Welford Park, W. Ingram of Belvoir, Sidney Ford of Leonardslee, and others, and may be said to have dated from the first of the Woolhope Club shows at Hereford, where Mr. Charles Haycock astonished the pomological world with the examples from Barham Court, Kent, and Mr. Lewis Killick set up his orchard fruit, run hard by the local exhibits from Holme Lacy and Stoke Edith Park, and from Mr. Pipers, of Ledbury. It was from such examples that the *Pomona* was furnished, under the admirable hands of Miss Edith Bull and Miss Ellis, seconded by the able colour printers, Messrs. Severyn, of Brussels. No one will forget the collections of over one hundred kinds each of Apples and Pears shown at the Crystal Palace by Mr. Haycock in 1884, at that time considered unapproachable, which made competitors hold their breath and covet the possession of such a soil, skill and situation. Fresh combatants soon entered the field, and Mr. J. McKenzie, Linton Park; Mr. J. McIndoe, of Hutton Hall; Mr. C. Goldsmith, of Beckenham; Mr. George Goldsmith, Hollanden Park; Mr. C. Davis, Mote Park, Maidstone, ran the champions closely for 1st position; and in the Pears, the late Mr. W. Wildsmith, of Heckfield; Mr. C. Goldsmith, and Mr. Jesse Thomas, of Sittingbourne (who exhibited under his manager's name, Butler), carried all before them. Soon, other competitors came to the fore, and, taking advantage of Mr. Haycock's withdrawal, Mr. A. Waterman, gardener, Preston Hall, Maidstone, showed well, and with each year new competitors appeared, and larger and larger still grew the Pears and Apples, better in colour and finish, and greater care in staging, became the rule. Mr. G. Woodward assumed Haycock's charge at Barham Court, and as the trees there became established, so the fruit increased in size, till, in 1889, Woodward carried off the chief prizes in the amateur classes. Finer twelve dishes of Pears were probably never set up than those at the Palace show in that year, while the Apples were marvels of good culture. These examples will be remembered by all who saw them.

In 1883 the first of the Chiswick Conferences was held, and Mr. C. Haycock had the finest Apples and Pears, but the late Mr. Wildsmith, Mr. C. Davis, of Mote Park, and others, had remarkable collections; Pears and Apples being well shown by many amateurs. This must be classed as the Peasgood's Nonsuch year, the examples of this shown by Messrs. Lee, of Hammersmith, and other exhibitors, will occur to all visitors there. Pitmaston Duchess took the leading place in Pears. At this date it is only fair to say that the 1st prize fruit of that day would now barely take a 2nd prize, so remarkable has been the advance of culture; and this is due to the more general adoption of the Quince stock for Pears, and the Paradise stock for Apples. These surface-rooting stocks are ready with numerous roots to absorb the food prepared for them.

1888 saw another big meeting at Chiswick, and brighter and larger were both Pears and Apples. This conference will be noted for the introduction of Bismarck and Tyler's Kernel Apples, and the Pears were generally good examples. Several new competitors came to the fore, and yet in 1889 and in 1890 there was yet another improvement manifested, better varieties and larger fruits being shown, together with some extraordinary fruits grown under orchard-house treatment at Sawbridgeworth.

Well, how do we stand to-day? The plates are not big enough to hold six fruits of a sort, twelve plates are wanted for six sorts, and the perfect finish of the leading kinds of Apples, Warner's King, Peasgood's Nonsuch, Alexander, Loddington, Bismarck, Mère de Ménage, Stirling Castle, Grenadier, Lord Derby, Gascoyne's Seedling, The Queen, Queen Caroline, Golden Noble, Blenheim Orange, Tower of Glamis, New Hawthornden, Ecklinville, Lane's Prince Albert, in the kitchen sorts; and Cox's Orange, King of Pippins, Mother, Melon, Ribston, Worcester Pearmain, Braddick's Nonpareil, Washington, Wealthy, Baumann's Reinette, Ross Nonpareil, Cox's Pomona, King of Tomkins, Mabbott's Pearmain, Brownlees, and Egremont. Russets, among the desserts, seem to have reached the highest pitch of excellence, yet I venture to prophesy, that in ten years' time still larger examples will be produced, the secret of which is early thinning, early feeding, and liberal watering in May, June, or July, when dry weather sets in.

I have only referred to the private growers; but the same improvement has manifested itself among the trade, and to them the general public is indebted for exhibiting the new varieties in such a condition that a correct estimate of their utility can be gained. The first part of this paper was penned before the fruit shows of this season (1890) were held. Never before has competition been so keen, or have the amateurs shown so well; and there now appears to be a want of a large class for Apples (say forty-eight dishes for amateurs), who are fully competent to fill it well at what is the best hardy fruit show of the season—that of the October meeting at the Crystal Palace.

Amateurs can scarcely be expected to make up one hundred dishes in the open class, but many who now show twenty-four would rise to forty-eight; and a fresh stream of exhibitors would come in at the six dishes, and reach to the twelve class (as in the National Rose Society), and from thence take a shot—first at the twenty-fours and then at the forty-eight dishes. It is these smaller growers who supply recruits for the larger classes at shows, and every encouragement should be given them. The Guildhall show led off the season 1890, and a wonderful collection of fruit was brought together. It was to be regretted that the Gold Medal class was not divided between southern and northern exhibitors, as, in judging, some grand collections had to be left out which were as creditable to the growers as those shown by the prize winners who enjoyed a better climate and more sunshine. There was no question that Mr. Woodward, Barham Court, well deserved the Gold Medal, his Apples and Pears being large, clean, even, and devoid of angles and blemishes, and contained the cream of those in cultivation in both cases. The Silver-gilt Medal fell to Mr. C. Davies, whose Pears were the best part of his exhibit, but the Apples ran off in size, whilst their colour was very fine. Mr. Woodward believes in mulching rather earlier in the year than some other growers, and supplies water rather abundantly, and in that way affording sustenance in aid of size and colour. The major part of the fruits shown at the Guildhall was good, and except in the northern, cottagers', and farmers' classes, it was above the average, and seemed to emphasise the fact that our much maligned climate and soil are capable of responding to careful culture.

The Crystal Palace October show followed next, and the old exhibitors came to the fore, but owing to some of the best fruit having been sent from the Guildhall to the Queen at Balmoral, the coveted Pear prize for twelve dishes went to Mr. W. Chisholm, of Oxonhoath Park, Tonbridge, who staged fruit of perfect colour and finish, and Mr. G. Woodward was placed 2nd. The Apples were of great excellence, and here Mr. Woodward took his accustomed place; a Herefordshire grower, Mr. T. Parker, Moreton Court, Hereford, also showed well, colour being the finest point in his fruits. This show was fully reported by the *Gardeners' Chronicle*, but I wish to allude here to a few of the exhibits to show that general excellence was fully maintained, and that year by year there is an improvement to be noted. A cool summer has some lessons in fruit culture which must not be neglected, as some varieties will succeed under adverse circumstances, and others will not. The 1st prize for twelve dishes of Apples was taken by T. Austen Killick, Maidstone with fruit from orchard standard trees.

At the Aquarium show, Messrs. G. Bunyard & Co., Maidstone, showed 140 dishes of Apples, distinct, and were worthily followed by Mr. J. Watkins, of Withington, and I mention this to show how many good varieties there are in cultivation, and how difficult it is to reduce the numbers of these (as some would like to do). I hear of very large beautiful varieties of Apples being in request for table decoration. The production of fruit has become an interesting hobby with large numbers of persons in all ranks; and the more general increase of quality will lead to greater consumption both of dessert and culinary varieties.

Wherever there is a surplus from the home orchard or garden, a ready sale for the same may be found if the fruit be good and sound. Looking back thirty-five years, I find that our old orchards, without care or attention, produced fruit that fetched 1*s.* 6*d.* to 2*s.* per bushel, which was thought to be a fair price for Apples, but the average for the last ten years would give nearer 5*s.* per bushel for Apples wholesale.

Year by year the buying power of the masses has increased, and the cry is for more fruit, and the holding of these exhibitions has done a great deal of good in educating the taste of the people. I feel convinced that if planters, nurserymen, and cultivators generally will but press forward energetically, the dry American Apples will be doomed; but manuring, watering in dry seasons, and garden practices generally, must be carried out in orchards.

Something has been said about orchard-house fruit being shown with out-of-doors fruit. I am of opinion that, wherever this is done, the dishes should have a card placed on them stating the fact, in order not to mislead the beholder; but for exhibition purposes the best must win, as in other contests. [We think this would scarcely be just.] After all, what advantage does the possessor of an orchard-house gain over those with enclosed gardens, walls, cordons, and espaliers? Very little. Take the show Dahlia for example, no private grower ever expects to get such noble flowers, as he noted when he made up his mind to buy all those in the prize-stand, without culture or handling.

I feel I have made this a very lengthy paper; but I must remark, that many old and second-rate kinds must be thrown out to make way for the newer ones, and that the hope of the cultivator must lay principally on young and vigorous trees of the best varieties. *Geo. Bunyard, Maidstone.*

Amber.—Dr. Conwentz, of Danzig, has just published a monograph of the trees producing amber, comprising comparative observations on the vegetative and floral organs, and resin of the Baltic fossil trees. The work is handsomely got up, and illustrated with eighteen beautifully executed coloured plates, showing the details of the internal anatomy of the bark, root, stem, and leaves. The species described are various species of Pinus, and Picea. The mode of formation of the resin, the various diseases of the trees arising from fungi and insects, as seen in the fossil remains, are all dealt with in what is a masterly production.

Home Correspondence.

NOTES ON WINTER FLOWERS.—Gardeners are, as a rule, very busy men, and so there is every excuse why more of them do not, as a rule, save and select their own strains of florists' flowers. It is a very fascinating branch of floriculture, and well repays the trouble. Mr. Salter, of Woodhatch, Reigate, has done this for years. His strain of Calceolarias was noticed in your issue of June 21. Just now his Primulas and Cyclamens are very well worth seeing. The white Cyclamens are of a great size and substance, and some of the crimson selfs glowed with deep colouring. Mr. Salter also evidently likes to have houses full of the same flower. One house was filled with the fine free-flowering Chrysanthemum La Virginale; another with Bouvardias, chiefly President Cleveland; a third with Calanthes; in this house Maidenhair Ferns were so arranged that the pink flowers of the Orchid protruded from a dense carpet of Fern, giving a very pretty effect. The colour of the Calanthes was much finer when distant from the pipes. *C. A. M. Carmichael.*

THE INFLUENCE OF THE SOIL ON THE GROWTH OF ANNUALS.—In the report of my experiments published in the *Gardeners' Chronicle* for December 6, there are several mistakes. I was unable, unfortunately, to revise the proofs before publication, and hence these slips of mine have been given to the world. Thus, in Table 2, the average of the third column is $16\frac{5}{16}$; in Table 4 the sum of the fourth column should be 369·6, and not 367·6; in Table 6 the sum of the last column is 192·93, not 215·93. There are also mistakes in Tables 5 and 8; both are due to my rule never to include cases where the material was not sufficient to give perfectly trustworthy conclusions. The case of Nasturtium was by inadvertence admitted, though I had determined that as I could not positively be certain there were no side-branches in the manure plants, this plant should be excluded; hence, the averages from the six complete cases are correct, save that of the leaf-mould, which should be 20·9 (from the sum 125·5 excluding 8·5). Those in Table 8 are more numerous, and I therefore append the corrected results:—

	Peat.	Lime.	Sand.	Leaf-mould.	Manure.
Sum lengths × breadths	7·142 × 2·39	14·528 × 4·858	14·14 × 4·11	18·81 × 6·63	18·06 × 6·512
Averages ,, ,, ...	1·02 × ·34	2·08 × ·694	2·02 × ·587	2·7 × ·95	2·58 × ·93
Proportion of lengths	1	2	2	2·6	2·5
,, ,, breadths	1	2	1·9	3·2	3·1

The conclusion as to the meaning of this last result is therefore very dubious. If I may be allowed a further statement as to my methods, my aim always was to get as large a number of measurements as possible, so as to eliminate the results of individual variations. Thus, this unfortunate Table 8 required the measurement of about 4000 lengths of leaves, as well as 4000 breadths. In the other Tables, I counted the flowers and side-branches, and measured the height and root-breadth in every plant I could spare. The labour involved in such forms as Mathiola was very great, but the results are more trustworthy. *G. F. Scott Elliott, M.A., F.L.S.* [By an unforeseen circumstance Mr. Elliot's tables were published before his corrections were received. Ed.]

PENTSTEMONS AND ANTIRRHINUMS. — The wreck wrought by the frost amongst border flowers is pitiable, as, with one fell swoop, almost everything was entirely cleared off by frost on October 2, and amongst the few plants with blooms that stood erect, or raised them afterwards, were Pentstemons and Antirrhinums, which now look as fresh as if nothing so bad, after all, had happened. This shows the great value of these plants for autumn-work, but to see and have them at their best each year, and especially at this season, it is necessary to propagate them annually by cuttings or seeds, as then strong vigorous plants are obtained that keep on growing and sending up flowers for months in succession. Although late now for putting in cuttings, there is plenty of time for them to strike, and they may either be inserted in pots in the ordinary way and stood in any cold frame, or placed under handlights anywhere on a sunny border, where, with the slight protection referred to, they will be safe for the winter, and when spring arrives, they can be planted out where they are wanted to bloom. If raised from seed, April or May is time enough to sow to have plants that will continue on to this late period, and after, but it is advisable to raise a batch by sowing out in the open, or under hand-lights in August, and then to shelter the plants in cold frames during winter. The great thing in starting with Pentstemons and Antirrhinums is to get seeds from a good strain, as then very fine flowers may be looked for, and the best sorts afterwards kept, and increased by cuttings. *J. S.*

TUBEROUS BEGONIAS.—It would surprise many gardeners to see these handsome plants blooming quite late in the autumn in the gardens of Bowden Hill, the residence of Herbert Harris, Esq. On the occasion of a recent visit, I was struck with the magnificence of a large bed, in which over 300 plants were flourishing, and which were received from a well-known grower in the spring; varieties much superior to many one sees grown in pots, and such enormous flowers, some measuring 6 inches across, were observed in this bed. The weather seems to interfere but little with Begonias, and shelter does not seem to be demanded by them, as the plants do well on the top of this hill, and which is sufficiently elevated to enable one to look for many miles over what is one of the prettiest landscapes in England. The owner of Bowden has very much enlarged his garden of late, and has taken to Orchid-growing. *W. A. Cook, Compton Bassett.*

TOWN TREES.—Although present at the discussion which followed Dr. Masters' address at the Drill Hall, on "Town Trees," on Oct. 28 last, I took no part in it, as it is best in connection with topics of which one has little practical knowledge to be an interested listener. Naturally, comparatively few persons know much about town trees and shrubs, for the obvious reason, that the scope for experience is so limited as compared with the range open to tree cultivators in the country. Now, this season we have seen out in the country trees and shrubs making splendid growth, and in spite of severe frost, the leaves held on with wonderful pertinacity. These effects were a consequence of the abundant rainfall of the summer which penetrated to the roots thoroughly, although it was wonderful to note how dry the soil was, in spite of the deluging rains of the summer. But if trees in the country obtain such soakings of moisture, and yet find them none too much, what must be the case with trees in town streets, which have every drop of falling rain excluded from the roots by the asphalte or stone pavements, and the hard impervious surface of the roads, with every drop of falling moisture carried away into drains, even air being excluded. It is obvious that trees which may find moisture enough in the oddly made-up subsoils of the roads for several years must eventually succumb to root drought, and die of sheer thirst. It is strange that those who favour town tree planting, as too often practised in streets and roads, should yet fail to perceive the importance of making provision for a supply of root moisture. It would seem obvious to all that, in planting trees, ample provision should be made for watering by a process of irrigation, especially during the summer-time. A thorough washing through the aid of steam fire-engines would be productive of great good, were the nozzle of the hose made to spread the stream of water, and not to pour it out with too strong force. Still, the roots would benefit but little if the water ran off into the drains. The present watering surface for street trees in towns is at most a couple of square feet at the base of the stem; that is valueless for all practical purposes. I was particularly struck lately with the aspect of the once robust and leafy lot of Robinias which line either side of the Sutton Court Road at Chiswick, and adjoining the Royal Horticultural Gardens. For some years after planting, these trees did so well, that hard pruning was needful every two years. The footways, on the margins of which the trees are planted, are, and have for some time been, asphalted and the road is as hard granited, all the surface-moisture passing into the channels and drains. There seemed to me to be no doubt whatever, when I saw the trees in the autumn, that what might be called dry-rot at the roots, had set in, and that they had seen their best days. Aërating the roots, and irrigating them, are the chief problems to solve in street tree planting. *A. D.*

SECOND BLOOM ON CHRYSANTHEMUMS.—This is no new idea, as your correspondent would assume, the same plants from which show blooms are cut affording others in abundance as a kind of second crop of flowers that are smaller, and an agreeable change from the large ones. Instead of cutting the plants down close to the soil directly the flowers are removed from the ends of the shoots, examples of certain varieties are set aside for a second crop during December and afterwards; indeed, a gardening friend of mine was last year enabled to keep up a supply of nice blooms of the large-flowered varieties continuously until the middle of the month of April, these fetching good prices in the market. The Japanese varieties are those that are found the best for this purpose, as they flower freely, and are fuller in the centre than the incurves generally are. Although there are exceptions in the kinds, notably Princess of Teck and Hero of Stoke Newington, and the yellow sport Mrs. Norman Davis, Mrs. J. Wright, Belle Paule, and Madame C. Audiguier, are some of the best for setting aside for a second crop. Single-flowered varieties also produce second crop on side shoots, which are freely produced on the main stems when the plants have been grown tall, and not much pinching of the laterals practised. Top-dressing of the soil is of much advantage when the plants are flowered a second time. *E. M.*

WHITE OWLS.—In reading the interesting remarks on the maternal courage of the white owl, by Mr. Gardiner, p. 667, I thought it might be of interest to record another incident of the courage of the owl, which occurred to me and a friend at Pendell Court, about two years ago. In a large Elm tree, close to the gardens, a pair of owls had reared their young for several years past. Now it occurred to my friend, that he would like to bring up a young owl in a cage; accordingly, he procured a long ladder, and managed to find a pair, fully fledged, and putting them in a cage, we stood them in an open shed, close to the bothy. As soon as it began to get dark, we could hear the old owls hooting around the trees close by, which were soon answered by the younger ones in turn; in the morning we found a few mice, and two small birds—a sparrow and a greenfinch, on the floor close to the cage. Now it happened on the next night, we had been looking at the prisoners in the cage, and were just retracing our steps to the bothy, something crashed down on my friend's head, nearly stunning him for the moment, and we heard the hooting of an owl which flew to a tree close by. On an examination, his head disclosed three distinct wounds, which bled profusely. The birds appearing to meditate a second attack, we moved into the shed, and thinking that the best thing to be done to quiet them would be to let the young ones out, which we accordingly did, and they soon rejoined the old ones, who noticing their release, flew to a distant tree, leaving us amazed at their courage. *C. Wood, Pendell Court, Bletchingley.*

SWEET-SCENTED CHRYSANTHEMUMS. — The pale pink single variety, Mrs. Langtry, is distinctly perfumed, and much valued on that account. As the variety grows from seed, and is free to flower, one or two plants in a house would be sufficient. The scent from this variety appears to me to be distinct from that of any other. Proge and Dr. Sharpe have long been noted for the Violet-like perfume they give off, but it falls a long way short of that of Mrs. Langtry. To get the best results, the cuttings need not be propagated before the middle of February; the plants should be pinched at the points twice afterwards, allowing all shoots to extend and flower, which they will quickly do, clothing the side growths with bloom. *E. M.*

THE WEATHER DURING NOVEMBER AT RIPLEY CASTLE, YORKSHIRE.—November was a very dull month, only one or two bright days occurring. Such things as Winter Cucumbers and Tomatos suffered greatly during the long continuance of the dull weather. In fact, at one time I thought we should have lost the plants that are in fruit at the present

time. Rain fell upon 21 days, the total for the month being 2·71 inches. The first snow occurred upon the 24th, and fell the four succeeding days, but did not lay for more than a week. On the 30th we registered 19° of frost. Highest shade temperature for the month, 59° on the 1st; lowest, 13° on the 30th. Mean maxim, 47°.6; mean minim, 31°.3. Mean temperature, 39°.5. Highest reading of barometer, 30·43 on 17th; lowest, 29·00 on 7th; mean, 29·87. *J. Tunnington, Ripley Castle.*

BIRNAM.—The short account of Birnam in last week's issue has one serious omission. No mention is made of the vicinage of Murthley, which is one of the most interesting places to the tree-lover in the whole of the United Kingdom. It claims, I think, the unique distinction of being the only place in Europe where Douglas Firs, grown on the spot, have been sold by "public roup." Not only is an opportunity given to study the above Firs, but there are large numbers of nearly every Conifer, planted at different heights, and in various positions of soil and shelter. Most of the soil is on the old red sandstone, which gives a light loam; some, however, is on the silurian, which gives a stiff clay requiring much draining. The trees have suffered much less from winds and other causes than the famous trees which William Barron has left as memorials of himself at Elvaston. In both places there has been a great deal of avenue planting. Two other estates near Perth, showing the value of scientific forestry, are Lynedoch and Dupplin. A full account of the Douglas Firs at Murthley was given some time since. *C. A. M. Carmichael.*

CELOSIAS FOR AUTUMN DECORATION.—Every year these plants are seen effectively employed among other subjects at the Birmingham Chrysanthemum Show, by Messrs. Thomson, Sparkhill Nurseries. Celosia plumosa pyramidalis and Roman Hyacinths, Tuberoses, Maidenhair Fern, fine foliage Begonias, and Crotons, had a splendid effect. The Celosias are grown in quite small pots, considering the numbers and size of the richly coloured plumes. For conservatory decoration small plants of this type of Celosia are much appreciated at this season as well as earlier. *E. M.*

FUMIGATING INSECTICIDES.—A few words on the above subject may not be out of place at this date, as I find "J. C. W.," p. 669, in last week's *Gardeners' Chronicle*, objecting to the use of red-hot cinders, and rightly so, as they are objectionable, and do much mischief. But the use of red-hot cinders is not at all necessary when using the new patent Fumigator of Messrs. Gardner & Smithson, Bristol, and sent out by Mr. George, of Putney, that being the Nicotiana paste so highly spoken of by "R. D." previously, as the cakes of this substance when broken up into small pieces and some paper or shavings ignites readily, if there is a small place at the bottom of the fumigator to allow of lighting it, and for the ingress of air. I have, in the case of choice Orchids, used a box, and lit pieces of the cake with an ordinary match without any difficulty. The cakes did not give off a dense volume of smoke, but filled the box slowly, and did not blaze. Thrips are readily killed. If "J. C. W." will try either of the above methods, he will find the stuff to answer well, and even in the case of large houses, I have ignited the cakes with pieces of newspaper slightly rolled up, and it has never failed to burn. It is a great advance on the old tobacco-paper or cloth, providing a suitable pan or fumigator is used, with space to light the material, and the first layer should be placed lightly on the paper. One great advantage is its not flaring, so that it can be left without any attention if sufficient Nicotiana has been put in the burner. It is cleanly in use, and I am sure it will find favour with amateurs as well as gardeners; and if an uniform good quality is always supplied by the makers there is no fear of its making its way. *G. W.*

TOMATOS, HOW TO GROW THEM.—I have (in connection with my article in the *Gardeners' Chronicle* of November 22, on Tomatos and disease) received a number of letters asking my opinion of the various methods employed in connection with their culture. I assume the writers regularly receive your paper, and, being anxious to comply with their requests, I will, with your permission, give an account of my methods, for the benefit of those who have inquired. First, I am asked whether I favour the single stem, or the extension system of growing Tomatos for producing the heaviest crop of fruit? I prefer the single stem to any other, especially for pot culture, for by the removal of the laterals, the strength of the plant is concentrated to the production of fruit. If planted out, to be grown as single stems, double the quantity of plants may be grown on a given space than by other methods. They will require to have their roots a little confined during the first stages of growth, and to be afforded nutriment as soon as the plants show signs of requiring it. Secondly, I am asked if a house with a west aspect, warm, and humid, is a good one? To that I say, the reverse of all this is required. Air should be admitted freely when the weather will permit, in order to secure healthy foliage, and that the atmosphere of the house should be kept moderately dry. Thirdly, I am asked my opinion of the common practice of denuding Tomato plants of a part of the foliage? I have experience of that method, and I have no hesitation in saying that it is a bad one, and should be condemned by all practical men. The stopping and cutting out of lateral shoots is certainly necessary; but to induce firmness and vigour in growth (which is most desirable) the leaves must be retained, for I consider the leaves perform a most important part in the maturation of the wood, and the formation of fruit. Therefore, by cutting off many of the leaves, we, to a great extent, destroy the elaborating mechanism of the plant, and until new shoots and leaves are formed to take the place of those removed, and by so doing weaken the plant, and open the door for disease. *J. Charlton, Farnley Grove, Corbridge-on-Tyne.*

COMPETITION PRIZES AND THEIR DISTRIBUTION.—Your correspondent's proposal in last week's issue of the *Gardeners' Chronicle*, raises a question of great importance, and whilst admitting the fairness of his remarks in the case of very close competition, I fail to see how his scheme can be satisfactorily worked out. Now, Mr. Dean proposes that the distribution of prizes should be ruled by points. Very well. Now for convenience sake, we will say there shall be three prizes; a maximum of sixty points, and allotted on a £6 basis. The first lot is perfect in every way, but the second and third are very inferior. Example:—1st prize, sixty points, takes £3 6*s.* 8*d.*; 2nd prize, twenty-five points, £1 13*s.* 4*d.*; 3rd prize, twenty points. Now as the 3rd prize is five points to the good over and above his standard, where shall the 3*s.* 4*d.* be deducted from? he will naturally clamour for it, and if there should happen to be a cup to compete for, and the 1st and 2nd are within a point or so of each other, then I tremble to contemplate the confusion that must inevitably arise on the new system. Judging from experience, the majority of competitors look upon the prize-money as a secondary consideration, and take defeat like true Britons, with the laudable resolve to reverse matters on the first opportunity; and the judges' duties are arduous enough, in all conscience, with the limited time at their disposal, without being saddled with extra work in the shape of "point taking." Looking at Mr. Dean's proposition from a practical point of view, I am doubtful whether it will receive much favour from the horticultural world. *G. B. Claydon, Holbecks Park.*

FUMIGATING INSECTICIDES.—I would strongly recommend "J. C. W." to try "Campbell's" fumigators, sent out by Messrs. Clibran, of Altrincham. For cleanliness, safety, and efficiency, they surpass any fumigating insecticide I have used. They are guaranteed not to injure foliage, however delicate. I have fumigated with them, strong enough to kill black-fly and thrip, and with not the slightest injury to Maidenhair Fern. They are manufactured in rolls, are lighted with a taper, and in suitable sizes for houses or pits, having a capacity of 100 to 4000 cubic feet; of course, larger houses would require more fumigators. *L. Jordan, Holdenby.*

HAMBURGH GRAPES.—Notwithstanding the enormous importations of foreign Grapes into this country, home-grown Hamburghs of good quality still command a fair price, and I think I may safely say that any grower who may not wish to keep his produce until the end of the year, when naturally higher returns are to be looked for, may calculate upon a very profitable return if he should determine upon marketing his fruit as soon as ripe. But it must be understood that I am speaking of good Grapes only. When the Hamburgh starts naturally, it will generally ripen off about the end of August, and good bunches will then fetch very fair prices; extra fine bunches of course will command much higher prices. In cutting the bunches as soon as ripe, the grower obtains two very distinct advantages which materially serve to compensate him for the comparatively low prices obtained at that time of the year, in the first place: he sends to market the full weight of his crop, for I need scarcely say that from the time a bunch of Grapes is quite ripe until it is cut, a gradual deterioration is going on. Hamburgh Grapes lose quality fast unless great care is taken with them after they are ripe, and every means should be taken to keep the air of the vinery dry. There is still encouragement for Grape growers; and in spite of foreign competition, profitable returns may be obtained, even should the crop be marketed as soon as ripe. *C. Gill, Trafalgar Park.*

SOCIETIES.

ROYAL HORTICULTURAL.

Tuesday, *December* 9.—The meeting at the Drill Hall, James Street, Westminster, as befitted the last one for the present year, was well attended by gardeners and nurserymen of the metropolis, and by some few patrons of horticulture. The exhibits consisted of some handsome Cypripediums from Messrs. J. Veitch & Sons, Chelsea, and Messrs. F. Sander & Co., St. Albans; Primulas, from Mr. May's nursery, Edmonton; Onions, from Banbury; jams and other preserves, sent by Mr. Beach, &c.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. B. Wynne, H. Herbst, R. Dean, T. Baines, F. Ross, W. E. Leach, C. Jeffries, H. Cannell, C. Noble, G. Paul, H. H. D'Ombrain, E. Mawley, H. Turner, and W. H. Williams.

Messrs. H. Cannell & Sons, Swanley, contributed some glowing boxes of cut bloom of zonal Pelargoniums, and although they were done up in big bunches to gratify the sense of sight, and not exactly as the flowers grew on the plants, it must be confessed that they are just the kind of bright thing that we want in this gloomy season, and are as easy of cultivation as the far more expensive Cattleya or Lælia. There were a great many varieties whose names may be found in Mr. Cannell's lists. A new colour was seen in Souvenir de Mirande, a bright pink, the lower half of the petals white, but without the white forming an "eye." A good lot of plumes of Celosia pyramidalis were amongst Messrs. Cannell's exhibit. Gardeners will recognise an old acquaintance in this plant, that some writers are inclined just at present to overpraise. It may be said here, by way of caution, that it will do no good in an ordinary greenhouse.

Mr. H. B. May, Dyson's Nursery, Edmonton, N., had a group of Primulas in pots, well-bloomed at this early date. These consisted of the old double white, and Mr. Gilbert's double-flowered seedlings, in various shades of rose, and also white, with the least suffusion of rose-colour in it.

The much-bespoken Chrysanthemum, Mrs. Alpheus Hardy, was exhibited by Messrs. Pitcher & Manda, Hextable, Swanley, as a dwarf bush. The plant shows its capabilities to form a dense mass under severe stopping, but not good blooms; in fact, it was a wretched thing.

Mr. A. Waterer, Knap Hill Nursery, Woking, exhibited Picea pungens var. argentea—a rigid-growing Spruce, of a fine bluish-green appearance, with longer needles than the type P. pungens, a plant of which stood alongside; and Picea pungens var. glauca, which differed but little from P. p. argentea—it was, if anything, less blue in tint and strength, the latter difference being due probably to soil or position. The Colorado Spruce, P. pungens and its glaucous varieties, could not be well seen in the gloom of the Drill hall. The argentea variety (Parryana glauca of some) is certainly the best and hardiest of its kind. It should be remembered that it has nothing to do with Pinus pungens. The glaucous variety of Cedrus atlantica was likewise shown.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. J. O'Brien, D. B. Crawshay, H. M. Pollett, H. Ballantine, C. Pilcher, J. Dominy, E. Hill, J. Douglas, L. Castle, M. T. Masters, and Sydney Courtauld.

Cypripediums made the major part of the Orchid show, and those of Messrs. J. Veitch & Son, exhibited some remarkable varieties of Mr. Seden's raising, in which the results were seen of employing the same species alternately as the seed-bearer or the pollen-parent.

In Messrs. F. Sander & Co.'s Cypripediums, the results of hybridising were equally remarkable, if in a different manner, and were in some instances, beautiful additions to this favourite genus; we specify a few—C. insigne longisepalum, whose general appearance is that of the type, but with more delicacy of tint, which is pale greenish-yellow, with a prominent crest of bright yellow; C. hybridum Castleanum (Rolfe) = C. hirsutissimum × C. superbum, pale purple in all its parts, except the dorsal sepal which is dark purple, all but the apex and edge; C. h. Alcides = C. insigne × C. hirsutissimum, is a handsome waxed flower of light green generally, with a rosy suffusion, wavy at the edges of the petals, and also hairy as in the latter parent; C. Pollettianum, raised from C. calophyllum and venustum superbum, a striking flower of deep crimson tints, fine large dorsal sepal, lined perpendicularly with dark crimson; tip and margin of the same are white. C. h. orphanum is the result of crossing C. venustum and C. callosum, a fine striking bloom of a crimson colour, petals drooping, and of a lighter tinge than the lip, greenish at the base, as is also the dorsal sepal, but which is white at the margin and apex. C. h. Maynardii = C. purpuratum × C. Spicerianum, the characteristics of which are distinctly indicative of many of those of the parents, especially of purpuratum, as seen in the white, folded back dorsal sepal, the petals are of a coppery hue, and the lip is crimson. Selenipedium hybridum Weidlichianum = C. Hartwegii and C. Schlimi, a tall thing with a distant resemblance to a better flower. Cattleya Brieniana, a nice rosy-lilac species.

Mr. H. A. Tracy, Amyand Park Road, Twickenham, showed a plant provisionally named Cymbidium Tracyanum, a plant of strong growth, whose stout spike of flowers bore considerable resemblance to C. Lowianum. From T. Statter, Esq., Stand Hall, Whitefields, Manchester (gr., Mr. Johnson), came Lælia (Cattleya) Tresederiana, a product of Cattleya crispa, of which it is a small copy, and C. Loddigesii. The plant received an Award of Merit.

Lælia Goldieana was from the same collection. The plant—in a basket—had six flower-spikes. The colour was a very rich one, and the plant decidedly ornamental; it is said to be excellent by artificial light. An example of Oncidium Forbesii var. maculata, the rich yellow and brown blooms of which are very pretty, was shown by Mr. Walters, Hampton Heath. The plant grew on a small block stuck into a pot. A fine mass of Lælia anceps, well bloomed, came from G. N. Pepper, Esq., Milford Hall, Salisbury. Mr. T. Osborne, gr., The Grove, Teddington, showed Cypripedium Osborneii = C. Harrisianum superbum × Spicerianum, a flower large in all its parts, the lip crimson and reticulated, petals of the same hue generally, but with a deeper median line, the edges green. The dorsal sepal white in the upper part, and streaked crimson at the base.

A plant of Cœlogyne barbata, with six spikes, came from T. A. Gledstanes, Esq., Manor House, Gunnersbury (gr., Mr. Denison).

Fruit Committee.

Present: R. D. Blackmore, Esq., in the chair; and Messrs. J. Lee, P. Crowley, Harrison Weir, C. Ross, J. Willard, W. Denning, W. Warren, J. Wright, T. J. Saltmarsh, A. H. Pearson, G. Wythes, H. Balderson, Sydney Ford, J. Smith, F. Q. Lane, T. F. Rivers, and J. Cheal.

An excellent variety of Spinach, named the improved round-seeded Victoria, with large succulent leaves, and standing frost well, came from Mr. G. Wythes, Sion, who also showed well blanched Cardoons. Mr. T. Beach, Ealing Road, exhibited a quantity of his make of jams and bottled fruits, now getting well known for their goodness. Mr. Deverill, Corn Hill, Banbury, showed, as is his wont at this season, his specially cultivated prodigies of Onions—8 varieties—making a striking exhibit.

Examples of Grape-packing for market were shown by Mr. W. Hazell, West Worthing. There were 12 baskets in all, and 3 varieties, viz., Black Alicante, Muscats, and Gros Colmar, and the quantities ranged from 8 lb. to 15 lb. per basket. The method consisted of putting a shallow basket within a market flat, making it and the bunches themselves secure by passing twine over them.

Mr. C. Ross showed two Smooth Cayenne Pine-apples, in weight respectively 7 lb. 4 oz. and 6 lb. 12 oz. The committee was favourably impressed with a seedling Apple shown by Mr. J. T. Saltmarsh, Chelmsford, and desired to see it again in February. Seedlings and other Apples came from various exhibitors. Mr. J. O'Brien, Harrow-on-the-Hill, sent fruits of a thin-skinned, pale-coloured Jamaica Orange.

Awards were made as follows:—

By the Floral Committee.

First-class Certificate.

To Picea pungens argentea, from Mr. A. Waterer.

Commended.

Patent tree pruner, from Messrs. G. Copping & Sons.

By the Orchid Committee.

First-class Certificates.

To Cypripedium hybridum Pollettianum, from Messrs. F. Sander & Co.

To Cymbidium Tracyanum, provisionally named, from Mr. H. A. Tracy.

To Lælia Goldiana, from T. Statter, Esq.

To Cypripedium Osbornei, from Mr. T. Osborne.

Awards of Merit.

To Cypripedium hybridum Maynardi, from Messrs. F. Sander & Co.

To Lælia Tresederiana, from T. Slatter, Esq.

To Cattleya O'Brieniana, from Messrs. F. Sander.

By the Fruit Committee.

First-class Certificate.

To Grape Lady Hutt, from Mr. T. Myles.

Medals.

Bronze Banksian, to Mr. W. G. Hazell, for twelve dishes of Grapes.

Silver Floral, to Messrs. H. Cannell & Sons, for group of Pelargoniums and Celosia.

Silver Banksian, to Mr. H. B. May, for groups of Primulas.

ROYAL CALEDONIAN.

This Society held its annual meeting on the 4th inst. in Dowell's Rooms, Edinburgh, Mr. D. P. Laird in the chair. In reading the financial statement, the Treasurer, Mr. Neil Fraser showed that the receipts for the year had been £1310 15*s.* 6*d.*, and the expenditure, £1154 16*s.* 10½*d.*, leaving a balance of £155 18*s.* 7½*d.*, to the credit of the Society. The accumulated funds amounted to £1242 6*s.* 6*d.*, showing an increase on the year of £142 9*s.* 5½*d.* Mr. John Methven, in moving the adoption of the accounts, congratulated the Society on the satisfactory state of its finances, said they were fully encouraged thereby to go on with the International Show next year. The accounts were unanimously adopted. The Marquis of Lothian was re-elected President. Treasurer Clapperton was elected Vice-President, in room of Sir Thomas Clark; and Mr. C. W. Cowan, Valleyfield, Penicuick, and Mr. Angus McLeod, City Gardener, were elected members of the Council. Mr. Charles Stuart, W.S., was elected Secretary, in room of his father, deceased.

Mr. William Young, in briefly commenting on the finances of the forthcoming International Show, said they had subscriptions intimated to the amount of £290; they had saved £142 this year, and they expected to save £200 next year, which would bring the fund up to £632 towards meeting the £1200 offered as a prize-list. For the rest, they would depend on the drawings at the door.

HIGHLAND HORTICULTURAL ASSOCIATION.

The first Chrysanthemum show held in the Northern counties of Scotland, was held at Inverness, in one of the Town Halls, on Friday, December 5. It being the first show of the kind held so far North, the managers naturally felt some anxiety as to the amount of support they would receive from those able to exhibit, and from the public; but the result has dispelled their fears and exceeded their expectations, a very creditable show of Chrysanthemum blooms and plants being staged. The hall was not so well filled by the townsfolk in the afternoon as it might have been; but in the evening, when the place was lighted up with Chinese lanterns, and one of the town's bands played, the visitors came in large numbers. A special feature of the show were two boxes containing thirty-six blooms, sent for exhibition by Mr. McHattie, gr., Newbattle Abbey, and Mr. Henderson, gr., Clermiston. Both consisted of fine and beautifully-coloured examples; specially so on the former stand, were Avalanche, Edwin Molyneux, Etoile de Lyon, Album fimbriatum; while, in the latter, W. W. Coles, Etoile de Lyon, Avalanche, and Edwin Molyneux, were unusually good.

The principal competition was in the class for twenty-four blooms, distinct, and for which there were five competitors. The first prize went to Mr. A. Mackie, gr. to J. Fletcher, Esq., Rosehaugh, for a massive well-coloured lot of well-grown blooms (this exhibit was somewhat skied by the arranging committee, and might have been seen to more advantage on the level of the tables; Mr. Mackie should show the names more prominently another time); Mr. Shaw, gr., Belladrum, coming in 2nd; and Messrs. Howden & Co., 3rd.

For twelve Japanese, not less than six varieties, D. Rhind, Moy Hall, was 1st, with a fine symmetrical lot, among which was a grand bloom of Edwin Molyneux flower, the best in the show in the competing classes. J. Methven, Heatherley, was 2nd, with a fine fresh lot, not quite so large as the former.

For four blooms, yellow, Mr. Shaw, Belladrum, was 1st, with good examples.

For four Japanese blooms, Messrs. Howden & Co. were 1st, Madame C. Audiguier in this lot being specially fine.

For four Elaines, Mr. Shaw, Belladrum, led.

In pot-plants there was a good competition, Mr. J. Methven, Heatherley, taking the 1st place in most of the classes with plants remarkably healthy, robust, and well-bloomed, and which were mostly growing in pots smaller than usually used.

Mr. McGavan, Hedgefield, took 1st honours in the class for six Primulas, with well-grown plants, having fine deep crimson-coloured flowers.

A few good collections of Apples were staged; and some good bunches of Grapes came from Ness Castle.

Groups of plants were shown by Mr. W. Baxter, and Mr. Ross, gr., Ness Castle.

Altogether, the show was very creditable as a beginning, and it is to be hoped that next year the committee will be able to count on the necessary support from exhibitors and the public to fill a larger hall, and assure the holding of a Chrysanthemum show at Inverness as an annual affair.

SCOTTISH PRIMULA AND AURICULA.

The annual general meeting of this Society was held on the 4th inst. in 5, St. Andrew Square, Mr. James Greive, Pilrig Nurseries, presiding. Mr. William Straton, Dundee, Secretary and Treasurer, submitted the report for the year. The show, which was held in Dundee this year, was a successful one. The total income of the Society for the year amounted to £41 16*s.* 9*d.*, and the expenditure to £32 9*s.* 11*d.*, showing a credit balance of £14 6*s.* 10*d.* as against a balance of £9 3*s.* last year. Both reports were adopted.

VARIORUM.

Production of Kirschwasser in Switzerland.—The production of kirschwasser in Switzerland is carried on in the cantons that produce the best Cherries, namely, Basle-Campagne, Bern, Aagau, Freyburg, Grisons, St. Gall, Lucerne, Upper Unterwalden, Soleure, Schwytz, Valais, Vaud, Zug, and Zurich—that is to say, in fourteen cantons out of twenty-two. The United States Consul at Lucerne says that the principal distilleries are in the following cantons—Basle, Lucerne, Schwytz, and Zug. The others are small concerns, consisting of one, two, or at most three, stills. The manufacture of kirschwasser is also carried on to a great extent by the farmers. For the distillation of kirschwasser, both black and red Cherries are used, but the former are preferable, as producing a spirit of finer quality, and in greater quantity. There are no special methods of cultivation, the Cherry trees being generally in the same orchards with Apple and Pear

trees; but as this is the first fruit on which the farmers can realise money, they naturally pay great attention to their Cherry trees. The process of manufacture is as follows:—The Cherries are first carefully cleansed, great importance being attached to this point; the stems are then removed, and the fruit packed in very thick wooden casks, and left to ferment for a period of from five to eight weeks, according to the weather, after which it is ready for distillation. In large distilleries the stills contain from 10 to 12 hectolitres (hectolitre = 22 gals.), while in the smaller ones the quantity varies from these figures to half a hectolitre. The large distilleries, with one or two exceptions, make use of indirect steam as a means of heating, the stills being constructed with double bottoms, through which steam passes. The others employ naked fires, the fuel consisting of peat, or the refuse of Cherries and Pears after distillation, which is compressed into bricks and dried. Both methods of heating have numerous advocates, who each claim the superiority of their system. Kirschwasser is placed on the market in litre (1·76 pint) bottles, in carboys containing from 10 to 60 litres, and in casks. The wholesale market value of kirschwasser varies very much, according to good or bad crops, and consequently according to the price of fruit in good seasons, the price of new pure kirschwasser being sometimes as low as two francs per litre, while in bad seasons it is sometimes as high as four francs, the average being about three francs. All distilleries, it is said—even the best, with one exception—adulterate their kirschwasser by the addition of cheap spirit of wine, or spirit of Potatos—which is imported from Germany—according to the price offered by the buyer, the cheaper qualities consisting of about three parts of spirit to one part of kirschwasser. All distillers guarantee the purity if the full market price is paid. It is impossible to state with any accuracy what is the annual production. Different statements put down the average at from 300,000 to 500,000 quintals (quintal = 1·9 cwt.). The principal markets for kirschwasser are North America, South America, and British India. France also imports a considerable proportion of Swiss kirschwasser. *Journal of the Society of Arts.*

Obituary.

WILLIAM HAUGHTON, Barrister, of 9, New Square, Lincoln's Inn, and 81, Holland Road, Kensington, W., died on December 6, at the residence of Thomas Acton, Esq., D.L., Kilmacurragh, Rathdrum, Ireland. Mr. Haughton will be remembered as for some time Treasurer to the Royal Horticultural Society during the stormy times now happily sinking into oblivion, and although many differed from him entirely as to matters of policy, all recognised his honesty of purpose and ability. Mr. Haughton rendered valuable service to the Trustees of the Lindley Library.

The Weather.

THE PAST WEEK.

The following summary record of the weather for the week ending December 6, is furnished from the Meteorological Office:—

"The *weather* has been rather mild over Ireland and Scotland, with overcast skies and a good deal of rain, while in most parts of England the conditions have been cold, very gloomy, and generally dry. In the south-west of England, however, heavy rain fell towards the end of the week.

"The *temperature* has been from 2° to 4° above the mean in Scotland, 2° above in the north of Ireland, and equal to the normal in 'Ireland, S.' In all the English districts it has been below, the deficit having ranged from 1° at the northern stations to 5° in 'England, S.,' and to 6° in 'England, E.,' and the 'Channel Islands.' The sharp frosts reported last week continued over the more southern, south-eastern, and central districts until December 1 or 2, the lowest minima being 13° in 'England, E.,' 17° in the 'Channel Islands,' 18° in the 'Midland Counties,' and 20° in 'England, S.,' and S.W.' In Scotland the lowest readings were recorded on the 6th, and varied from 22° to 29° The highest of the maxima occurred on December 1 in Ireland and Scotland, and ranged from 55° to 58°; but in England, where they were registered on the 4th, they varied between 44° and 51°.

"The *rainfall* has been more than the mean in the last and west of Scotland, the south of Ireland, and the south-west of England, and equal to it in the 'Channel Islands;' in all other districts it has been less than the normal, especially over eastern, central, and southern England.

Bright sunshine has been unusually deficient. In the "Midland Counties," the percentage of the possible duration is less than 1, while in the other districts it ranges from only 2 in 'England, N.E.,' and 3 in 'England, N.W.,' to 8 in 'England, S., 16 in 'Ireland, N.,' and 20 in the 'Channel Islands.'"

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending December 6.	Accumulated. Above 42° for the Week.	Accumulated. Below 42°, for the Week.	Accumulated. Above 42°, difference from Mean since Jan. 1, 1890.	Accumulated. Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1890.	Rainfall. Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg	Day-deg.	Day-deg.	10ths Inch.		In.		
1	2 +	10	22	+ 221	— 121	7 —	251	53.9	11	24
2	4 +	8	20	+ 60	— 85	1 +	208	32.2	6	29
3	1 —	2	28	+ 167	— 123	2 —	181	24.1	2	29
4	6 —	0	39	+ 68	— 41	5 —	175	22.7	5	37
5	3 —	0	41	+ 18	— 51	7 —	173	21.8	0	32
6	5 —	0	40	+ 73	— 74	5 —	170	24.5	8	35
7	3 +	17	9	+ 118	— 142	3 +	214	52.3	6	30
8	1 —	4	25	+ 157	— 117	3 —	201	34.5	3	29
9	3 —	4	27	— 14	+ 16	1 +	207	35.8	5	35
10	2 +	20	8	+ 148	— 126	2 —	234	37.0	16	29
11	0 av.	21	8	+ 159	— 57	5 +	217	39.0	5	32
12	6 —	8	25	+ 86	+ 13	0 av.	203	31.4	20	42

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

Markets.

COVENT GARDEN, December 11.

Market quiet. Supplies generally good. Prices unaltered. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	3 6-	7 0	Lemons, per case	20 0-	40 0
— Nova Scotia, brl.	15 0-	25 0	Melons, each	0 6-	2 0
Cobs, Kent, 100 lb.	65 0-	70 0	Pine-apples, St. Michael, each	2 0-	6 0
Grapes, lb.	0 9-	3 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, each	0 4-	0 6	Lettuces, per dozen	1 6-	...
Beans, French, lb.	1 0-	...	Mushrooms, punnet	2 0-	...
Beet, red, per dozen	2 0-	3 0	Mustard and Cress, punnet	0 4-	...
Carrots, per bunch	0 6-	...	Parsley, per bunch	0 4-	...
Cauliflowers, each	0 4-	0 6	Shallots, per lb.	0 6-	...
Celery, per bundle	1 6-	2 6	Spinach, per bushel	3 0-	...
Cucumbers, each	0 4-	0 6	Tomatos, per lb.	0 9-	1 0
Endive, per dozen	2 0-	...	Turnips, per bunch	0 4-	...
Herbs, per bunch	0 4-	...			

POTATOS.—Supply since last report has increased, but demand is quite equal to such supply at last week's quotation. Market firm. *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	18 0	Evergreens, in var., per dozen	6 0-	24 0
Aspidistra, doz.	18 0-	42 0	Ericas, various, doz.	8 0-	18 0
— speci. plants, each	7 6-	10 6	Ferns, in var., per dozen	4 0-	18 0
Bouvardias, p. doz.	9 0-	18 0	Ficus elastica, each	1 6-	7 0
Chrsanthem., p. doz.	4 0-	18 0	Foliage plants, various, each	2 0-	10 0
— specimen plants, each	2 6-	5 0	Hydrangeas, doz.	9 0-	18 0
Cyclamens, dozen	9 0-	18 0	Marguerites, doz.	6 0-	12 0
Cyperus, per dozen	4 0-	12 0	Mignonette, per doz.	4 0-	6 0
Dracæna terminalis, per dozen	30 0-	60 0	Palms in variety, each	2 6-	21 0
— viridis, per doz.	12 0	24 0	Poinsettias, dozen	9 0-	15 0
Euonymus, in var., per dozen	6 0-	18 0	Solanums, per doz.	9 0-	15 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0-	4 0	Mignonette, 12 bun.	2 0-	4 0
Bouvardias, per bun.	0 6-	1 0	Pelargoniums, scarlet, 12 spr.	0 4-	0 6
Callæthiopica, 12 bl.	4 0-	8 0	— dozen sprays	1 0-	1 6
Carnations, 12 blms.	1 0-	2 0	Poinsettias, 12 blms.	4 0-	8 0
Chrysanth., 12 bun.	3 0-	9 0	Primulas, double, 12 sprays	0 6-	1 0
— 12 blooms	1 0-	3 0	Roses, Tea, per doz.	0 6-	2 0
Cyclamens, per doz.	0 3-	0 6	— coloured, dozen	3 0-	5 0
Eucharis, per dozen	3 0-	6 0	— red, per dozen	1 0-	2 0
Gardenias, 12 blooms	4 0-	9 0	— Safrano, French, per box of 100	3 0-	6 0
Heliotropes, 12 spr.	0 6-	1 0	— ditto, per dozen	1 0-	2 0
Hyacinths, Rom., 12 sprays	1 0-	1 6	Stephanotis, per 12 sprays	4 0-	6 0
Lilium, var., 12 bl.	2 0-	6 0	Tuberoses, 12 blms.	0 6-	0 9
Maiden Hair Fern, 12 bunches	4 0-	9 0	Violets, 12 bun.	1 0-	2 0
Marguerites, 12 bun.	3 0-	6 0	— Parme, Fr., bun.	2 6-	3 6
Narcissus (paper white), 12 sprays	1 0-	1 6	— dark, Fr., bun	1 6-	2 6
— French, 12 bun.	4 0-	9 0			

ORCHID-BLOOM in variety.

CORN.

Averages.*—Official statement of the average prices of British corn, imperial measure, for the week ending December 6, and for the corresponding period in last year:—1890: Wheat, 32*s.* 3*d.*; Barley, 26*s.* 9*d.*; Oats, 17*s.* 10*d.* 1889: Wheat, 32*s.* 2*d.*; Barley, 32*s.* 2*d.*; Oats, 17*s.* 7*d.

FRUIT AND VEGETABLES.

STRATFORD: *December* 9.—There has been an excellent supply of all kinds of produce at this market during the past week, and with a good attendance of buyers, a brisk trade was done at the undermentioned prices:—Cabbages, 2*s.* to 3*s.* 6*d.* per tally; Savoys, 3*s.* to 5*s.* do.; Cauliflowers, 5*s.* to 6*s.* do.; Turnips, 30*s.* to 40*s.* per ton; Carrots, household, 35*s.* to 45*s.* do.; do. 2*s.* to 3*s.* per dozen bunches; do., cattle-feeding, 26*s.* to 32*s.* per ton; Parsnips, 2*s.* 9*d.* to 3*s.* per cwt.; Mangels, 17*s.* to 18*s.* per ton; Swedes, 18*s.* to 20*s.* do.; Onions, English, 4*s.* 6*d.* to 5*s.* per cwt.; do. Dutch, 3*s.* to 4*s.* 6*d.* per bag; Apples, English, 3*s.* to 7*s.* per bushel; Dutch do., 14*s.* to 16*s.* per barrel; Celery, 6*s.* to 12*s.* per dozen bundles; Watercress, 8*d.* per dozen.

POTATOS.

BOROUGH AND SPITALFIELDS: *Dec.* 9.—Quotations:—Hebrons, 60*s.* to 100*s.*; Magnums, 55*s.* to 65*s.*; Scotch, 90*s.* to 120*s.*; Imperators, 65*s.* to 90*s.* per ton.

SPITALFIELDS: *Dec.* 10.—Quotations:—Magnums, 50*s.* to 75*s.*; Regents, 60*s.* to 90*s.*; Champions, 55*s.* to 60*s.*; Imperators, 60*s.* to 80*s.*; Hebrons, 60*s.* to 70*s.*; Victorias, 60*s.* to 75*s.*; Early Rose, 60*s.* to 65*s.* per ton.

STRATFORD: *Dec.* 9.—Quotations:—Magnums, light, 60*s.* to 75*s.*; do., dark, 55*s.* to 65*s.*; Hebrons, 70*s.* to 80*s.*; Imperators, 55*s.* to 70*s.* per ton.

Enquiries.

"He that questioneth much shall learn much."—BACON.

TEA ROSES UNDER GLASS.—Being anxious to erect an inexpensive span for growing Tea Roses, I beg you will kindly give me the opportunity of ascertaining, through the medium of your widely-read paper, the advice and experience of successful growers of Roses under glass. What is the best kind of house? I lean myself towards a long low span. Should it be constructed, in any case, so that the roof can be taken off in summer, to ripen the wood made during spring? Should the Roses be planted out, or grown in pots? What width should the house be? Should the pipes run up and down the path, or should a flow run up along the top of the bed (or stage) close to the glass, as in the case of houses devoted to flowering zonal Pelargoniums in winter? or would the nearness of the pipes to the

Roses tend to produce spider or thrips? What should the temperature and atmospheric condition be? Should the house have glass sides, with lights to open for air? or should the roof rest on the brick wall without side ventilation? Would a 9-feet wide house do? Knowing of many failures in growing Roses under glass, often owing to improperly constructed houses, I should be very grateful for as full advice and help as some of your experienced readers are able to give me. *L. B.*

QUININE CULTURE.—Noticing in your paper an article on quinine a few weeks ago, that quinine has risen, and that it is manufactured by the new fusel-oil process, I want to know whether it would pay to buy a Cinchona plantation in Bolivia, and take the articles out there necessary for the manufacture of quinine by this new oil process, and to manufacture it on the spot? Also, could you inform me the exact price of quinine at the present time, and where I could procure a small article on the fusel-oil process? and, further, what would be the annual income derived, with expenses, from extracting quinine by fifty men, Cinchona trees unlimited? *Quito.*

NOTICES TO CORRESPONDENTS.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

BOOKS: *E. J. Artificial Manures,* by M. Ville. (Longmans, London).—*B. P.* No work exists specially treating of indoor nursery work. The same principles that underlie all gardening work are equally applicable in nurseries, of course, having a close regard to the cheapest methods of raising good saleable stock. The various Manuals by the late B. S. Williams, Victoria Nurseries, Holloway, would afford valuable help.

CARNATIONS: *W. J.* Your specimen is attacked by the fungus you suspect. We know of no certain remedy other than burning the diseased plants.

CHRYSANTHEMUMS RAISED IN THIS COUNTRY: *G. H. M.* Seeds of Chinese and Japan Chrysanthemums do not ripen in this country; where plants have been raised, the seeds were of foreign growth. Most novelties come from France, some from Japan, and recently from the United States of America.

CROSS AND HYBRID: *Obligato.* A cross is the result of the mixture of two varieties; a hybrid results from the admixture of two species. The only difference is one of degree, and no definite line of demarcation can be fixed except by arbitrary convention.

CUT BLOOMS: *J. D.* To preserve these in a fresh state to the longest date possible, cut the blooms before they fully expand, and put them in water with powdered charcoal. To revive them afterwards, cut off a little of the base of the stalks, and place them in hot water—not sufficiently hot to scald. A pinch of common salt put in the water has a revivifying effect on the blooms.

DOUBLE GORSE, AUCUBA, BUPLEURUM FRUTICOSUM, ROSEMARY, LAURESTINUS, PHLOX DECUSSATA. *Anton.* It is at this season somewhat late to put in cuttings of these plants; it is better done early in October in sand or sandy soil, under hand-glasses, behind a north or west wall; the former being better, as no shading is then necessary. Keep the glasses close, unless damp is troublesome, and keep a watch on moles and mice, which often burrow under such soft, moist soil, throwing out the cuttings. Give water when it is needed, and throw a mat over the glass in hard weather.

FRUIT-ROOM FOR APPLES: *C. J.* The worst place for keeping Apples is the fruit-room with full light, little ventilation, and fitted with deal shelves. We will give you an idea of a fruit-chamber that will keep fruit sound till the latest period to which it may be kept. It should be partly underground, or wholly so; that will secure uniformity of temperature of, say, 38°—40°. The roof should be a thatch of reeds, or straw, laid over ordinary battens; but, failing these materials, use tiles with match-boards laid close together on the underside of the rafters, and if tarred felt can be fixed between the tiles and the matchboarding, there will be but trifling variations of temperature in the room. There should be some means of lighting the place, either with double windows at each end or skylights, which should be fitted with thick wooden shutters. The walls should be separated from the soil by a narrow area, say, of 1 foot wide, which may be covered over partially. The floor may be made of cement—it keeps out damp better than anything else. For storing the fruit, use narrow batten shelves, and do not use deal of any kind for this purpose. The width of the shelves should be 2½ feet, and they should have a slight slope towards the front—it makes inspection of the fruit more easy. There should be means afforded, either by the windows or otherwise, of giving thorough ventilation; and so long as moisture is condensed on the fruit, ventilation is necessary, but not at other times. It is better if the room be fitted with double doors, separated from each other by a space of 2 or 3 feet—a porch, in fact. Common fruit may be laid on the floor or shelves four or five layers deep; but large fruit, and dessert fruit in particular, should be laid on the shelves in a single layer. If Pears are kept in such a fruit-room, those required for use should be placed in a warm cupboard a week before they are wanted, the flavour being much improved thereby. Always handle fruits as you would eggs—there will then be less premature loss in store.

FUNGI: *Samuel Ray.* Ag. (Clitocybe) dealbatus, Fr., Ag. (Clitocybe) ditopus, Fr., the small dark ones. *M. C. M.*

GLASTONBURY THORN: *E. P.* Cratægus oxyacantha variety. Try Wheeler, Gloucester.

HONEYSUCKLE: *L. G. P.* The cuttings may be made from the end of September to January, but the earlier cuttings give the best proportion of plants. Make them as you would Rose cuttings—that is 9 inches to 1 foot long, from the ripened shoots of the current year. Put them into slits made in the soil with a spade, and let not more than one-third of their length show above ground. The cuttings should root in one year. A slip with the heel attached is better than a cutting.

NAMES OF PLANTS: *Watson, Belfast.* Hæmanthus natalensis.—*A. P. C.* Send flowers. Impossible to name such things from dried leaves.—*H. H.* Bulbophyllum (Dendrobium) amplum.—*J. Price.* Lælia autumnalis. They are both very fine and distinct forms, but as to the varietal name we are unable to say.—*C. F. W.* Probably Mr. William Holmes; but we are enveloped in fog at the present time, so that the true colours of the flower are not to be distinguished.

NAMES OF FRUIT:—*J. H.* 1, Rhambour; 2, Scorpion; 3, Northern Greening; 4, not recognised; 5, Stone Pippin.—*H. E. W.* 1, Beurré Diel; 2, not recognised.—*Acklam.* 1, Lewis's Incomparable; 3, Old Pomeroy; 4, Northern Greening; 6, Blenheim Orange. Others not recognised.

ODONTOGLOSSUM SCHILLERIANUM: *T. F.* It is distinct, rare, and valuable.

SPECIES OF CHRYSANTHEMUM: *G. H. M.* About 60.

STUDENT IN BOTANY: *Student.* Obtain entrance to some botanical garden in Glasgow, Edinburgh, or Dublin for a time, and then to the Royal Gardens, Kew. Make written applications to the Curators of the first three, and to the Director of the last named. You will learn when examinations are held, &c.

TINTING GRASS PLUMES: *W. G.* We do not know the maker's methods of dying the plumes, but you might be able to succeed by using Judson's dyes.

CATALOGUES RECEIVED.

HARDY BRUIN & Co., Leicester — Horticultural Buildings, &c.

ERNEST BENARY, Erfurt—Seeds (Trade List).

J. CARTER & Co., 237 and 238, High Holborn, London, W.C.—Seed List.

HOGG & WOOD, Coldstream and Duns, N.B.—Nursery Stock.

COMMUNICATIONS RECEIVED.—Gusmus—C. J. (many thanks for your encouraging note).—H. F., Geneva.—G. F. S. E.—W. F. & Co.—H. J. V. (letter will follow.)—Prof. Max. Cornu, Paris.—E. M.—C. de K., Ghent.—E. W. B.—P. S. B.—O. F., Lehenhoff.—D. T. F. (many thanks.)—Prof. Drude, Dresden.—J. D. S., Baltimore, U.S.A.—W. G. H.—Prof. Soraner, Priskan.—J. M. Rowland (we will try to keep the plants alive, and report in due time).—W. Sowerby.—J. P. B.—J. C. & Co.—E. W. & Sons.—J. Chalmers.—T. C.—J. S.—J. H.—W. N.—A. D.—W. A. C.—T. A.—J. J. S. (send flowers).—F. L. (shortly).—L. L.

CHRYSANTHEMUM SEASON.

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More prizes have been obtained through the use of this Manure by Chrysanthemum exhibitors than by any other Fertilizer.

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It is a clean and dry Powder, with very little smell.

It is consequently particularly adaptable for Amateurs, equally with Nurserymen.

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" Fareham.

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(Signed) W. & G. DROVER.

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RHODODENDRON PEAT, of fine quality; COCOA-NUT FIBRE REFUSE; BONE MANURES, the finest quality ground, Meal, ¼ to ½ inch; MUSHROOM SPAWN, TOBACCO-PAPER, RAFFIA and NEW ARCHANGEL MATS, CAMPBELL'S NEW FUMIGATING INSECTICIDE, and all other Garden Requisites of the best quality.

G. H. RICHARDS, Horticultural Sundriesman, 1, Belvedere Crescent, Lambeth, London, S.E. Chief Peat Dépôt, Ringwood, Hants.

TOBACCO-PAPER, genuine roll, 9*d.* per lb.; 14 lb., 10*s.*; do., cloth, 10*d.* per lb.; 14 lb., 11*s.*; 28 lb. carriage paid.—T. HAMBLY, 85, Kingsdown Parade, Bristol.

GENUINE GARDEN REQUISITES, as supplied to the Royal Gardens.

RUSSIA MATS—New Archangel, 9 ft. 4 ins. by 4 ft. 6 ins., 22*s.* doz.; Heavy Petersburg, 7 ft. by 3 ft. 8 ins., 12*s.* doz. SPECIALITE TOBACCO PAPER, 10*d.* per lb., 28 lb. for 21*s.* TOBACCO CLOTH, 1*s.* per lb., 28 lb. for 26*s.* ORCHID PEAT, 8*s.* per sack. PEAT, LOAM, SAND, MANURES, and SUNDRIES. Price List free. — W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

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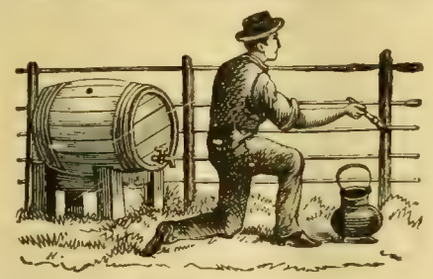
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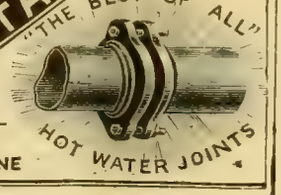
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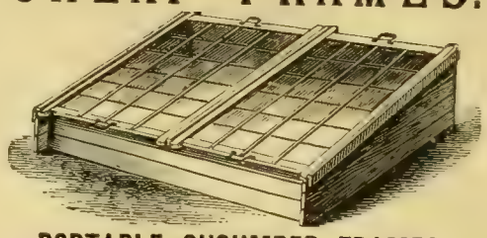
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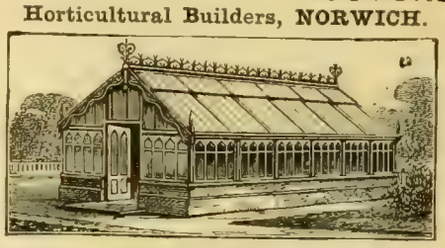
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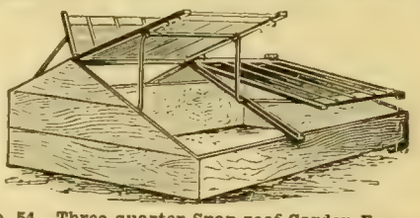
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9	,,	..	0	5	6	20	,,	..	0	11	0
10	,,	..	0	6	0	21	,,	..	0	11	6
11	,,	..	0	6	6	22	,,	..	0	12	0
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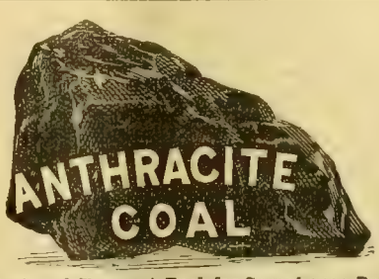
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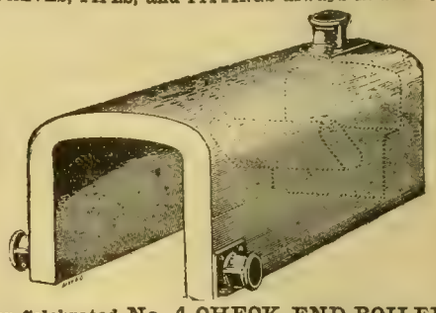
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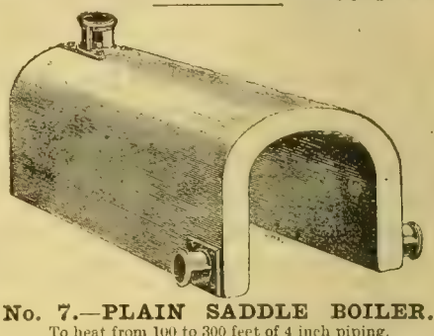
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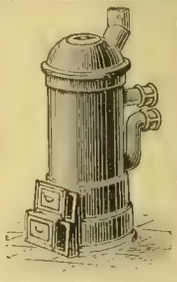


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W. C. CRIPPS, Town Clerk.

Town Hall, Tunbridge Wells.

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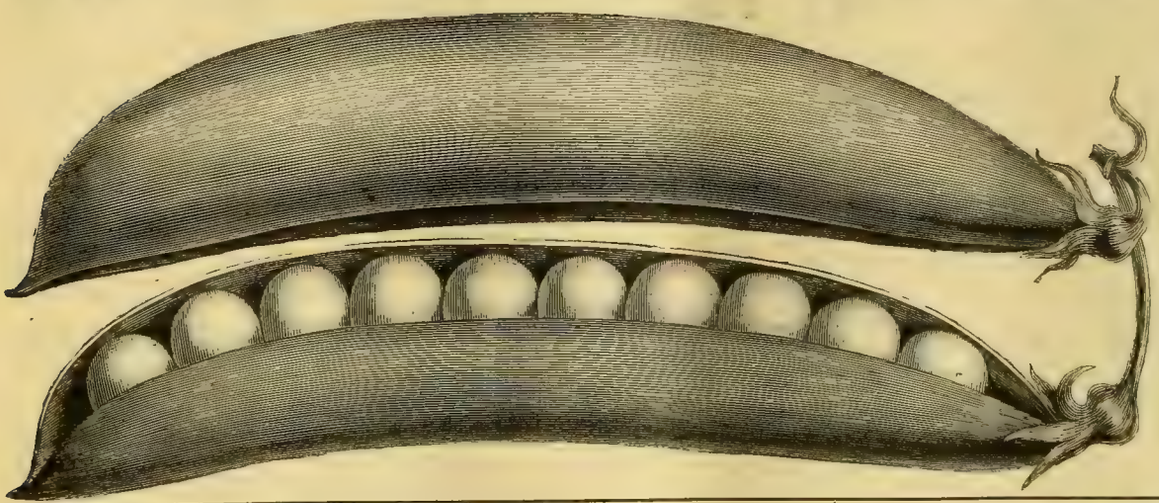
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CARTERS' NOVELTIES for 1891.



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This exceedingly prolific main-crop Pea was raised by Mr. Marriott, a well-known exhibitor of Peas, from whom we have purchased the entire stock. It grows to an average height of 6 feet, and produces an abundance of handsome, well-filled, and extremely lengthy pods, the Peas being of very fine quality. It is very superior to the Supreme type, and should rapidly become popular both as a market Pea and for garden use.

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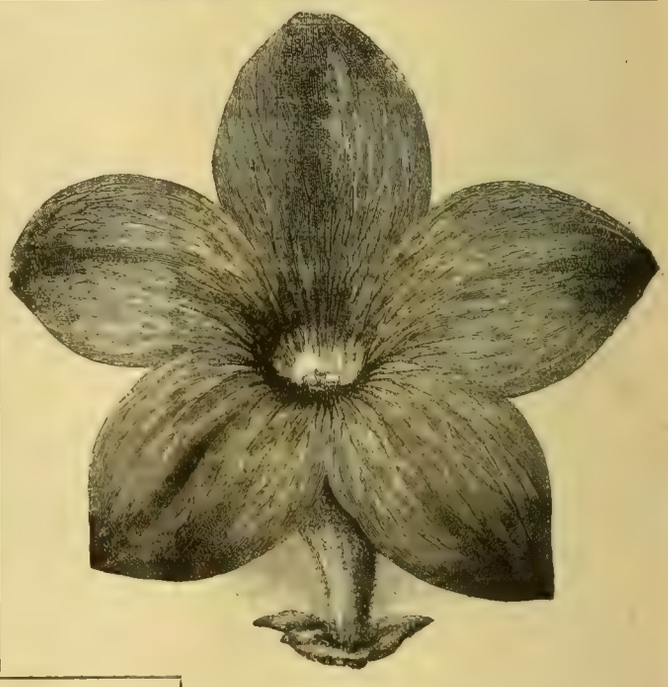
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C. Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co. (Limited), Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, Dec. 13, 1890. Agent for Manchester—JOHN HEYWOOD.

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NOTICE TO ADVERTISERS.—

It is particularly requested that all Advertisements intended for next week's issue, should reach this Office not later than TUESDAY MORNING *next.*

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On view morning of Sale, and Catalogues had.

Tuesday Next.

LILIES, ROSES, and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, December 23, at half-past 12 o'Clock, 10,000 LILIUM AURATUM, splendid Bulbs, just received from Japan; 12,000 double African TUBEROSES, an assortment of Hardy English-grown LILIES and BULBS, CALOCHORTI, GREENHOUSE PLANTS and FERNS from an English Nursery, PALMS for Christmas Decoration, PAMPAS-GRASS, 200 Dwarf ROSES, &c.

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MESSRS. PROTHEROE AND MORRIS desire to announce that FRIDAY NEXT being Bank Holiday, there will be NO ORCHID SALE at their Rooms on that day. The NEXT ORCHID SALE will TAKE PLACE on JANUARY 2, 1891.

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,, WORLEYII, 12 to 14 feet.
ASH, Mountain, 12 to 14 feet.
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BIRCH, Silver, 12 to 14 feet.
CERASUS SEROTINA, 12 to 14 feet.
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,, ,, Double White, 10 to 16 feet.
,, ,, Scarlet, 12 to 18 feet.
,, Spanish, 12 feet.
ELMS, English, 10 to 12 feet.
,, Guernsey, 10 to 12 feet.
LIMES, 12 to 16, and 20 feet.
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,, Silver-leaved, 10 to 14 feet.
LIQUIDAMBER, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 10 to 14 feet.
,, Scarlet American, 12 to 14 feet.
PLANES, 12 to 16 feet.
POPLAR CANADENSIS NOVA (the true variety), 12 to [16 feet.
SYCAMORE, Common, 14 to 16 feet.
,, Purple, 14 to 16 feet.
THORNS, Double Scarlet, 8 to 10 feet.
,, White, 8 to 10 feet.
TULIP TREES, 10 feet.
WALNUTS, Common, 10 to 12 feet.

WEEPING TREES.

BEECH, Weeping, Pyramids, and Standards, 8 to 12 feet.
,, Weeping, Purple, Pyramids, and Standards, 7 to 12 feet.
BIRCH, Young's Weeping, Pyramids, and Standards, 8 to
,, Cut-leaved Weeping, 10 to 12 feet. [14 feet.
ELMS, Weeping, Pyramids, and Standards, 7 to 14 feet.
LARCH, Weeping. Pyramids, 6 to 10 feet.
POPLAR, Weeping, Pyramids, and Standards, 10 to 12 feet.

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ASPARAGUS, 5-yrs. old for forcing, grand roots, 7s. 6d. per 100; 3-yrs. old for planting, 25s. per 1000. Cash with order. My Asparagus always makes top price at Covent Garden.

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ASH, 2 to 3 and 3 to 4 feet.
BIRCH, 2 to 3 and 3 to 4 feet.
LARCH FIRS, 2 to 3 and 3 to 4 feet.
SPRUCE FIRS, 1½ to 2 and 2 to 2½ feet.
SCOTCH FIRS, 1½ to 2 feet.
OAKS, English, 2 to 3 and 3 to 4 feet.
PINUS AUSTRIACA, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
,, LARICIO, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
SYCAMORE, 2 to 3 and 3 to 4 feet.

Plants for Fox and Game Coverts, Hedges, &c.

BERBERIS AQUIFOLIA, 1 to 1½ and 1½ to 2 feet.
BLACKTHORN, 1½ to 2 and 2 to 3 feet.
COTONEASTER SIMMONSII, 1½ to 2 and 2 to 3 feet.
DOGWOOD, Red, 2 to 3 feet.
HAZEL, 2 to 3 and 3 to 4 feet.
HORNBEAM, 2 to 3 feet.
LAUREL, common, 2 to 3 and 3 to 4 feet.
,, caucasica, 2 to 3 and 3 to 4 feet.
,, rotundifolia, 2 to 3 and 3 to 4 feet.
,, Portugal, 1½ to 2 and 2 to 3 feet.
LAURESTINUS, 1½ to 2 and 2 to 3 feet.
PRIVET, Evergreen, 2 to 3 and 3 to 4 feet.
PRUNUS MYROBALANA, 1½ to 2 and 2 to 3 feet.
ST. JOHN'S WORT, strong transplanted.
SNOWBERRY, 2 to 3, and 3 to 4 feet.
THUJA LOBBII, 2 to 3, and 3 to 4 feet.
English YEWS, 1½ to 2, 2 to 3, and 3 to 4 feet.
QUICK or WHITETHORN, strong, and extra-strong, transplanted; &c., &c.

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ASH, common, 2 to 3, 3 to 4, and 4 to 5 feet.
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FIR, Larch, 1½ to 2, 2 to 3, and 3 to 4 feet.
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HAZEL, 2 to 3, and 3 to 4 feet.
HORNBEAM, 2 to 3, and 3 to 4 feet.
LABURNUMS, 5 to 6, and 6 to 8 feet.
LIMES, 6 to 8, 8 to 10, and 10 to 12 feet.
PINUS AUSTRIACA, 1½ to 2, and 2 to 3 feet.
,, LARICIO, 1½ to 2 feet.
POPLARS, Black Italian, fine, 10 to 12 feet.
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PRIVET, Evergreen, fine, 2 to 3, and 3 to 4 feet.
PRUNUS MYROBALANA, 2 to 3 feet.
SWEET BRIAR, 2 to 3, and 3 to 4 feet.
SYCAMORE, common, 3 to 4, and 4 to 5 feet.
WHITETHORN or QUICK, the largest stock in Great Britain.
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BOX, broad leaf green, 1 to 2 feet.
COTONEASTER SIMMONDSII, 3 to 4 feet.
LAURELS, Caucasica, 1½ to 2, 2 to 2½, and 3 to 4 feet.
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THUJA Lobbii, 4 to 5 feet.
YEWS, English, the largest stock in Great Britain.
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No Hot Fuel required.

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SAVE HALF THE COST.

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Is safe, certain, free from unpleasant smell, and easily used. Try it, and see the difference. Hundreds of testimonials. In rolls, post-free, for houses having a capacity of 100 cubic feet, 8*d.*; 500 cubic feet, 1*s.*; 1000 cubic feet, 1*s.* 3*d.*; 2000 cubic feet, 2*s.* 3*d.*; 3000 cubic feet, 2*s.* 9*d.*; 4000 cubic feet, 3*s.* 3*d.*

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Liquid Insecticide is LEMON OIL. Post-free, pints, 1*s.* 10*d.*; quarts, 3*s.* 3*d.*; half-gallons, 5*s.* 9*d.*

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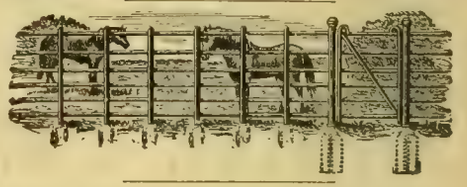
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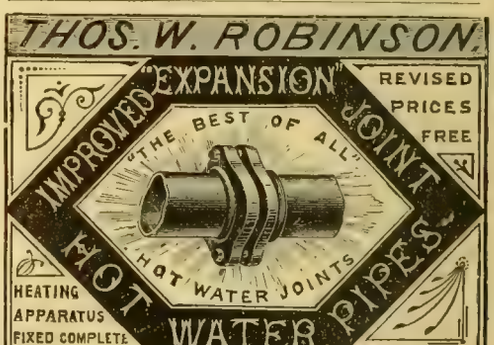
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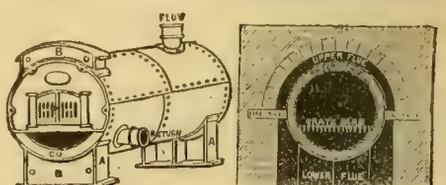
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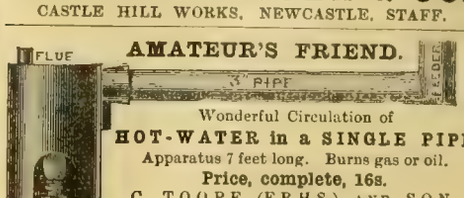
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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 20, 1890.

ROSE SPORTS.

I AM not going to deal with this subject in any scientific way, inasmuch as I know nothing about it (which is a confession, perhaps, some scientists will also make). It is defined by some as a bud—or seed—variation, and it is with the former of these I have now practically to deal. It is one of considerable interest to the gardener, and we all know how frequently it occurs in Chrysanthemums, whilst we have many instances of it amongst Roses.

There are two ways in which this variation occurs in the Rose—(1), in a change in the habit of its growth; (2), in a change in the colour of the flower. We have many instances of what are called climbing varieties of many of our Roses, the most notable of these being perhaps climbing Devoniensis, and climbing Niphetos. We have also Victor Verdier, Captain Christy, Charles Lefebvre, and others, which have developed the same tendency. The why or wherefore I have never yet heard explained. Take, for example, Devoniensis, in its normal condition a very small and even delicate grower, there appeared many years ago with Mr. Pavitt, of Bath, a very vigorous shoot, which shot away to a length of 16 or 18 feet in one season. This was so very remarkable, that he determined to propagate it; it has remained true to its character, and makes shoots sometimes of 20 feet in a season. At the same time, there is no deterioration in the flowers, which are so like those of the type that the National Rose Society has bracketed them together. Another instance of a similar character has occurred recently in climbing Niphetos brought out two years ago by Messrs. Keynes, Williams & Co., the noted Salisbury firm; this, like that previously mentioned, will sometimes grow 20 feet in a season, although as it is well known, the plant itself is a dwarf Tea, but of more vigorous constitution than Devoniensis. I do not at all know how this is to be explained. Climbing, of

course, in the true sense of the word, they are not, but why these particular plants should have so acted is a puzzle. [Possibly from atavism, or reappearance of some ancestral condition. Ed.]

Amongst the hybrid perpetuals we have also several so-called climbers, but they do not attain to the same vigour of growth as the Teas mentioned, still they will make shoots sufficiently long to make them good pillar Roses, such are Captain Christy, Bessie Johnson, Charles Lefebvre, and Victor Verdier, but I have not seen on any of these as good flowers as could be gathered from dwarfs of the same variety; this may not be the experience of others, but it certainly is mine. They make very effective pillar Roses, and when these are required, it is better to use them than hardy summer-blooming Roses.

But the most frequent and most interesting cases of sporting are those which occur in the flower; they are continually taking place, and perhaps in more cases than we are aware of. The usual procedure is this: a branch of some particular variety shows a bloom of a different shade of colour; buds are taken from this branch; the budded or grafted plants are carefully watched to see whether the sport is what is called fixed, *i.e.*, whether the blooms produced on plants budded from the original one will show flowers of the same form and colour; sometimes they do not, and at other times they remain true. A neighbour of mine got on one of his plants of Anna Olivier a very beautiful orange-yellow flower. As the Rose stands A1 in its form and substance, it need hardly be said that a flower like it, but of this colour, would have been a great acquisition; it was placed in the hands of one of our most eminent Rose growers, who gave it a fair trial; but, alas, the plant reverted to the type, and the hopes raised on it have been disappointed.

I have noticed that very often on these sports there is some deterioration in the substance of the flower, as in the case of White Baroness, which is not nearly so full as the Rose from which it has originated; while in another flower of the same origin we have an entirely different build, as Merveille de Lyon, it is more open, and not such large petals, has a great tendency to show the eye. I once thought I had obtained a white Catherine Mermet, that was before The Bride was introduced, but it did not remain true. Some Roses are much more inclined to sport than others, Baroness Rothschild is one, and Madame Clemence Joigneaux another; from the former we have had Mabel Morrison, White Baroness, Merveille de Lyon, and, perhaps, Puritan; from the latter, Pride of Reigate, and William Warden. In the case of the sports from the Baroness, they are all in the direction of white flowers, the pale tinge in the type being eliminated; the sports from the latter are curious, one is a striped flower, not only of no beauty, but I think of positive ugliness, and William Warden is of a very delicate shade of pink, but cannot be depended upon, as it is constantly receding to the original colour.

Lady Mary Fitzwilliam has given us the sport of Lady Alice, but its distinctness is, in many cases, very questionable. I have seen them distinct, but I have also seen them so alike that they might have been exhibited under either name.

There is one unpleasant thing connected with these sports, and that is, you can never be sure that they will not hark back again, thus there can be no more distinct sport than that remarkable Rose, Sir Rowland Hill, a sport from Charles Lefebvre, of the most taking deep claret colour, but in one instance I heard of this year it had reverted to the type, and was a veritable Charles Lefebvre. I do not, however, think that this is any proof against the fixity of the sport, but where this is general, where there is no certainty of what character the bloom may be, there one may reasonably question whether the sport is worthy of relation in a separate form. If, let us suppose, in half a dozen plants of any variety, five were to revert to the type, then it would be valueless. It is quite possible, too, that soil, and situation, and stock may all have influences of which we may be ignorant, and so, in many cases, lead to disappointment. I was this year acting as judge at a northern show; we had to judge some stands of 48's, and in one of them there appeared, under different names, two Roses which certainly bore a most remarkable resemblance to one another; they had different names, and as the judging had not commenced, it was permissible, according to the rules of the National Rose Society, with which this Society was affiliated, to call on the exhibitor to take one away. He was accordingly sent for; he protested that he exhibited them under the names they bore, and that they were not duplicates. This satisfied me, but not my fellow judge. In vain I told him this had not been bracketed amongst the "too much alike" Roses, and that therefore the exhibitor had a perfect right to put them up. Nothing would satisfy him, and before we judged the stands this had to be altered. I think I was right, but it only shows the difficulties that may arise from these sports. I think it would have been a monstrous thing to say that the person who sent out the sport had acted improperly, as he had grown and tested it. It bore out the character he gave it, and this was only another instance of the vagaries of sports. By-the-bye, is Princess of Wales a sport from Comtesse de Nadaillac?

Here are some cases, then, in which the sport is quite equal in beauty to its parent, such as in the case of The Bride, and some in which it is, I think, inferior, as in Pride of Reigate, but I know of no case in which it surpasses the parent in beauty. *Wild Rose.*

New or Noteworthy Plants.

Cypripedium × Antigone, *n. hyb.**

This, the reversed cross of C. × Aphrodite, Veitch, is a beautiful hybrid, raised from C. Lawrenceanum, fertilised with the pollen of C. niveum. It was exhibited by Messrs. James Veitch & Sons, at a meeting of the Royal Horticultural Society, on November 11 last, when it was awarded a First-class Certificate. It is a stronger plant altogether than C. × Aphrodite; in fact, each seems to have taken the character of the seed parents respectively, so far as vigour of growth is concerned. In C. × Antigone both leaves and flowers are very handsome. The former are yellow-green, with numerous reticulated dark green veins, and some irregular blotches of the same colour, which suggest small pieces of some fossil Selaginella on a slab more than anything else I can think of. The flowers are white, variously nerved and veined with light purple in a most pleasing manner. They are well intermediate in shape, but the petals and lip bear a strong resemblance to those of C. niveum, while the colour of the same parent also largely preponderates. It is a most promising acquisition, and Mr. Seden must be congratulated on having raised so fine a thing. *R. A. Rolfe.*

Cypripedium × Doris, *n. hyb.*†

This is another pretty hybrid raised by Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne, from Cypripedium venustum, fertilised with the pollen of C. Stonei. It was exhibited at the meeting of the Royal Horticultural Society on Nov. 11, when it received an Award of Merit. It is strongly stamped with the character of C. venustum in almost every part, the influence of the pollen parent being far less apparent than in C. × Morganiæ, C. × euryandrum, or C. × Numa, in which it played a similar part, the seed-parent in each case being a species with tesselated leaves. C. Stonei and its allies, with racemose flowers and elongated petals, almost invariably lend more or less of this character to the hybrids in whose parentage they participate. So much in this case is the influence of C. Stonei swamped, that I at first thought of C. Argus and C. Morganiæ as possible parents, but Mr. Cookson tells me that his book is so carefully kept that the parentage given may be absolutely relied on. Also that a second plant from the same seed-pod showed more of the Stonei influence generally, and particularly in having longer, narrow, and more drooping petals, with a slight inclination to twist. We may, therefore, dismiss the idea of any mistake. It only shows the importance of a pedigree-book being carefully kept in all cases, and too much praise cannot be given to those who carefully attend to this important matter. *R. A. Rolfe.*

Lælia anceps Thomsoniana, *n. var.*‡

The largest, best-shaped and finest coloured variety of Lælia anceps I ever saw, comes to me in the form of a fine inflorescence, from W. J. Thomson, Esq., Ghyllbank, St. Helens, Lancashire. It has some resemblance to L. a. Amesiana, especially in the contrast between the rich dark colouring of the labellum to the delicate blush-rose tint of the lower or inner halves of its sepals and petals; but in all its parts Mr. Thomson's variety is larger.

The variety certainly merits recording, as before it many other named varieties sink into comparative insignificance. *James O'Brien.*

Cyclamens.

So great is the enthusiasm, or perhaps it will be better to say sentimentality, with which Chrysanthemums are regarded in the late months of the year, that we are apt to forget some other good winter flowers which have served us well. We should find our greenhouses often looking very dull indeed during the winter were there no Chinese Primroses or Cyclamen. Perhaps the former class of plants enjoy the greater popularity generally, because so easily and so rapidly produced from seed. A good collection of Chinese

* *Cypripedium* × *Antigone*, n. hyb.—Leaves a little broader and shorter than in C. Lawrenceanum, yellow-green, with numerous reticulated dark green veins, and some irregular leaf-like blotches of the same colour. Peduncle 10 inches high. Dorsal sepal broadly ovate, 2¼ inches in diameter, white, with about fifteen light purple nerves, and a few smaller intermediate ones, with many transverse connecting veinlets of the same colour. The purple is almost suffused along the sides, and the central nerves pass into light green near the base. Petals oblong, a little narrowed below, 2½ inches long, without warts; white, almost suffused with light purple, and with about eleven nerves of this colour, except at base, where they pass into light green. Here also are many small blackish-brown spots. Lip well intermediate in shape, though somewhat approaching C. niveum, white, the nerves yellowish-green behind, light purple on front and round the mouth, where it is almost suffused with the same colour; infolded side-lobes, with very numerous small blackish-brown spots. Staminode nearly the shape of C. Lawrenceanum, the sides and base light purple, paler in centre, and with a few reticulated green veins. Derived from C. Lawrenceanum ♀ and C. niveum ♂. *R. A. Rolfe.*

† *Cypripedium* × *Doris*, n. hyb.—Leaf ligulate-oblong, greyish-green above, and sparingly variegated with irregular transverse lines and blotches of dark green, pale green below, with numerous obscure purple markings. Scape one-flowered, pubescent. Bract not half equalling ovary. Dorsal sepal ovate, acute, pale greenish-white, with about twenty-one light green veins. Lower sepal smaller, and with fewer veins; similar in colour. Petals ligulate-oblong, slightly broader towards apex, subobtuse, almost 3 inches long, pale greenish-white, with about eleven light green veins below, passing into light purple-brown towards apex, and with numerous large dark brown blotches, except at extreme base and apex. Lip much like venustum in shape, light purple-brown on front and sides, and veined with olive-green, paler behind and near base, with brighter green nerves; infolded sides yellowish, with a few small light brown warts. Staminode with nearly circular outline, bicuspidate above, pale yellowish-green with dusky-purple reticulations in centre. Derived from Cypripedium venustum ♀ and C. Stonei ♂. *R. A. R.*

‡ *Lælia anceps Thomsoniana*, n. var.—The sepals are 1 inch wide, and 3½ inches long, white at the base, blush-white to two-thirds of their length, the remaining portion, the tip, light rose. Petals 1½ inch wide, 2¾ long, white at base and with white band up the middle; the rest clear pale rose. The lip exhibits extraordinary development; tube white except the edges, which are broadly banded with purplish-crimson, being a continuation of the half-inch wide bright purplish-crimson trumpet-shaped mouth of the tube, formed by the turned-back side lobes. Tube inside slightly tinged with yellow and streaked with purple. The front lobe of the lip is flat, 1½ inch broad, bright purplish-crimson, and there are the usual yellow keels down the middle of the lip. *J. O'B.*

Primulas, well grown and bloomed, is, indeed, a beautiful sight, and even Chrysanthemums look poor beside them. Still, there is the drawback, a serious one in these days, that flowers of single Chinese Primulas are of little value in a cut state, compared with some others, the Cyclamen especially. Now, if it be more difficult to produce good blooming Cyclamen plants at this season of the year than Chinese Primroses, the extra trouble involved is far more than compensated for by the exceeding value of the flowers when produced. The story of Cyclamen culture has been told scores of times, and really there is nothing fresh to tell. It is the same practical tale, told when it may be. There is nothing like a visit to a trade Cyclamen grower's to enable tyros to pick up practical information, as any good gardener can take in at a glance what are the essentials to success. It is one of the oddities of Cyclamen culture, that rarely are better plants produced than are those which go into the London markets, and of these none again perhaps are better than are produced on the west side of the metropolis. That such should be the case is all the more remarkable, because the plants are usually at their best during the dead of winter in these trade-growing establishments. Although a fog-ridden locality, where of late it has been found needful to retard somewhat until the Chrysanthemums have become exhausted, Cyclamen production in West Middlesex has somewhat changed hands of late, some old growers having fallen out, and others have taken their place. One of the oldest and best still, is Mr. Warren, of Isleworth, and one of the newer and best is Mr. May of the same locality. Each has a number of long low span-houses erected for Cyclamen culture at St. Margaret's. Probably there is little difference in methods of culture in both cases, but there is some in strain. Mr. May has certainly bred a remarkably fine dwarf giganteum strain, those of the pure white and persicum types being wonderfully fine and compact. The old legginess of the giganteum forms has been eliminated, the stems are not less stout, or the blooms less fine, but the relative height of foliage and bloom is far more evenly balanced, and indeed the plants so far as habit, robustness, and size of blooms are concerned, seem to be perfection. Thus looking over Mr. May's or indeed other Cyclamen-houses, one is struck with the fact, that the plants are very easily grown to such perfection. The houses are generally span in form, rather low, so that just head-room is obtained, and no more. There is the maximum of light, with a minimum of wasted plant space, and as the stages are not more than 3½ feet wide, the whole are easily commanded from the centre alleys. The stages are of broad trellis or open woodwork; warmth from the pipes below is thus more readily passed to the plants above, more air is accessible, and not least, when fumigation is needful, and fly will visit even the cleanest and best cultured stock; the smoke can pass up under the leafage with greater facility than in the case when the stages are close boarded. Greenfly is perhaps the most troublesome pest of the Cyclamen grower, and therefore he wisely fumigates the plants before there are numerous evidences of the pest abounding. It is easier to prevent than to cure when the pest has got good foothold. The houses are heated relatively; one or two have double the heating power others have. The cooler houses serve to keep the plants slowly growing, the warmer ones serve to fetch up a batch into bloom rapidly when specially required. Did not our trade grower possess such facility, he would often be in an awkward fix with respect to the supplying important offers. Only in the case of old corms left on hand the previous year, do we find many in pots, beyond the customary 48's. All the earlier of the yearling production of some 6,000 are in these 48's, and myriads are in full bloom; whilst myriads of others are coming on in various stages of growth, to keep up the demand which concludes about the end of April. Mr. May finds it needful to secure his loam from Banstead Downs, so that it is evident west Middlesex gives soil which has unsuitable properties. He sows his seed in pans during the months of August and September; pricks off the seedlings when strong enough to handle into 5-inch pots, about twenty into a pot, in light and not at all damp soil. Keep them in these until good growth has been made, then shift singly into 60-pots, and later into 48's, in which they bloom with wonderful profusion. When some ten to twelve blooms are open, the plants go to market, usually selling at good prices. In private gardens where, however, Cyclamen are rarely done well, the blooms are valuable for pulling and they endure well. To gardeners, therefore, at this winter season, a good batch of Cyclamens in fine clean bloom is invaluable. *A. D.*

ORNITHOLOGY IN RELATION TO AGRICULTURE AND HORTICULTURE.

(*Continued from p. 687.*)

The Rook.

Putting on one side those times when it is either harrying the newly-drilled fields, pillaging the ripening corn, or forced by the season to seek relief at the stack (a rare occurrence, except in the case of ricks badly built and thatched), the rook may be said to live a life of the greatest utility. Day after day the flocks may be seen, alike in spring and autumn, summer and winter, scattered over the grass fields and meadows, pursuing their useful avocation of ridding the pastures of worms and noxious grubs. The larva of the cockchafer (Melolontha), and of the crane-flies or daddy-longlegs (Tipula), as well as wireworms, abound often in old turf as well as in "Clover leas," and do great damage by eating the roots of the grasses. These grubs are the favourite food of the rooks, and many instances are on record of the bird's good offices in destroying and keeping them in check. Daniel, the author of *Rural Sports*, says, that in 1747 whole meadows and corn-fields in Suffolk were destroyed by the larvæ of the chafer-beetle. The decrease in rookeries in that county was thought to be the occasion of it, and the farmers both in Suffolk and Norfolk found it in their interest to encourage the breed of rooks, which extirpated the beetle. Jesse also tells us that he once knew a rookery destroyed in deference to the request of many farmers, who two years afterwards, were desirous that it should be restored, the wireworms, cockchafer grubs, and other destructive insects having greatly increased during that period. The same author, when speaking of the large fat grub of the cockchafer as a favourite food of the rooks, says that their search for them in old mossy grassfields may be detected by the little tufts of moss which are pulled up by them and scattered about. He was once shown a field which had all the appearance of being scorched, as if by a burning sun in dry weather. The turf peeled from the ground as if it had been cut with a turfing-spade, and it was discovered that the roots of the grass had been eaten away by the larvæ of the chafer, which were found in countless numbers at various depths in the soil. This field was visited by a great quantity of rooks, *though there was no rookery within many miles* of the neighbourhood, who turned up and devoured the grub. The passage here italicised explains how the grubs were enabled to increase so enormously and do so much damage. Where rooks are plentiful such a state of things is most unlikely to exist. It is recorded that years ago a flight of locusts visited Craven, to the great alarm of the agriculturists of that district. But the rooks flocked in from all parts, and speedily destroyed the whole of the insects. In the same publication it is stated that about the year 1830 there was such an enormous quantity of caterpillars upon Skiddaw, that they devoured all the vegetation on the mountain, and it was feared that they would attack the crops in the enclosures; the rooks, however, discovered them and soon consumed them.

Watch the rookery in spring, when the rooks are feeding their young. See where they go to find the food they are carrying to the nests. They go to the rich pastures, to the damp meadows, to the fallows and to the allotment plots now newly turned up by the spade. Here you may see them pulling the worms out of the ground. All day long they go backwards and forwards between the nest trees and the fields, bearing each time a little load of worms and grubs Each time they bring back quite a number, and the mass collected in the basal part of the mandible (under the tongue) can be clearly seen as the rook flies past the observer on its homeward journey, the loose skin being distended and appearing like a lump at the base of the beak. This gave rise to the notion formerly entertained, that the rook had a pouch at the root of the tongue.

Worms and grubs they must have for their young. Corn is no good to them then. In dry, cold springs, when frosts and bitter east winds have made the turf as hard as iron, and dried up the newly-turned soil until it is dusty and powdery, so that the worms have retreated far below the surface, the young rooks are sometimes half-starved. Faint, thin, hungry caws come from the nests, and the old birds sit about, or fly to their feeding grounds in a half-hearted way, for they know how useless it is to search for worms in the dry, powdery soil of the fallows, and their beaks cannot break the hard surface of the grass-lands. Dry, bitterly cold springs always make the young rooks late, though the weather is suitable for drilling corn. And what a chorus of glad caws arise when the wind shifts into the south-west, and the gentle, softening showers fall! We cannot want better proof than this, that all that time the rooks are doing unbounded good.

And here we may well devote a short space to the consideration of the earthworm. When a bird has been said to do good by eating worms, the reply has been made—"That is not doing good; we could not do without worms; they are very beneficial." True enough. It is well known that the earthworm forms our surface-soil, and assimilates and mixes with it the decaying vegetable matters, leaves, &c., which fall on it every year. They also keep it fresh and sweet by boring through it, and turning it up in all directions. But the earthworm might easily become too numerous, and would then be a curse and not a blessing. Those who live in the country, where there are generally plenty of birds, together with some moles and shrews, can hardly realise what it is to be overstocked with worms. But dwellers in towns, where the mole and the shrew are not, and where birds seldom come, know what it is. A smooth, neatly-kept lawn can become an unsightly, loathsome object from the ground being full of earthworms. Instead of green, it can become nearly all brown, the grass being covered up with the worm castings. In the kitchen garden, it is almost impossible to sow seeds in the beds, they are so constantly disturbed by the workings of the worms, and the growth of the roots of every plant is interfered with by them. It is as well to remember that the whole country might become like this if the earthworm's natural enemies were all destroyed, or so thinned that they could not keep the worms in check. And if once the earthworms did increase to this extent, it is difficult to say what remedy could be found.

The crane-fly, or daddy-longlegs (Tipula) may often be found swarming in pastures and meadows towards the end of summer, and in early autumn. They are there for the purpose of depositing their eggs, from which swarms of larvæ would be hatched out, partly late in the same autumn, but chiefly early in the following spring. The multitude of grubs thus brought into existence would do incalculable harm by gnawing the roots of the grasses and other plants. The rooks, however, abate the mischief at its very inception, by eating enormous numbers of the flies themselves. They also dig up and eat the grubs at other seasons, both in pasture-fields and on the arable land.

Enough has been said, however, to show the pre-

sence of the rooks on the grass-lands is eminently beneficial, and it is only necessary to remind farmers that when they see tufts of grass or Clover plants in their fields evidently pulled up by the rooks, they must not consider that this is a mischievous action, but remember that the worm was already gnawing at the root of the plant, which would in any case have died, when the rook plucked it to destroy the real author of the mischief, and, in destroying the grub, saved many plants, not only from it individually, but from the ravages of the numbers it would have propagated. To appreciate fully the benefits the rooks confer upon us in this respect, we must observe how many days in the year are spent by the sable hosts in the pastures and meadows, how they resort day after day to one particular field which seems more particularly to need their presence, deserting it for another only when their work is done; and in the hard times of winter, should a mild spell occur, how they will crowd down into the partly-flooded meadows, where, at the edge of the shallow water, they know that in the softened ground they will again find in abundance their favourite prey, from which the rigours of winter and frost-bound ground had lately debarred them.

To the arable land the rook is not less attentive, although the period during which its useful visits can be paid is necessarily somewhat curtailed. A newly-ploughed field is a happy hunting ground for the birds, and the picture of the rooks following the plough in order to seize the grubs and worms turned up before they have time to bury themselves once more, is a familiar country sight often depicted both by pen and pencil. The stubble fields are also visited in late autumn and winter, and in spring the fields of young autumn-sown wheat are visited by the rooks in search of wire-worms which so often infest them. It needs only for the enquirer to witness once the utter destruction among corn crops which can be caused by these pests (the unchecked ravages of which would result in the entire failure of the crop), and he will ever afterwards view, with complacency, the rooks swaggering along the drills of his thickening wheat crop; and if he finds here and there a few plants plucked up, let him rest satisfied that at their roots the wireworm was entrenched, and that the rook in rooting the plant stopped further mischief. To the Turnip and Swede fields, especially in hot weather, in the early days of autumn, the visits of the rooks are most beneficial. Root crops at that season often suffer greatly from wireworms, and still more from the ravages of a fat grey grub, the larva of one of the dart moths, the Turnip moth (Agrotis segetum). The latter is one of the most destructive of farm insects. The larva feeds on the Cabbage, Onion, Lettuce, Carrot, Turnip, Mangold, Beet, &c., eating off the young plants, as well as boring into the bulbs. The rooks are very fond of these grubs, as well as of wireworms, and by digging round the roots soon reduce their numbers. The writer, on examining a root crop attacked by the grub, but afterwards visited by the rooks, had the pleasure of hearing the owner say that he did not believe he should have had any roots at all if it had not been for the "crows,"—and this testimonial came from one who was in no way predisposed in favour of the rook, but who was more alive to the mischief they do at times, than to the more habitual, but less ostentatious benefits that they confer upon agriculturists.

The destruction of vast quantities of the destructive chovy (Phyllopertha horticola) has also been attributed to the rook. And they are said also to eat the caterpillars which sometimes infest the foliage of Oaks.

To sum up the whole matter, it has been found, without doubt, that the rooks do a certain amount of damage both in seed-time and harvest, but it must also be conceded that the periods during which they can injure the agriculturist are of short duration. On the other hand, the benefits they confer are equally well proved, are carried on on a much larger scale, and are continued during the whole of the year, save at those exceptional times when the earth is frost-bound or deeply covered with snow. It has been shown that the natural and usual food of the rook consists of worms, grubs, and insects, and that a vegetable or farinaceous diet is only occasionally resorted to. In the face of these facts, it is impossible to come to any other conclusion than that while the rook is undoubtedly only occasionally injurious in certain places and during short periods, yet its occasional depredations are largely outweighed by the good which it is continually doing, and that, on the whole, in its relation to agriculture it is a highly beneficial agent. Our crops and newly-sown fields, during those short periods when they are liable to suffer from the visits of the rooks, can be protected from the birds to a large extent; but no human means or device would in any degree suffice to check the enormous increase of those many noxious insects (and the consequent frightful ravages upon our crops), which would certainly ensue were we to be deprived of the services of our feathered defenders. We ought not, then, in times of insect scarcity, to grudge them a fraction of those crops which they have preserved for our use from their insect foes—

"But know
They are the winged wardens of your farms,
Who from the cornfields drive the insidious foe,
And from your harvests keep a hundred harms;
Even the blackest of them all, the crow."

O. V. Aplin, Member British Ornithologist's Union.

Orchid Notes and Gleanings.

CALANTHES.

Few Orchids are more easily grown or increased than Calanthes, or are found of more general usefulness. As winter-flowering plants they stand without a rival, and in pots they are very effective when tastefully arranged with Palms, Ferns, and similar plants, and not only may they be used in this way upon stages and rockeries in the conservatories and other show houses, where they last for weeks in good condition, provided they are kept warm and preserved from a damp atmosphere, but they are nice subjects to place in living-rooms or on staircases. In such places the effects are particularly good by artificial light. As cut flowers they are much appreciated. C. Veitchii, and the early varieties of C. vestita, blossom almost together, while C. Regnieri, C. Turneri, and C. vestita oculata gigantea, flower at a later date and form a succession to those. Of the newer hybrids I know little, but I have some seedlings, which it is hoped will flower in due time. Seeing Calanthes may be readily crossed, and seedlings are not difficult to raise, varieties will soon increase in numbers. Nevertheless, the best forms of C. Veitchii are likely to hold their own for some long time to come, as the flowers possess many excellent qualities. Of this type, I have one named Rangemore variety, which, I think, originated at Rangemore. It is not, I believe, common, although some few years ago it was figured in the *Journal of Horticulture*, when Mr. Bennett then said that it had been at Rangemore for thirteen years. I herewith send you a raceme of it, together with one of the ordinary kind for comparison. You will observe its individual blossoms are more perfect in outline than are those of the common variety; the colour of the lip is also of a more delicate tint, and the sepals and petals have a lighter rose shade; moreover, the flowers stand closer together on the stalk. In habit of growth it is comparatively erect, foliage and flower-spikes shorter, and its flower-spikes more upright; altogether, a very distinct variety. Its flowers come freely, of which the spike sent may be taken as an example. The pseudobulb was potted in the spring of this year, and produced two bulbs, each of which carried two spikes equal to that sent. *Thomas Coomber, Hendre Gardens.* [The colour is bright, flowers numerous and large, but the spike of less length than some others that we have seen. Ed.].

Miltonia spectabilis var. Moreliana.

Whilst all the varieties of Miltonia spectabilis are valued for their beauty, the one under notice is universally accorded the first place. Certainly no early summer-flowering Orchid surpasses it either in form or richness of colour; the flowers, if well developed, measure 4½ inches in depth, and somewhat less in width; the broad oblong sepals and petals are of a rich deep purple, and the lip, which is fully 2 inches in diameter, has a pale purple ground, beautifully radiated with lines of a deeper shade.

All the varieties of M. spectabilis require a place in the Cattleya-house near the glass, but they should be shielded from bright sunshine. The Kew plant is growing on a raft of Teak wood placed on the surface of a broad shallow pan, nearly filled with crocks and charcoal, and about the roots a compost of peat fibre and sphagnum is placed. This method secures perfect drainage and an equable degree of moistness at the root, and these, with the proper shading, are the essential points in its cultivation. *W. B.*

Cypripedium × Leeanum giganteum.

This is a large and magnificent variety of the well-known C. × Leeanum, just received from Mr. J. S. Treseder, of the firm of Messrs. Heath & Son, of Cheltenham. It surpasses anything I have seen before. The dorsal sepal is over 2⅞ inches in diameter, and the petals are each 2⅞ inches long, and barely under an inch broad near the apex. It differs but little in colour from C. × Leeanum superbum, except that the white of the dorsal sepal is without purple spots except on the median line, while the spots on the petals hardly extend so far towards the apex. It is also worthy of note, that in this case the parentage is reversed, for Mr. Treseder states that C. Spicerianum was the seed parent, and that the pollen was obtained from a very large form of C. insigne. These two species have been crossed together several times; but Messrs. Heath must be congratulated on having produced the premier form of this beautiful hybrid. It is remarkable how rapid is the advance being made in the hybridisation of this interesting genus. *R. A. Rolfe.*

Catasetum Russellianum.

This Guatemalan species has flowered at Kew, and although it is neither so peculiar in structure nor so highly-coloured as C. Naso, it is pretty, and decidedly interesting also, as showing the diverse characteristics found in the genus. The flowers appear in a drooping raceme of about fifteen, and are of a pale green colour, striped with darker lines. The basal part of the lip is shaped like a pouch, the bottom projecting forward like a chin; the front part, toothed at the margin, is flat, and spreads horizontally forwards from the opening of the pouch.

Catasetums require, when growing, a warm, very moist, and almost unshaded position, with cooler, drier conditions when at rest. It is convenient to have them with the tropical species of Dendrobiums, as they require identical conditions as to light and moisture. It is important, however, that the syringe should be kept off them, for if water be allowed to lodge in the centre of the growths, it frequently sets up decay in those parts, thus seriously checking the growth of the plants. Fibrous peat and loam, mixed with a little sphagnum moss, is a suitable compost for these plants. *W. B.*

Cymbidium Tracyanum.

This is the largest and showiest Cymbidium, its stout nodding racemes carrying flowers 6 inches across. The sepals and petals are greenish-yellow, each with seven to ten narrow lines made up of crimson dots and streaks. The ample lip is cream-coloured, the side lobes striped with red, and the front lobe spotted with the same colour. The lip is fringed, and the ridges down its middle have

numerous hair-like processes. In its botanical features it comes nearest, perhaps, to C. Hookerianum, but its flowers are marked in a manner more nearly resembling C. giganteum. In point of showiness and beauty it is far superior to both those species, as we know them in gardens. The plant which bore sixteen flowers on one spike, received a first-class certificate at the Royal Horticultural Society's December meeting, when Mr. H. A. Tracy, of Twickenham, exhibited it; and on Friday last it was sold at Messrs. Protheroe and Morris's Rooms for 75 guineas.

Anœctochilus regalis, *Blume.*

A case of several varieties of this beautiful-leafed plant—the Wana Rajah of Ceylon—may be seen in one of the Orchid-houses at McArthur's nursery, Maida Vale, London, W. The typical form, with its bronzy leaves netted with reddish-gold, is perhaps the prettiest, but the variety cordatum has the largest leaves, and inornatum has dark velvety leaves, with but a few gold lines up the middle. In an ordinary, intermediate, Orchid-house, no difficulty has so far been experienced in growing these plants here. It is to be feared that their character for being difficult to grow comes mainly from their being kept too warm, and often over bottom-heat, which generally results in a rapid weak growth, and their subsequent death. *J. O'B.*

Florists' Flowers.

THE GARDEN ANEMONE.

The term garden variety has a rather wide meaning, and as applied to the Anemone may take in both single and double varieties. The single Anemone has been brought into prominent notice by the introduction of the brilliant variety, fulgens. The beautiful double variety had dropped into the list of neglected flowers, as they had sometimes done before. Parkinson, in his interesting work, *The Garden of Pleasant Flowers*, tells us, the double varieties were grown in English gardens, and their culture and propagation from seeds were well understood. A good plate of the different types is given at p. 211, and many double varieties found therein are described. Double Scarlet, Crimson, Double Crimson velvet, Double White, Blush, Blue and Purple, Rose, Carnation colour, &c. Parkinson recommended planting the tubers at intervals from August to April, and adds that those planted in February will flower from the middle of May to the end of that month. He also states that the Double Scarlet, Double Blush, and other fine sorts came from Constantinople. Their culture seems to have declined after his day, probably because the raising of seedlings had been neglected. There are two distinct groups at present under cultivation, viz., Anemone hortensis, the star or broad-leaved garden Anemone, which is figured in *Bot. Mag.*, t. 123, the editor remarking:—"We are more and more convinced that, in our eagerness for novelties, we daily lose plants by far more ornamental than the new ones we introduce; the present, a most charming plant, with which the gardens abounded in the time of Parkinson, is now a great rarity."

Anemone coronaria, the Poppy Anemone, is figured later on in the same work, t. 841. Dr. Sims, the editor, states that Anemones had now (1805) become very common, and adds that, "there is scarcely any plant that is capable of rendering the flower garden so gay in spring, especially if the season be favourable for its blowing, which, unfortunately, is not always the case." He also advised the planting of a portion of the stock in autumn, and another portion in February and March. My own experience of planting Anemones in England and Scotland extends from the year 1853; and I cannot forget the sight of the splendid double flowers (we had no single ones in those days), scarlet, purple, blush, cream-coloured, rose, crimson, &c. I have tried various methods of culture, planting in light soils and heavy soils, in autumn and in spring; and I should be afraid to say to which of the above species described in the *Botanical Magazine* our double garden varieties belong. Probably they are intermixtures of both species; the form of the leaves and flowers suggests this, although some single varieties amongst them have the more finely divided leaves and Poppy-like flowers of A. coronaria.

In order to have a good display in beds and borders, varieties that grow of about the same height should be planted together, and the colours should harmonise or contrast with each other, whichever is preferred. Some varieties do not grow more than 3 or 4 inches in height, others twice as much. My collection consists of named varieties, a few of the best of which are:—Surprise, a splendid rich scarlet colour—certainly the best of this colour; Nestor is bright red; Sir Joseph Paxton, large scarlet flowers with faint whitish flakes and stripes; Charlotte, bright crimson-lake—very handsome; Queen of Roses, salmon-rose; Sultane, white, the base of the petals tinged with rose; Queen Emma, white, with red flakes and stripes; Prolifera alba, white, the base of the petals rose-coloured; Julia, a very lovely variety, of a creamy colour, and rosy-tinted centre; King of the Blues, purplish-blue, the petals margined with white; Ornament de la Nature, rich purple; and La Fidèle, blue and white. We have scores of other varieties, but the above are all distinct in colour, free-flowering, quite double, and about the same height. They will be planted in February, and bear out Parkinson's statement that they flower from the middle to the end of May. I recommend February as the best month in which to plant them, they are then growing away freely, and flowering very strongly and profusely. If planted in the autumn, they become crippled during the winter, and if left in the soil for two or three years in succession, they disappear entirely. They seem to like a medium clayey soil best, but the ground should be deeply dug, a good dressing of decayed stable-manure applied, and the more the soil is turned over and exposed the better. I draw drills when planting them about 3 inches deep and 1 foot apart, and plant 6 inches asunder; a small quantity of sharp sand being placed under and over each tuber. Few spring flowers better repay the cultivator than these splendid Anemones. *J. Douglas.*

Trees and Shrubs.

ABIES WEBBIANA.

In places where this Conifer succeeds, it is one of the handsomest, but unfortunately it is too soft in the buds at the points of the leading shoots to stand in England, unless in parts favoured as regard soil and climate. Here we can hardly claim to be so situated, and yet we have one fine plant which escapes injury, owing to the position it occupies, which is one sheltered by high ground and trees, which not only keep off cutting winds, but prevent the sun reaching it till late in the day, and therefore thawing after frost is gradual. I am of opinion that has much to do with this species standing so well as it does. We have lost all others which were not so well placed. In Devon and Cornwall, Abies Webbiana would be safe and stand well, and if so it ought to have a place in all gardens of any pretentions, as it is fine-looking and very distinct in habit and character.

Abies Cephalonica.

For pleasure grounds this forms a very striking object; but, unfortunately, like A. Webbiana, is apt to get its points injured, not so much perhaps from softness of bud as from the tendency it has to make early growth, and the tender young shoots are apt to get injured by spring frosts; but this may, in a great measure, be obviated, and the plants rendered tolerably safe by planting them in sheltered spots, and on fairly high ground, as frost always drops into valleys, and growth made there is not so firm, and damp favours the cold. We have some remarkably handsome plants here that are standing open to the west, and growing in loose grey sandy soil, the height of some being between 60 and 70 feet, and very beautiful they look in their rich silvery sheen when the sunlight is on them. Abies pinsapo somewhat resembles A. Cephalonica in habit and growth; but the first-named is by far the better of the two. The main difference between them is, that the latter has its leaves flat, and the other more round, and on whorls on the shoots.

Abies nobilis.

This, as its specific name implies, is a hardy noble object, and not only does it attain large proportions, towering up, it is said, some 200 feet high, but its whole contour is very striking and handsome, the growth being regular and symmetrical, and the colour of the foliage a pleasing glaucous green; in addition to which the bark of the stem looks as if polished, when the trees are in health. The growth of the tree, too, is very free, and it seems to do in almost any soil and situation, as it is thoroughly hardy, and will therefore succeed in the most exposed place, except where wind might break the branches to pieces. With us it cones freely, the cones being from 6 inches to 8 inches long, and large in proportion. *J. Sheppard.*

The Bulb Garden.

THE HIPPEASTRUM (AMARYLLIS).

In gardening, it is very desirable that we should at all times be well ahead of the work to be done, and it will not run smoothly unless it is so performed, and with a fair amount of deliberation. The above observations are made, because my first work in the new year will be the repotting and rearranging of the stock of Hippeastrum bulbs. The potting soil is already mixed, and lays in a heap ready for use; it consists of three parts fibrous loam, somewhat decayed, one part fibrous peat, one of leaf-mould, and one of rotten manure, with enough of coarse white sand to make it porous. Time can be afforded during the month of December to wash the woodwork and glass of the house, and examine each bulb, removing the brown decayed and decaying substances left after the leaves have fallen. Mealy-bug and thrips hide in the neck of the bulbs, and the removal of the decayed scaly covering goes a long way towards exterminating them, and dusting afterwards with tobacco-powder is likely to "mak siccer." When all the examination and cleaning are over, the bulbs will be ready to be repotted; and if they are to be plunged in tan beds, these should have fresh material added, and the old and new well mixed together.

In repotting the old bulbs, use clean, well-drained pots, and do not over-pot them. Plunge the pots at once in the gentle bottom-heat, and do not give them any water for a month or six weeks at least. The base of all the bulbs should be examined, as sometimes decay sets in there, which ought to be removed. Small seedlings raised from the August sowing are now in the form of small plants, with healthy leaves. The seeds soon vegetate, and the plants are standing a dozen in a 5-inch pot. These are the plants which will be repotted in threes in the same sized pots in January or February, to remain in them till the end of the season, when they will have formed large bulbs, which may not be strong enough to flower the following season, but if repotted singly, and grown on for another year, nearly the whole will do so. This raising of seedlings is one of the most interesting parts of the culture of Hippeastrums. It is worthy of observation that the bulbs of seedling plants produce stronger flower spikes than older plants. There is yet room, notwithstanding all that has been done, for the raising of seedlings, and the owner of a dozen varieties of Hippeastrums may find much pleasurable excitement in the work. Let the

bulbs which flower late be chosen as the seed and pollen bearers, choosing such varieties as have good form and substance, and bright and decided colours. I noticed when looking over the large collection of Hippeastrums at Messrs. Paul & Son's, Cheshunt, that a batch of plants had been started early enough to get some of them into flower by Christmas. About the middle of November some of them had the flower spikes considerably advanced. I have been satisfied with my earliest flowers about the first week in March; but if by judicious forcing they can be obtained from Christmas onwards, our hothouses will be the richer, and we shall be greatly indebted to Messrs. Paul for showing us how and what may be done in this way. *J. Douglas.*

ORCHID BLOCKS AND BASKETS.

LAST spring I mentioned my method of growing Odontoglossums, see *Gardeners' Chronicle*, March 8, p. 299. Since then I have had ample proof that I am on a good track; my Odontoglossums, as a representative of one of the first Orchid establishments in England could confirm, grow nicely, so that with the young pseudobulbs two and even three years old ones push healthy strong flower shoots. A plant of O. Pescatorei even, has both one-year-old and two-year-old pseudobulbs, with two shoots on each. These results are obtained partly because by high planting the roots remain healthy, and partly by the application of guano, which I now employ continually, and which even in a very concentrated solution is not injurious to quite young roots. I have tried it on Catt'leyas, Vandas, Oncidiums, and Masdevallias, and always with the best results.

To come still nearer to the natural mode of Odontoglossum growth, I took a branch of a Pear tree about 10 cm. thick, and 1 mètre long, fastened a plant to the upper part of it, and covered the roots with a little sphagnum moss, throwing a handful of good leaf-mould between sphagnum and roots, and covered the whole with living green moss. The roots have now run the whole length of the stem, and just now an O. Alexandræ is flowering on such a branch with a spike of twenty-three very large and perfect flowers (10½ cm. in diameter), six of which are on a side branch of the spike, as with O. Pescatorei (see fig. 141, p. 721).

My principal care is to maintain the old roots in good condition. If this is not attained, the young shoots have no support, and get yearly weaker and weaker. If, on the contrary, the old roots are sound, the young shoot will be vigorous, and even back eyes of the old bulbs will occasionally develop themselves.

In my opinion, the best method to obtain this desirable result is to give the roots opportunity to ramble superficially (ample drainage being supplied), be it in a broad but shallow basket, or on tree-trunks.

My new kind of Orchid-basket (see figs. 139, 140) is constructed very simply, so that each of the four sides can easily be taken away in order to inspect the condition of the roots; by its use, transplanting will also be much easier.

If Odontoglossums have become weaky in pots, they are quickly restored to good health by the following experiment. I had baskets made about 4 feet long, by 2 feet broad, and 3 to 4 inches deep. In these baskets a number of unhealthy Odontoglossums were planted in a mixture of equal parts of sphagnum, good peat, leaf-mould, and crocks, without using drainage, as the sticks are fixed so that water can escape, but not the material. In an incredibly short time young roots appeared, and as soon as they were in good activity, guano was freely used, and in six months these plants possessed deep green foliage and plump bulbs ready to be planted singly. *O. F. Lehenhof.*

RENOVATING ORCHARDS.*

I HAVE pleasure in complying with the wish of the Secretary of the British Fruit Growers' Association in writing a paper on the subject in question, in the hope of its being of service to those for whom it is intended.

There are no doubt thousands of orchard fruit trees, not only in the kingdom, but almost in every county, which are little less than cumberers of the ground. Some of these trees cannot be profitably restored,



FIG. 139.—NEW ORCHID BASKET.

but unquestionably many of them may be materially improved.

The one great fundamental error which appears to have taken possession of the minds of the majority of men who have planted orchards, is in apparently supposing that the trees would go on growing and bearing good fruit year after year, from generation to generation, without the soil having restored to it such mineral constituents as have been abstracted

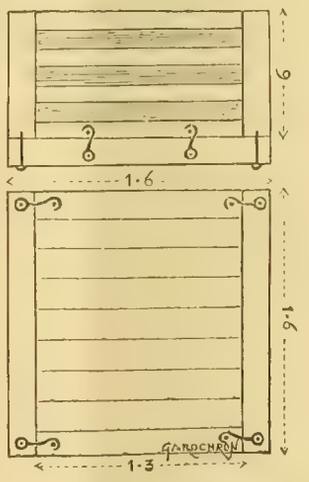


FIG. 140.—THE BASKET SHOWING BOTTOM AND END.

from it by the wood, leaves, and fruit of preceding years. It is well known and recognised that all crops of a much more ephemeral character than fruiting trees cannot be reproduced on the same ground year after year without returning to the soil in the form of manure the constituents removed by those crops, or in so arranging successional crops in farms and gardens that require in the main either different foods, or at least widely differing proportions of the same kinds. All farmers know that they cannot obtain even half crops of grain, Clover, or roots from the same field for half a generation, if they put nothing into it; and it is the same with garden crops. They can only be produced year after year in a satisfactory manner when the ingredients necessary for their production are in the soil.

Everything that grows in the vegetable, as well as in the animal kingdom, needs appropriate food, and just in proportion as the supply fails, in the same proportion is the debility of animal, plant, or tree manifested. The same principle governs all. Food is the motive power in the growth and productiveness of fruit trees, and is as essential to them as heat is as supplied by coal for the generation of steam to enable our engines to do the work for which they are intended. And not only must the supply of fuel be adequate for the object in view, but the machinery must be kept in clean, smooth, free-working order, or the fuel would be wasted. It is the same with fruit trees. The parts above ground must be clean, the branches bright and clear, the leaves stout by direct exposure to light and air, or whatever food there may be in the soil for the roots to imbibe will avail little in the production of fruit. This is plainly seen in the case of young trees growing in over-rich soil, and where the knife is freely used in cutting back the luxuriant growths yearly. They become mere thickets of sappy growths and flabby leaves, few or no blossom buds forming. This is mentioned for showing the necessity of light and air acting directly on the foliage of fruit trees for maintaining them in a healthy fruitful state. Good leaves, thick in texture, deep green in colour, and clean, are manufacturers of fruit. They are the machinery, so to say, of trees, but differ from mechanical productions, inasmuch as they are formed in a large measure of matter supplied by the roots. Produce good leaves by good food from the soil, and full exposure to the air for breathing and benefiting by the atmospherical gases, then will the trees be healthy and productive.

Now let us turn to orchard trees that need renovation. The first question that naturally arises is this, What is the cause of their unsatisfactory condition? It is only when the cause of an evil is determined that the best remedy can be directly applied. After what has been said on the necessity for adding fertility to the soil for annual or biennial crops, it will be seen how utterly impossible it is for trees that have been draining the soil of its virtues for half a century, more or less, to be otherwise than in a debilitated state. They are struggling for existence in famine-stricken soil. The fruit they produce is small, hard, juiceless, or more notorious for core kernels and skin than for thick, tender flesh and the red or rosy flush on the clear and speckless cheek. These are the fruits that are so much coveted, and they can only be produced by good sustenance or an adequate supply of suitable, well-digested food. If the fruit food, which consists mainly of lime, potash, phosphorus, and soda, is in the soil with sufficient moisture, the roots will imbibe it in solution and good leaves digest it, then there can only be one result—healthier growth and better fruit, and it may be as good as the variety is capable of producing.

Some orchards are unproductive through the roots having passed deep down into water-logged soil. They first seized the food that was nearest, then sought for more further afield, so to say, just as sheep do in pastures; but if they get into a bog they perish. Water is the first necessity of fruit trees but if it is stagnant it is the reverse of nourishing, and may even be poisonous, the effects of this being seen in the form of gangrenous swellings, canker, gum, mildew, and a horde of insects that find suitable conditions in which to thrive. Orchards that are failing through the roots of the trees being in a quagmire, can seldom be restored to health, and the only way of improving them is by fresh soil and manure placed in actual contact with the upper roots, from which new rootlets may be tempted to form, as they will when surrounded with a suitable medium. It is better to plant new orchards than to spend much money in the form of labour and material on old, under those circumstances. Those who have established or inherited such orchards are now paying the penalty of the mistake that was made of planting the trees in the wrong places, or for not having kept the

* A Paper by Mr. JOHN WRIGHT, read on behalf of the British Fruit Growers' Association, at a meeting of the Falmouth Horticultural Society, November 12, 1890.

roots near the surface by periodical applications of food. In years of long ago, any site appeared to be thought good enough for an orchard, and trees seem to have been planted in places that were too wet for growing Potatos. We can only hope that the errors of the past may be taken as lessons that will teach the present generation wisdom in the cultivation of fruit. When an orchard is in a low wet site that cannot be drained, perhaps the best thing to do is to plant it with Osiers. These give a fair return, draw much water out of the land, and the myriads of leaves that fall from them gradually enrich the surface soil and encourage the production of fibrous roots there, which never fail to benefit fruit trees. Osiers established in extensive orchards where the land is wet, realise sufficient for paying a good rent and something more, while the trees above them bear excellent crops of valuable fruit.

But where one acre of orchard fruit trees needs renovating through excessive wetness of site, twenty and more, probably fifty, if not a hundred, acres of trees have been rendered comparatively effete from an exactly opposite cause—namely, soil so dry and poor that there is little to be imbibed from it by the roots of the trees, and certainly not half so much as is needed for enabling them to yield even moderate crops of scarcely marketable fruit. In such case the trees, if not too old and canker-eaten, are amenable to improvement, and they may give, as many have given, a good return for the assistance that has been rendered than in feeding the roots and thinning and cleaning the branches, also by grafting better and free-growing varieties on the inferior, for it should always be remembered that a tree of a bad variety takes up as much room as a good one, and, moreover, a tree that neither bears good fruit nor makes little beyond cankered growth, may be transformed into a healthy specimen and bear fine fruit by putting a new head on old shoulders in the form of a number of grafts of a strong-growing hardy sort, always provided there is nutriment in the soil for the roots to appropriate. Strong-growing Apples and other fruit trees established on weak stocks increase the root-action of those stocks, and if these can find the requisite support for the growths, new layers of bark form on the old stems, and a new lease of life is thus given to the trees.



Fig. 141.—Natural method of growing Orchids. (see p. 720.)

Several instances of success resulting from grafting profitless trees could be given, but two will suffice. Mr. Robert Garrod, of Ipswich, planted a number of fruit trees some years ago in good soil. In the course of time some of them instead of growing and bearing, commenced cankering, and were soon worthless. By simply cutting back the branches of these, and grafting them with varieties that flourished, he made the useless trees useful, and they have since borne profitable crops, and the stems are free from canker. In this case there was sufficient nutriment in the soil, but the paralysed roots of the stunted trees could not imbibe it, but the free growth of the grafts caused an extension of root action, and sufficient nutriment was appropriated for the continuance of healthy growth and the support of good crops of fine fruit. I am at liberty to mention Mr. Garrod's name, because it has appeared in the public press, but I am not free to mention the name of the owner of some Apple trees in inferior varieties and of stunted growth. They did not afford him £5 worth of fruit a year. He was advised to cut them down, and insert a number of scions on each of the hardy and strong-growing Bramley's Seedling. They commenced bearing in three years, and the seventh after grafting yielded considerably more than £100 worth of fruit. Nothing was done to the roots. How, then, is the improvement to be accounted for? In this way. The stunted trees had roots, but they were of necessity weak, and did not extend far from the stems. They had impoverished the ground within the small occupied radius, but the strong variety established on the weak, imparted strength to the roots, and these pushed beyond the impoverished radius into fresh feeding ground, and practically virgin soil. When endeavour is made to improve fruit trees by grafting, much stronger-growing varieties should be chosen than those which are cut down for the reception of the scions, because of the increased power that is thus imparted to the roots, for the character of the roots is changed by grafting as certainly as are the tops of the trees.

The process of grafting cannot be made clear to the uninitiated without illustrations, but these, with concise details, are given in the essay which I wrote for the Fruiterers' Company, and which can be had by post for 1*s.* 3*d.* from 171, Fleet Street, London. I have the less hesitation in mentioning this, as I derive no advantage whatever from its sale.

I wish to make it quite clear that when old trees are renovated by grafting alone, it is because there is soil that can be reached by stronger roots which has not been deprived of its fertility. Where the whole surrounding ground is impoverished, grafting is not of much permanent value. Strong growing and rooting sorts will live where the weaker fail, just as active animals with good teeth have an advantage over others that are afflicted with the foot-and-mouth disease in getting the best share of the pasture. But where the food is scant, it is soon devoured, and thus it is that we see grafted trees grow very well for a few years only, then collapse; they succumb because they have emptied the larder, for the earth is the great larder of Nature, and it is the duty of cultivators to keep it replenished with the food that is needed by the crops. The soil itself is not food, but only the medium for containing it, as a sponge contains water. We use the water and leave the sponge, and fruit trees draw the food out of the earth, and leave the soil. There are not many exhausted fruit trees that cannot be improved by enriching the soil, or placing in it the fruit-growing constituents which have been drawn out, and especially when the trees are also judiciously pruned and cleaned from insects, moss, and other parasitic encrustations.

The quickest method of storing food in the earth for immediate appropriation by trees is in the form of liquid manure, such as the drainage from stables and manure heaps, or the contents of cesspools—sewage. After much experience, I am justified in recommending the application of liquid manure to debilitated fruit trees in the winter under certain prescribed conditions. It may be applied usefully in the summer also if the soil is moist, not on the surface only but 3 feet or more below it, otherwise a minimum of benefit will accrue from a maximum outlay in material and labour. On this subject, I cannot do better than reproduce what I wrote in the *Journal of Horticulture* a little more than a year ago. Those who have read it I ask to read it again, and find all the fault they can with it. They had better do this before making full trials of the method indicated, because they will not have such a good chance afterwards. Here is the article that was founded on long practice. The simple plan advocated has since been tried by others, and not found wanting:—

"Some time ago a correspondent said he failed to see how liquid manure given to fruit trees in the winter could be of any benefit, as the roots were then in a dormant state. In the first place, they are not in a dormant state after the leaves fall, though they do not imbibe nutriment from the soil to anything like the same extent as in summer; and in the second place, they do not imbibe what they need either in summer or at any other time when the food for which they are hungering and thirsting is not in the soil. That is the condition of thousands of trees in summer and winter. They have been planted for years or generations, and manure may or may not have been placed round their stems from time to time. Be that as it may, the roots have deprived the soil of all that was good for the trees, and gone further and deeper in search of more—seeking, but finding not, that which is necessary for their sustenance. They have lived but not prospered, and never can prosper until the impoverished food store (the earth) is replenished—supplied with matter which is essential to their health.

"Unquestionably this may be given with great advantage in summer if obstacles do not forbid its application then, and in no other way can it be so quickly effective as in a liquid state. At no period are the roots of fruit trees of all kinds so active as early in September, and at no period can so much nutriment be imbibed from the soil in a given time when the earth is in a fit state for its reception. It is not in a fit state when it is dry, and I have no hesitation in saying that the best of liquid manure that can be procured does immeasurably less good applied in summer, when the soil, in which the roots are situated or trying to move, is dry, than in winter, when it is moist—not waterlogged, but moist enough for absorption, while at the same time permitting of free percolation, for where water passes through the soil air follows, and there can then be no stagnation. The earth, then, to be in the best condition for the reception of liquid manure, must be moist, yet sufficiently drained naturally or artificially.

"During the summer months the earth may appear moist, and is moist, it may be, to a foot or so in depth, even under and near long planted, large, yet enfeebled trees; but below the moist layer in which there are few or no roots, we find, on digging, that the earth is as dry as powder, and it is in this dry under-stratum that the chief of the roots are established. This should be thoroughly moistened with clear water, then, and not till then, following with liquid manure. But it is often most difficult, and may be impracticable, to make the impoverished soil moist during the summer season of the year, in which the roots of starving trees are established; and beyond question the autumn rains and winter snows do the important work more effectively and cost nothing. Then is the time to empty cesspools and pour the contents into the ground; of course, when the surface is moderately dry. At that season of the year the liquid can be given of twice the strength it would be safe to apply it when the roots are in an active state; in fact, it is not easy, I suspect, to give it too strong in winter. Some of the virtues may pass away, but the bulk will be retained by the moist soil, and be imbibed by the roots to the certain benefit of the trees.

"I have used thousands of gallons of the contents of cesspools that could only be emptied in winter, with the most striking benefit to all kinds of fruit trees and bushes, which only needed sustenance to render them bearers of excellent fruit. As I gained courage from experience, the liquid was less and less diluted, and the stronger it was the more marked was the effect beneficially on the trees. If the soil is moist in summer, liquid manure may be given with advantage to fruit trees that obviously need support; but the very strong may need to be somewhat diluted. It is worse than useless applying it to dry soil, as it drains down leaving little of its virtues behind, and may in passing do injury to some of the roots; but apart from that the practice is wasteful, and therefore should be avoided.

"When travelling in Lincolnshire in August last year, I had the pleasure of calling on a clergyman, who is also an ardent gardener. I had known the old espalier and other trees in his garden for years. Many of them had the appearance of being worn out, and most persons of an improving turn of mind, with the means of carrying out their ideas, would have destroyed the old trees and planted young. Some were planted, but the old were retained and nourished. I was somewhat astonished to see the great change they had undergone since the previous year, thick, deep green leaves in place of the pale and thin; stout short jointed, well-fed wood in place of the weak; large fruit in place of the small; clean and rosy in place of the speckled and sickly hued. This rapid renovation had been effected by liquid manure given strong and plentifully in the winter.

"I had exactly similar experience in years gone by, and in the same village. Whether the vicar came to hear of this I know not, or whether he remembered something he had read on the subject, or whether it was a question of wasting the sewage or not, and so he ventured to try it on the old trees, not minding much if he killed them, I am not able to say. But the fact remains, he did pour the strong stuff into the ground when it was naturally wet in winter and the trees leafless; then when the spring came, and the summer advanced the sturdy shoots and thick dark leaves, the bold buds and good fruit told plainly that the food in solution given in winter when the trees were resting was not lost, but retained and appropriated. In no other way could the enfeebled trees have been improved so quickly, decidedly, and cheaply.

"It is nearly thirty years since some cesspools on the premises of a gentleman could only be emptied in the winter. The contents were applied to old trees in an orchard, completely saturating the ground, and there was no mistaking the effect of the application. It was then used in the garden, being given to trees of various kinds near the walls and in the open that appeared to need extra support, also to Gooseberries, Currants, Strawberry beds, and Raspberry plantations, with the most satisfactory results; indeed, for seven years they had no manure beyond the sewage, and this was given only in winter. The owner of the trees and bushes, and all else who knew them, were satisfied that they became much more healthy, and grew far better crops of fruit after being thus treated than they had ever done before, and canker wounds healed freely in some apparently worn-out Apple trees that were invigorated in the manner described. To be effectual, the application must be thorough, surface dribblings being of little use."

It may be thought, and is thought by some cultivators, that liquid-manure applied in winter passes through the soil into the drains. This is not so when the soil is moist, and not too sandy for fruit trees. The liquid is not lost, but filtered, that which is least wanted, then (almost pure water), passing away, that which is most wanted—the virtues of the liquid—being retained for the support of the trees. This any one can prove by experimenting with a large flower-potful of moderately firm moist soil.

In order to aid the penetration of the liquid quite down to the roots of trees, holes made with a crowbar are useful, particularly on sloping ground, filling them over and over again. These food receptacles should not be close to the stem only, for the most active-feeding roots are at a distance from it about equal to the spread of the branches. The deeper and wider and more numerous these conduits are the better, especially when they are afterwards filled, as they should be, with a rich compost rammed firmly. A mixture of loam, wood-ashes, and leaf-mould in equal parts, well incorporating with each bushel 3 or 4 lb. of superphosphate of lime, used in the manner suggested, will soon be taken possession of by a mass of fibrous roots, and the trees will be improved accordingly. I have seen some striking results follow that practice in the renovation of both fruit and ornamental trees on grass.

(To be continued.)

Plants and Their Culture.

Greenhouse Plants in Bloom.—Now that most of the Chrysanthemum plants are gone out of flower, many kinds of plants, if they have been grown to flower at this season, will take the place of those. Bouvardias claim the foremost place, as affording cut bloom, and otherwise being ornamental. These plants are of the most use when two lots of them are grown, one late, which should be kept as cool as possible, and the other beginning to bloom at the present time. Begonias of the fibrous-rooted species will now be showing bloom, and, like the Bouvardias, they should have been grown throughout the summer without artificial heat; if this has been done, they will be sturdy plants, that will afford a great lot of bloom when placed in a warmer house. Many of the evergreen species will, after the first bloom is over, give a succession if they are afforded a few weeks' rest; therefore it is not advisable to throw them away, unless there is a later succession of the same. Many of the deciduous or bulbous-rooted kinds will also bloom late if the seed was sown late.

Hard-wooded plants will now require much attention in watering, especially Epacris, Boronias, Tetratheca, Correas, Eriostemons, &c., which soon show signs of shrivelling if kept dry. Cyclamens should be put in a light place, and well supplied with moisture, always giving them some amount of ventilation during the early part of the day. Primulas, double and single varieties, will now be of good service, and, as I have previously observed, the old alba plena we still like best as a cut bloom. The plants in bloom will be the better for manure-water of some kind, to strengthen the bloom, and prolong its duration. Daphne indica rubra is charming at this date, and is a plant nobody should be without; the blooms are deliciously fragrant, and when cut they are the best of subjects for personal adornment. The plants dislike overpotting and excessive watering, otherwise it is of easy culture, liking warmth and humidity when out of flower and making its growth; the points should then be pinched off, so as to form a bushy habit. The growth must be well ripened, if bloom is looked for in the autumn. A drier house should be chosen for them after growth is made, and exposure outside for a short time in hot weather is good for them.

The hybrid Rhododendrons at this date are furnishing much bloom, and will continue to do so for some time if kept in a warm greenhouse. Any tying-in or shortening back of the shoots should be done when blooming is past, and before new growth is advanced. The early-potted Lachenalias are commencing to bloom, and will not be allowed to suffer for want of water at the roots, or of occasional supplies of weak liquid manure. Grow them close to the glass, or there will be weak spikes, and little colour in the flowers. The best plants I ever saw were grown under the roof in pans. Another plant not often met with, but which is equally good when grown in a good-sized pan in a warm greenhouse, is Tropæolum Ball of Fire. It flowers profusely in the winter, and looks well loosely hanging down from the roof, or loosely trained on the rafters. There are other varieties of this plant, but I prefer the one named for its beautiful scarlet colour and freedom to bloom.

Jasminum grandiflorum is another winter-blooming plant, good also for cutting. When a place can be given it in a border it grows very freely, and blooms all through the winter. Lapageria rosea and alba are splendid winter bloomers for a cool house. A flower that we have in quantity at this date is Bignonia Cheree. It is one of the best of plants for a wall or a pillar, and blooms when flowers are most prized. The bulbous-rooted Schizostylis coccinea is charming at this time of year, and is now flowering abundantly. The plants root freely, soon filling the pots, and plenty of root-feeding is necessary.
G. Wythes, Syon House, Brentford.

The Orchid Houses.

The East India-house.—The cold weather of the past week has required a lowering of the temperature in this house, and perhaps nothing could be better for the inmates than this kind of weather. The moisture in the air of the house should be at its minimum point, and yet not arid. If aridity should arise, a moderate amount of air may be allowed

ingress by the bottom ventilators, which will put matters right.

Spathoglottis Kimballiana is, perhaps, one of the easiest of plants to grow, and yet one of the most effective, and any plants of it that have made strong growth will, at the present time be throwing up their flower-spikes, and will be benefited by being afforded guano-water in weak doses about once a week, or at each alternate watering. Saccolabium giganteum and S. g. Illustre are very useful and effective Orchids in mid-winter, the beautiful flowers being deliciously scented. Watering of these plants must be done very sparingly at long intervals, otherwise "spot" will be very likely to show itself. Once Saccolabiums are affected with this malady, they are apt to suffer from it always, although they may seem to lose it the next season. It would be difficult to find a Dendrobium to compare with the true D. Goldiana as a winter flowerer, lasting in perfection, as it does, from two to three months. Paphinia grandis is an extraordinary flower, which may be almost classed with the perpetual flowerers; it has flowered with me for the third time this year on the same bulbs, which do not seem to be injured in the slightest degree; it should be grown in a basket in a little peat and sphagnum moss, and hung up to the roof of the Orchid-house. Very little material is needed about the roots, and it must be kept continually moist. The temperature of this house may safely be allowed for the present to reach 55°, and a degree higher or lower will do no harm.

Cattleya-house.—Christmas opens the season for Cattleyas, which will be in flower for five months in succession. Lælia anceps varieties are now commencing to open, and will keep up a good show until Cattleya Trianæ and C. Percivaliana come on. A lower temperature should now be kept here, very little water being put about on the stages, and if the syringing of these be done in the early part of the day, nothing more will be required, except damping the floor the last thing at night. I should here remark that the plants must not be allowed to suffer from want of water, and that shrivelling may be brought about by two causes, either from the plant being kept too dry, or overdone with water at the root; if the latter, the sooner it is taken out of the compost the better, or decay of the root will occur, seriously injuring the plant. Too much care cannot be taken in affording water, and each plant should be examined before doing so, water being supplied or withheld as may be indicated by the state of the leaves and the compost. Newly-potted plants in pots of large size, or those repotted within the last six months, will require very little water under any circumstances; on the other hand, plants which are becoming pot-bound, will require much water comparatively to keep them plump. Sometimes top-dressing is performed, which means the hiding of partly decayed materials with new. By the time the roots of the plant have seized on the latter the former will have become wholly decayed, and a state of ill health set up, involving complete repotting, which had better have been done in the first instance.

All such top-dressed plants require the greatest carefulness in affording them water. No harm will be done if the warmth of this house should fall 5°. *A. G. Catt, Parkfield, Hallow.*

Fruits Under Glass.

Vines.—The early Vines in pots, started in November, will now be getting active, and once the buds from point to base have started, the rods may be tied up to their supports. The weaker of all double breaks should be rubbed off, and as the bunches become visible the shoots should be neatly tied out, an operation that requires much care, the shoots being at that stage very brittle. In due course, these shoots will require pinching at the second or third joint.

It is much better to have a few strong shoots carrying good-sized leaves, and say half-a-dozen good bunches, than a quantity of weakly shoots and small leaves and bunches. The advantage of using fermenting materials in the pit, through the breaking stage, will now be apparent in the greater activity of the roots, some of which will appear on the surface of the soil. When top-dressing the pots, light loam, bone-dust, charcoal, and fresh dung from corn-fed horses should be employed, and the rule is to give little but often. As top-dressing is a chief factor in pot-culture, a quantity of it should be kept in readiness in a warm place, where it is not so warm as to induce fermentation. After this stage it will be well to allow the heat of the fermenting material to subside, for if the atmospheric moisture be continuous and excessive, the foliage will be soft and flabby, and unable to stand sunshine at a later date. The opposite extreme of a too dry air must be avoided, and the syringe should be used with judgment in wetting walls, floors, &c. A rise of 5° day and night may now take place, but not all at once. Ventilation is difficult at this season; and some means of moderating currents of cold air must be adopted, such as covering ventilators with close-meshed netting or coarse scrim canvas, and avoiding the opening at one and the same time of the top and bottom ventilators. If the latter are fixed near the pipes, they are the best to make use of, the laps of the glass in the roof allowing sufficient ventilation at the top. Bad ventilation and an excess of atmospheric moisture produce warty thin foliage and aëriel roots on the stems—undesirable signs always. Six good bunches of Black Hamburgh, Madresfield Court, or Foster's Seedling, and eight or nine of the Frontignan or Royal Ascot sections, are sufficient for a Vine in a 12-inch pots and a smaller number if the Vines are weak, or the roots not too abundant. Avoid heating the pipes highly at night, and do the forcing mostly by daylight, little though it be—the maximum warmth being given about noon. Thin the crop to the desired number of bunches as soon as possible, but do not reduce the amount of foliage hurriedly.

Succession Vineries. — The walls, &c, of these should be cleaned, loose surface soil removed, and everything got ready for starting; five to six months being allowed for ripening the crop. Late vineries, in which Grapes intended for bottling, are still hanging, must be kept dry, cool and moderately ventilated, whenever air can be admitted safely. A temperature of 55° to 60° by day, and 45° by night, will favour good keeping, as there will then be neither damping nor shrivelling; and the internal borders may be covered with a fair thickness of dry straw, which will arrest the ascent of moisture, and prevent dust arising. The external borders should also be covered with litter that will not ferment, and if it can be covered with a waterproof covering it will be better for the Grapes. Examine the bunches at least twice a week, cutting out all mouldy berries.

If the Grape-room has been cleaned out, the remains of crops of Black Hamburgh, Black Alicante, West's St. Peter's, Black Morocco, Mrs. Pince, Mrs. Pearson, Gros Maroc, and Muscat, may now be cut and bottled, for if the leaves have dropped, these varieties will keep better when cut; moreover, the pruning, &c., may be performed, firing dispensed with, and thorough rest secured. Lady Downe's and Gros Colmar, on the other hand, are improved in flavour by being left on the Vines until the new year, and for some time after their leaves have fallen. If two table-spoonfuls of syrup (dissolved lump-sugar) be added to each pint and a-half bottle of water, the flavour of all kinds of Grapes is well preserved—so I am told by those qualified to judge, who are large consumers of Grapes. *W. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

The frosty weather has put a stop for the present to the pruning and nailing of Plum, Cherry, and Pear trees; and wheeling of manure on to fruit borders and plantations has taken their place instead. Wherever fruit bushes or trees of any form show signs of poverty in the soil, by weak growth, manuring is called for, which may be best applied in light land as a mulching. Dwarf trees and bushes on Paradise stocks can seldom have too much manure when in fruit; on the other hand, trees on free stocks require manure only as a mulching, for it often occurs that these run to wood, and do not fruit much or at all, to correct which, root-pruning must be persistently carried out.

Most large gardens have a dépôt for rubbish, soils, manure, leaf-mould in heaps of different ages, which in all cases should be kept apart. Once a year, at least, there should be a burning-up of rubbish, and a thorough cleaning up, and weather like the present is well suited for this kind of work. Rubbish, when burnt, should be sifted and put away in a dry shed, or stored in empty barrels for future use. All weed heaps should be spread out in layers, and each layer sprinkled with quick-lime, and if road-scrapings or ditch-cleanings are at hand, these may be laid 4 inches thick between the various layers, and after the heap has laid for a few months it should be turned over, and mixed well together; it makes capital surfacing for fruit and other borders.

Collection of Scions for Grafting.—When pruning, shoots should be saved for scions, from select varieties of the various garden and orchard fruits, especially those that do best in the locality; burying them in a cold place till wanted in the grafting season. In doing this, lay them in a thin line in a trench, and not in bundles which get dry in the middle, and nearly cover them with soil. A few Crab trees should be found in every orchard where space is not too precious. A worthless Apple tree may be grafted with a Crab, and it will soon make a good head. The trees are very handsome when in bloom, and in autumn when covered with the small bright coloured fruit. The Dartmouth Crab is one of the handsomest, and is a great bearer; then there are the ordinary Siberian and Japan Crabs, all pretty as well as being useful for preserving. Mulberries should not be forgotten, and a few of them give a nice diversity of foliage, which every one admires. *A. Evans, Lythe Hill, Haslemere.*

The Kitchen Garden.

Forcing Pits.—The forcing of Asparagus will now claim attention in most gardens, and the roots to be forced may consist of those forming one or more of the permanent beds, or those specially grown for the purpose of being forced. The former is the plan most commonly adopted in private gardens, new beds in number equal to those taken up and forced being planted each year. No plants should be forced which are less than four years old; and in fact if much older provided they have plenty of roots, the produce will be more abundant if not quite so fine. Pack the roots together on a bed of leaves in a frame or brick pit, and cover them with light soil or leaf mould to a depth of 3 inches. The bottom heat may not be more than 80° at this season. As soon as the shoots appear, air may be admitted in small amount; this will improve the flavour of the vegetable. After planting the roots, and at intervals, thoroughly soak them with water at a temperature of 85°. Do not let the shoots remain after they are sufficiently long, but cut them off close down to the crown, being careful not to injure buds that may be pushing up. Asparagus will keep fresh for several days if the butt ends are placed in water.

Rhubarb.—The roots in number, according to the demand, may also be packed closely together in good soil, and forced as is Asparagus, except that it does not require a higher degree of warmth than 55° to 60°. It is usually put into the Mushroom-house or similar place, or is forced under pots or boxes by means of leaves and manure, but the best flavoured produce comes from plants that are grown in the light.

The Open Ground.—Advantage should be taken of the frosty weather to wheel on to quarters standing in need of it, and which will be deeply trenched, the heap of garden refuse; this kind of stuff is excellent for poor soil, and for many sorts of vegetables if fresh lime has been mixed freely with it, and the heap turned over once or twice. Manure generally should be got on to the land, and left in small heaps for the present.

Potato sets and the store of usable tubers will stand in need of examination, sprouts rubbed off, except those sets that are required for early planting, and diseased tubers picked out. Onions in store should likewise be looked over, and decayed bulbs removed; to prevent loss, the largest and those with thick necks should be used first. Keep a good supply of Celery, Horseradish, Parsnips, Rhubarb and Seakale roots, &c., in store. These roots keep sound for several days in cool, frost-proof sheds, or in heaps out of doors heavily protected with litter. Labels should also be made in various sizes during bad weather, tied up, and kept in readiness; also tools repaired, and everything put in good order for work. *H. Markham, Mereworth Castle, Maidstone.*

EDITORIAL NOTICES.

Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week. Specimens should be carefully packed and numbered, and not more than six should be sent at one time.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, *and sent as early in the week as possible.*

Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are solicited.

NEWSPAPERS. — *Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY, DEC. 22 { Dutch Bulbs, at Protheroe & Morris' Rooms.

TUESDAY, DEC. 23 { Lilies, Plants, &c., at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—38°.6.

*** Secretaries of Societies, and others, are earnestly requested to forward immediately, the dates of Show fixtures and Meetings of horticultural societies of any kind for 1891, for insertion in the Almanac, to be published in our issue for January 3.

Fogs and Vegetation.

SOME short time since, when dealing with the subject of trees and shrubs for towns, we had in view more especially the central and more smoky quarters of London, where the conditions are about as unfavourable to the growth of plants as they can be anywhere where the atmosphere is not charged with acid vapours from chemical works. Just now, when we are often enveloped in fog, and are compelled to use artificial light from early morning till late at night, it is not inappropriate to recur to the influence of fog on vegetation. The subject is receiving attention from the Scientific Committee of the Royal Horticultural Society, who have deputed a subcommittee of botanists and chemists to make experiments, and similar observations will be made in Manchester. In the meantime, gardeners can furnish valuable evidence on the condition of plants under their charge. Accordingly, we asked Mr. HUDSON, of Gunnersbury, a suburban locality in the vicinity of Brentford, to favour us with his experience in the gardens under his charge. This he has now done, in the following communication :—

"I had been accustomed for many years to see in Sussex and Surrey very fine specimens of the Coniferæ in great variety, thriving luxuriantly. Upon first taking notice of the miserable blackened examples in the vicinity of the metropolis, which in very many instances could be said to be barely existing, and were in no way ornamental, my first surmise was, that the fault lay with the gardener. I soon found, however, that this was not the case; an examination of the soil showed me that it could not be better. After a turn of such weather as we have lately experienced, I had not far to seek for an explanation, yet I could not then persuade myself but that many of the Conifers might be induced to thrive, and introduced numbers of them from the nurseries. I have found, however, that it is almost useless to plant any of the finest varieties of Pines; Spruces, Cupressus, Junipers, and common Arbor-vitæ likewise failing. Anyone who is a close observer may notice, when approaching the metropolis, that there is a gradual diminution in the number of Coniferous trees the nearer he gets to it, and the vigour of those which do exist is much less than in the country some distance away. As one nears London during the winter season, the large deciduous trees stand forth in the landscape like so many ghosts, or relics of bygone vegetation. This in itself is abundant evidence that to the deleterious constituents of the atmosphere about London must we chiefly attribute the falling off in numbers and vigour just alluded to. My own observations lead me to believe that the greater part of the harm is caused during the winter season, from November to February. The deposit which is then left upon our glass-house roofs is of an adhesive nature, and it is not removed by a heavy downpour of rain, but has to be loosened first, and then washed off. The same deposit falls, as a matter of course, upon the trees and shrubs, some of which succumb whilst others thrive.

"The Firs are peculiarly adapted to receive and retain this deposit, both by the form of leaf and branch, and their adhesive exterior, save the leaves only, and the pores are frequently choked, and growth, in consequence, weakened. Those of the Fir family which I have noted as resisting these malign influences the most successfully are the Himalayan Pine (Pinus excelsa), which grows well. In fact, its leaves are, I think, even longer than I have seen them in the country, whilst its cones are large. Our specimen of it measures 36 feet in diameter, and 45 feet in height. Being of such distinct colour and growth, this tree is a decided acquisition in this and similar localities. The Austrian Pine also thrives remarkably well, and from the very dark colour of its foliage, it forms quite a contrast to the foregoing, with its glaucous, bluish-green leaves. For a very exposed situation, I think this Pine is the best kind to plant under our atmospheric conditions.

Pinus cembra also grows well, but naturally takes some time to develop into a good-sized tree. The dwarf form of this Pine (P. cembra pumila), is a capital plant either for rockwork or places where a dwarf growth and compact habit are desirable. Araucaria imbricata stands smoke well, and our finest tree measures 40 feet in height with a diameter of 26 feet. It was planted about 1856, when without any doubt this locality was much further from building than it now is, and this may be the reason of its having grown so well. It is only about 1 foot above the water-level of the adjacent lake, but the gardener who planted it told me that he took special precautions to drain the subsoil well. The common English Yew thrives as well as any one could desire, appearing to be quite at home. This should, I think, be planted a great deal more than it is, and when well established, should be encouraged to assume the tree-like form as much as possible. It makes a fine feature when from 30 to 40 feet in height; when thus grown it looks best upon a single stem.

The golden form of English Yew does equally well, and is a valuable and distinct variety, imparting a colour that is desirable, contrasting so well with the more sombre greens. The Irish Yew is also a reliable plant, growing as well as one could wish. Cedrus Deodara, where of good size, keeps in good health, and grows freely; of such, there are some capital specimens about here. I am somewhat doubtful, however, if young plants, from a purer atmosphere, could now be induced to thoroughly establish themselves and grow into good specimens. The large trees of the Cedar of Lebanon, of which there are several in this locality, are still holding out, but either their age or the atmospheric conditions is telling upon them The Atlantic Cedar is very much disposed to cast its leaves prematurely in the spring, and does not appear to be at home. Cupressus Lawsoniana (and some of its best known forms) thrives remarkably well, and is decidedly a valuable plant. Cupressus nutkaënsis (Thuiopsis borealis) and Thuia Standishii are both doing well, the dark green of the former and the pale green of the latter render each kind equally valuable for planting. I do not think the last-named is nearly as well known as it should be. It is a good plant for a moist soil. The three Conifers just named are, in my opinion, the best in their way that could be chosen for this and similar localities. The Hemlock Spruce (Abies canadensis) does very well, but will not grow into any great size. Juniperus chinensis (mas.), is a hardy subject, and stands well in an exposed situation; ours having grown too tall, I had to shorten them down, this they do not seem to resent. Thuia gigantea I have not tried, but I am inclined to think favourably of it from its sturdy habit and rather glossy foliage. Salisburia adiantifolia is doing as well as one could wish upon a wall. The deciduous Cypress I have not under my charge, but it is in fine condition at Syon House, not much further removed from London than we are.

"Of the Conifers which I have found to fail, and many of which have had to be removed, there are some of our best garden plants; Sequoia gigantea (Wellingtonia), after a long struggle, has succumbed. When cut down it measured about 35 feet in height; latterly the points of the young shoots used to die off in the spring, then the succeeding growth was weak. Abies pinsapo became at last almost deciduous, annually losing its leaves in great numbers early in the spring, the leader being quite bare. I have cut down two examples of this fine Conifer since 1876, one over 30 feet high. Abies Nordmanniana has also in two instances shared the same fate, one had been growing for some years, the other only a few seasons planted. Abies Douglasii has also had to be removed, becoming quite unsightly at last. In all of these and other instances the soil could not be found fault with, nor the planting either; most of the latter was done by my predecessor, who was a painstaking gardener. Of the smaller Conifers, Retinosporas are a failure, and one or two which still exist, are scarcely worth keeping. Cryptomeria elegans will grow fairly well for a season or two, but then gradually succumb to the inevitable. C. japonica is no better, looking very lean and bare. The Chinese Arbor-vitæ are not a success, and do not thrive for any length of time. I cut down, what should have been a fine specimen, last spring, of Thuia occidentalis (the American Arbor-vitæ). I have not made any trial of these fine Silver Firs, Abies nobilis, A. cephalonica, and A. concolor, but am very doubtful if either would succeed if planted here.

Of other evergreen shrubs, there are some which stand out prominently for their great usefulness. With me Aucuba japonica (fem.), grows as well as any one could desire, and is, therefore, freely used. The Hollies are also excellent in every way, in fact they grow better than one often sees them far removed into the country. Both the green forms and the gold and silver variegated kinds all do well, and make fine specimens; the green-leaved sorts are, of the two, a deeper green than country examples. They berry fairly well, but the birds, from want of other food or from some other cause, often denude the bushes almost before the berries are well coloured.

"Mahonia (Berberis) aquifolium is another valuable shrub, especially if kept dwarf. The fine large-leaved kinds do not thrive, but B. Darwinii does fairly

well, and bushes of Buddleia globosa grow and flower freely.

"The green and variegated Box do well.

"Of the various Laurels, I prefer the Portugal to the common one, but I have a high opinion of the rotundifolia form of the latter, but it is not planted in this garden. As an evergreen climber or wall plant, Cotoneaster microphylla may be highly commended, thriving vigorously even in poor soil. Cratægus pyracantha does well, fruiting freely.



Fig. 142.—Lord Suffield Apple tree at Holm View, Lowestoft.

"The Escallonias, particularly E. macrantha, grows and flowers profusely, if protected from the east winds. As a wall plant, Euonymus japonicus can be recommended, but not in the open. E. radicans variegata, however, is quite at home, and very useful in place of the dwarf Box, or as a change thereto for edgings. Garrya elliptica (mas.) is first-rate for walls, producing an abundance of catkins in the spring. Except in severe winters, the Sweet Bay does fairly well. Of the Privets, Ligustrum japonicum is the best. I have been surprised at the length of the shoots made by this shrub in a very poor soil. Magnolia grandiflora against a south wall very rarely suffers. The Osmanthus, especially the green-leaved O. ilicifolius, is now being inquired after for town and suburban gardens, having proved itself to be a valuable plant.

"The evergreen Oaks do very well, but I do not recommend them, unless to be preserved where of extra size. They are too sombre in appearance, and even more so when covered with blacks. Ruscus aculeatus (the Butcher's Broom) is a useful dwarf plant, doing well in the shade, in poor soil, and in dry places. The Brooms (Spartium) are inclined to grow too tall, and do not make back growths. Of the Veronicas I have only seen V. Traversii in anything like good order. This variety may be grown. The Laurustinus grows well enough, and also flowers freely. Yucca gloriosa and Y. recurva have both succeeded fairly well with me without any protection; in fact, I do not believe in the covering up of these at all, the plants being made all the more tender in the centre, and the older leaves crippled.

"Ivies are quite indispensable in the numerous varieties; I have noted, however, that the Irish Ivy has its foliage injured in exposed places in the spring, half of the individual leaves sometimes being turned brown; H. h. dentata is worthy of much more extended cultivation.

"Of the American plants the best are the Rhododendrons, but these even do not thrive nearly so well as formerly. We suffer from drought in dry seasons, and the Rhododendron is generally the first to give out; in a moister soil they might grow fairly well. I have noticed that R. Everestianum, one of the Catawbiense section of Rhododendrons, does better than most other kinds, and this section may be recommended for general planting, because of its hardy character; so also R. ponticum. Seedlings of both of these are to be preferred as a rule, their growth being more robust. Andromedas and Kalmias are quite failures with me; also the hardy Ericas. Failures with other evergreens occur in the case of Arbutus, which grows, but does not form a shapely plant at all; the Ceanothus cannot be relied upon, even against a west wall; the Daphne does not do at all well; and the Skimmias never assume their true character, or have a good crop of berries.

"The deciduous trees and shrubs cannot be found much fault with, on the whole—in fact, they may be put down as satisfactory. This fact goes to strengthen my opinion that the greater part of the injury is done from November onwards, when fog is most prevalent, and not so much to the woody growth itself. When the foliage of evergreens is injured, the plant itself must suffer in after-growth, and be more or less weakened. If the Azaleas of the 'pontica' and 'mollis' sections were evergreens, I think they would, to some extent, be injured; whereas, the functions of the leaves being fulfilled, and the leaves being on the point of dropping before the fog season comes on, not much harm ensues. A. pontica (the common yellow form) does very well indeed here. Catalpa syringæfolia grows exceedingly well, and flowers most profusely every year, often swelling off a number of its Vanilla-like seed-pods. The Tulip Tree grows and flowers well, so also do the Pyrus sinensis (the Chinese Crab), and Cercis siliquastrum (the Judas Tree); the latter is now well exposed to the sun. Magnolia conspicua is nearly every spring a very fine sight with us, often lasting quite three weeks in good condition. I wonder why this fine tree is not planted more than it is. Spiræa Lindleyana does well, always flowering profusely, its foliage being also an ornament in itself. Other well-known shrubs succeed in a satisfactory manner. The Wig tree, Rhus cotinus, is a failure. Of Roses, I find that standards and half-standards are preferable to dwarfs; with me they always flower more profusely, and continue in good condition for years. I have now some fine heads of standards which were planted in 1876, and after a removal last winter are now thriving better than ever. I do not find it advisable to prune very close; all the same, overcrowding of shoots or plants must be avoided. Overcrowding in the case of shrubs must eventually end disastrously. By avoiding this evil the wood is better ripened, and this even is not such an easy matter to accomplish by a long way as in country gardens; hence in a severe winter we suffer more relatively speaking than do our more fortunate neighbours. The production of extra vigorous growth by manurial stimulants is not to be recommended, as the shrubs must also suffer in the long run. I make it a practice to dig amongst the shrubs after the fall of the leaf, and bury a large number of leaves in the process; this I consider better than raking out the leaves, minus the digging. *Jas. Hudson, Gunnersbury House.*

Lord Suffield Apple. — Our illustration shows a low standard tree of this famous early variety of Apple, as it grows in the garden of W. F. Larkin, Esq., Holm View, Lowestoft. There are doubtless many more such trees in the country, but few we may suppose that occupy so peculiar a position. Holm View stands on Kirkley Cliff, at about 50 feet above sea level, and the fruit garden, if the trees are to retain their fruits until they

mature, must be exceptionally well sheltered from the north and east. The gardener, Mr. MacMath, tells us that Apples and Pears were not so plentiful as usual this year, from which we may infer he never has a bad year—which good fortune is chiefly due to the proximity of the sea, and consequent absence of severe frost, and the retarding influences of the sea breezes on the flowering period. As some of our readers may be aware, Lord Suffield Apple was raised by Thomas Thorpe, Boardman Lane, Middleton, Manchester, and was first distributed about 1837. The name it bears was given it on account of Lord Suffield being at the time Lord of the Manor of Middleton. It is an excellent culinary fruit, fit for use during August and September. It is a free setter, but by picking some of the fruit whilst they are still immature, the remainder will usually attain a large size. We should call it a fine variety of the Codlin type.

Horticultural Club.—There was a large gathering of the members and their friends on Tuesday evening, Dec. 9, at the rooms, Hotel Windsor, Victoria Street; the chair was taken by Mr. John Lee, Chairman of the Club, and there were present: the Rev. W. Wilks, Rev. F. R. Burnside, Rev. F. H. Gall, Messrs. Girdlestone, H. J. Pearson, A. H. Pearson, G. Mount, R. Bloxam, Wallis, Jefferies, H. Turner, Lindsell, G. Paul, G. Paul, jun., T. Francis Rivers, and W. H. Williams. In the evening a discussion took place on the subject of Rose Stocks, which was opened by Mr. T. W. Girdlestone, who gave the result of some experiments he had made with various stocks, and stated that he believed that the Polyantha would prove one of the most useful stocks of the future; a very interesting discussion took place, in which Messrs. Rivers, G. Paul, and many of the members took part, and a very pleasant and profitable evening was concluded with a vote of thanks to Mr. Girdlestone for his excellent lecture.

Die Gymncspermen.—Dr. L. Celakovsky has recently published an important memoir on the morphology of the Coniferæ. Welwitschia is made the type of a family Welwitschiaceæ as distinct from Gnetaceæ.

Vegetable Teratology.—The publication, in 1886, by Dr. Dammer, of a German edition of Dr. Masters' *Vegetable Teratology*, may be said to have placed before the botanist the materials for future study and development, arranged according to the structural modifications brought about by excess or defect of growth, or other causes affecting the organs of plants. Dr. Penzig, of Genoa, has now issued the first volume of a treatise in which the plants mentioned are grouped systematically under their several natural orders, so that the student wishing, for instance, to know what malformations have been recorded as having been noted in Ranunculus acris, has only to turn to Ranunculaceæ in Dr. Penzig's volume to find them all set out in order with appropriate bibliographical references. In a similar manner the literary references, which in preceding books are scattered under the headings to which they specially refer, are here all brought together at the beginning of the volume, together with several additional references, making the bibliography as complete as possible up to the year 1889. A glossary of the terms used is given in the beginning of the book. The present volume of 529 pages contains only the polypetalous orders. We hope soon to see the issue of the succeeding volumes, When completed, the student will have an immense body of facts before him, arranged both according to their morphological structure and their filiation. It is now important to study the facts so arranged in connection with the mode of development, not only of the "members," but also of the tissues of the plants affected, and especially in a comparative manner, so that we may ultimately get to know what was the original state of things, how and why modifications have occurred, and what are the genealogical relations so brought to light. Plenty of work for the future! Dr. Penzig's most useful and carefully-compiled volume may be had from the author, Botanic Garden, Genoa, or through any foreign bookseller.

"The Botanical Magazine."—The 116th volume just completed is dedicated by its Editor, Sir Joseph Hooker, to Mr. G. F. Wilson, of Weybridge, thus enabling the Editor "to add one more name, and that a most worthy one, to the long list of zealous skilful, and disinterested devotees of horticulture, whose services have been commemorated in successive annual issues of this work."

The following plants are figured in the current number:—

Rhodostachys andina, t. 7148.—This is the Bromelia longifolia of Lindley, and the Ruckia Ellemeetii of Regel. It is a native of the mountains of Northern Chile, and bears a head of pink flowers nestling in a tuft of numerous linear, channelled, sharply-toothed leaves. It requires cool treatment. Hort. Godman, Elwes, Kew.

Rhododendron Boothii, t. 7149.—A Bhotan species, like R. ciliatum, but with yellow flowers. From Mr. Mangles' collection.

Arisæma fimbriatum, t. 7150.—This is the extraordinary, and by no means unattractive, Aroid, first figured and described in our columns in Nov. 29, 1884. At the time, we were told that it came from the Philippine Islands, but there is reason to suppose that it is a native of the Malayan Islands, specimens existing in the Kew herbarium gathered by Curtis on Langkawi, an island off the west coast of the Malay peninsula.—Kew.

Scaphosepalum pulvinare, t. 7151.—A genus separated from Masdevallia by Pfitzer and adopted by Rolfe. The present plant is the Masdevallia pulvinaris of Reichenbach (*Gardeners' Chronicle*, Feb. 14, 1880, p. 200). The distinctive character resides in "the superior lip, the free, or all but free, dorsal sepal, the lateral sepals connate in a boat-shaped form under the lip, and the strongly recurved crumpled lip." The yellowish-brown flowers are produced in erect racemes, and the plants, apart from their botanical interest, have not much to recommend them to gardeners, except the fact of their continuous flowering, a plant having been in bloom at Kew for nearly twelve consecutive months, and appearing as if it would continue to do so for another year!

Thalictrum Delavayi, t. 7152.—The elegant lilac-flowered Chinese species figured in our columns in Aug. 2, 1890, p. 125.

Garden Scholarships.—Two scholarships will shortly be awarded after examination, at the Missouri Botanical Garden, St. Louis. It will be remembered that the founder of the garden, the late Henry Shaw, desired, among other things, that adequate theoretical and practical instruction should be provided in America for young men desirous of becoming gardeners. The trustees, in carrying out his wishes, have enacted that garden-pupils will be received after examination, and that during their first year they will work at the practical duties of the garden for nine or ten hours daily, and will be expected to read notes and articles referring to the subject of their work in one or more journals. In the second year they will have five hours practical work daily, and will be instructed in various branches, and they will be expected to read the current gardening literature. In the third year five hours daily work will be required, and instruction will be given in forestry, botany, landscape gardening, surveying, draining, and the pupils will be required to "take charge of clipping or indexing some department of the current gardening papers for the benefit of all." In the fourth year, besides the customary work, the pupils will study the botany of weeds, vegetables, and fruits, assist in indexing or clipping, and will be taught simple book-keeping and the legal forms for leases, deeds, &c. In the fifth year, practical work, as before, together with the study of vegetable physiology, economic entomology, and fungi, especially those which cause diseases of cultivated plants; and each pupil will be expected to keep the accounts pertaining to some department of the garden. In the sixth year the manual work will be continued, and attention paid to the botany of garden and greenhouse plants, Ferns, and trees in their winter condition, &c. The aim is to give the best theoretical instruction possible, but it is not intended to make botanists of garden-pupils, but practical gardeners. Each scholar will receive from 200 to 300 dollars per annum, together with lodging and full tuition, and if he does well after the six years' curriculum he will receive a certificate of proficiency on leaving.

The Potato Plague in Ireland.—Mr. James Macdonald has reprinted from the *Scotsman* a series of letters addressed to that journal, and giving the results of an exhaustive investigation into the extent of the Potato plague in Ireland in 1890. Mr. Macdonald seems to have arrived pretty much at the same conclusions that other observers have done as to the amount of loss sustained by the farmers in the south-west and west of Ireland. Considering the measures to be taken in employing the labourers, Mr. Macdonald does not think serious privation is likely to overtake any very large section of the Irish peasantry through the deficiency in the Potato crop. He points out how greatly the disease is fostered and promoted by the carelessness and negligence of the farmers, and enumerates the principal remedies that have been suggested. He does not favour the high moulding system, which on a small scale produced such excellent results at Chiswick. Nor does he say anything of the advantages to be derived from the use of copper sulphate. The Irish peasantry are far behind the Americans in energy, or they would have tried many of these remedies before now.

Fruit Culture.—On Thursday evening, the 4th inst., Mr. W. Roupell, F.R.H.S., addressed the members of the Streatham Hill and Tulse Hill Institution upon this subject. The lecture, which was of a comprehensive character, was illustrated with some fine specimens of the best varieties of Apples, some of which had been previously exhibited at the Fruiterers' Show in the Guildhall. Reference was made to the useful work that was being done by the British Fruit Growers' Association; and some samples of preserved fruit from Lord Sudeley's fruit farms in Gloucestershire were shown and commended.

Cirencester.—A Chrysanthemum Society has been formed during the past week in Cirencester, and a provisional committee elected to conduct the preliminary work with respect to its future operations. It is purposed to hold the first show in the Corn Hall in the ensuing year—one we hope of a successful series.

The Frost in Belgium.—The recent severe frosts, especially for the first day or two, caused serious damage in Belgium, not only to horticulturists and amateur growers, but to market gardeners and fruiterers. We know of one amateur who lost the first night about 500 kilos. [more than 9 cwt.], of Apples and Pears. Among the Apples were a great number of the newest sorts, which the proprietor had hoped to be able to submit to the judgment of connoisseurs. The thermometer fell, on the night of December 9, to —8° C. = 18° F. (14° of frost); the wind was in the N.W.

National Pink Society.—It is announced that an exhibition of Pinks, under the auspices of the above, will be held in conjunction with the Wolverhampton Horticultural Society's show next year, on July 14 and two following days.

Mr. Henry Bennett's Roses.—We hear from Messrs. W. Paul & Son that at the sale of the late Mr. Henry Bennett's Roses on Tuesday, December 16, the entire stock of the new Tea-scented Rose Lady Henry Grosvenor passed into their hands, as well as a large quantity of unnamed seedlings,

both tea-scented and hybrid tea-scented. The only other named seedling, H.P. Captain Hayward, also found a purchaser, its destination, as stated at the sale, being the United States.

Horticultural Meeting in Ghent. — In spite of most unfavourable weather, fourteen Orchids were shown. Certificates of Merit were obtained by:—1st, MM. Vervaet et Cie, unanimously, for a splendid hybrid of Cypripedium venustum × Boxalli, one of the best varieties which have been obtained for a long time; the flower shows the characteristics of its parents very markedly. 2nd, To M. Hye-Leysen, for Odontoglossum mulus, in full beauty; rarely has a better coloured flower been seen. 3rd, to the same grower who showed an unusually fine bloom of O. guttatum, which received a Certificate of Merit. A like award was made to 5th, Brassia caudata, from M. Van Imshoot. Honourable mention was made of Cypripedium Harrisianum vivicans, from M. Pynaert; Cattleya maxima peruviensis, from M. Van Geert; Oncidium Jonesianum var. gloriosum, from M. Schmitz; Cypripedium Moulmainense, from MM. F. Desbois et Cie; and a species of Lælia shown by M. Van Imshoot.

Nottingham and Notts Chrysanthemum Society.—The Chrysanthemum show of the present year was what it had never been before in Nottingham—a financial success. It is intended to amalgamate the Society with the National, and to give substantial encouragement in the form of prizes at the next show, to be held in November.

Dutch Horticultural Society. — At a meeting of the above held on November 12, first-class certificates were awarded to Messrs. E. H. Krelage & Son, Haarlem, for Lilium neilgherrense, Watsonia iridifolia var. O'Brieni, and Nerine pudica; and to Mr. J. J. Kruyff, Sassenheim, for Disa grandiflora.

Messrs. Sutton.—The *Times* of the 16th inst. has a long article detailing the proceedings on the occasion of the installation of H.R.H. the Duke of Clarence and Avondale as Right Worshipful Provincial Grand Master of the Masonic Province of Berkshire. Of course after such an elaborate ceremonial a banquet was necessary, for Masons are but men. The banquet took place in a large room on the premises of Messrs. Sutton & Sons. Nowhere else in the town of Reading could sufficient accommodation be found for the large company which assembled on this occasion, space being secured to accommodate, if necessary, 1000 guests. After the installation, H.R.H. the Prince of Wales, together with the Duke of Clarence and Avondale, and the Duke of Connaught and Strathearn, and the various officers of the Grand Lodge and Provincial Grand Lodge, proceeded to Messrs. Sutton's, where they were received by Mr. Martin Hope Sutton. Mr. Sutton, who introduced to His Royal Highness the other members of the firm, then conducted the Prince of Wales and the distinguished company to the banqueting-hall, which was beautifully decorated. The main entrance was adorned with Palms and evergreen shrubs, with a bordering of red Cyclamen (Vulcan) and white Cyclamen (Butterfly) embanked in moss. The plants and flowers, together with the encaustic tiles and crimson cloth laid upon it, made an effective and beautiful entrance. Before the banqueting-hall was reached there was a considerable length of passages to traverse, and all of it was decorated *en suite*, the lighting being effective and varied, consisting of electric, gas, and oil lamps. The prevailing colours, besides the green of the foliage, were red and white, there being also introduced crimson Tulips and the red berry of the Solanum, relieved by well-bloomed Primulas. In the centre of the raised platform in the banqueting-room was a canopy, under which the royal visitors sat. There was a long cross-table and fifteen others, accommodating some eight to nine hundred guests. The room, which is usually used for executing orders for farm seeds, had been artistically decorated. All around were curtains, and the windows were filled with flowers; the roof was covered with material in narrow red, white, and blue stripes, and innumerable shields and trophies were arranged in every suitable point. Special lights were introduced, making the scene most striking and brilliant. In the banqueting-hall, as in the entrance, the "leading idea" was red and white, and a most beautiful effect was produced with white Primulas and red Cyclamen. Just in front of the Grand Master was a margin of Fern-leaved Primulas, not in flower, and an attractive bed of Cyclamen and Primulas in full bloom; and similar plants were grouped on the various tables. In the course of his remarks, H.R.H. the Prince of Wales said:—"And we also, thanks to the kindness of Messrs. Sutton, have this spacious room for our banquet. Though we are here as masons, and not, as is generally the case as seedsmen, still I hope that the good seed sown to-day will take root, and that, as freemasonry is increasing and flourishing throughout the kingdom, I have little doubt that in this province of Berkshire it will equally flourish and increase. At the same time at which the Masonic banquet was being held, Messrs. Sutton entertained the Worshipful the Mayor of Reading and a large number of visitors who were not Freemasons to a handsome luncheon in the Abbey Lecture Hall, a spacious room also attached to their establishment. Mr. Mr. Martin John Sutton presided, and was supported by the Mayor of Reading (Mr. Heelas), the Recorder of Reading, Messrs. Martin Hope Sutton, George Palmer, A. Sutton, W. J. Palmer, Blackhall Simmonds, James Simmonds, J. O. Taylor, H. B. Blandy, Nalder Clarke, Arthur Hill, the Town Clerk of Reading, Col. Burritt, &c. A very pleasing finish was given to the proceedings in the entertainment by the Messrs. Sutton of about 600 of their *employées* and friends in the evening in the banqueting-room.

The Jardin des Plantes.—Botanic gardens of the old-fashioned sort, such as one sees still in the smaller university towns of Germany, are the subject of ridicule amongst gardeners who happen to see them. However widely they diverge from a gardener's notion of what is fitting, it must never be forgotten that such gardens are not, and never were, intended to be show places; that they exist for certain defined purposes only, such as the supply of illustrative specimens for students, and that they are maintained by a staff and at a cost which an English gardener would consider ludicrously inadequate. The Jardin des Plantes at Paris has more varied functions to perform; it is at the head of all similar institutions in France and her colonies, in active daily communication with them, as well as with French horticulturists and amateurs generally; its history is an impressive one; its traditions are grand. The men who have been associated with it have, indeed, been masters in science. Those interested in this famous old garden will be pleased to learn that, under the administration of Professor Cornu, it has taken a new lease of life. Improvements are visible in all directions; new houses have been constructed, old ones repaired, the collections judiciously overhauled, and the standard of cultivation raised. The great drawback, next to Ministerial *insouciance* and indifference, is inadequate financial support. The wages of the labourers are very low for those who have to live in a great city, and not sufficient to retain them in the service of the garden for any length of time.

Tomatos. — As a result of experiments and observations carried on at the Agricultural Experiment Station, at Cornell University, Ithaca, New York, Messrs. Bailey and Munson conclude that:

1. The Tomato plant is quickly susceptible to careful selection.

2. As elsewhere in the vegetable kingdom, the character of the plant as a whole appears to have more hereditary influence than the character of the individual fruit.

3. Very heavy manuring does not lessen productiveness.

4. Neither nitrate of soda nor muriate of potash alone are profitable Tomato manures upon thin soil.

5. Very early setting of stocky plants in the field, even in dark and raw weather, augmented earliness and productiveness.

6. Seedlings gave far better results than cuttings.

7. Trimming the plants lightly late in summer gave a greatly increased yield.

8. A double or monstrous flower upon a young plant is no indication that succeeding flowers upon the same plant will be double, and produce irregular fruits. But varieties which habitually bear double flowers are also the ones which habitually bear irregular fruits.

9. Cool and dark weather in early fall, and early fall frosts, are the leading drawbacks to profitable Tomato culture in the North. To avoid these dangers as much as possible, plants must be started early and forced rapidly.

10. The essential general points in profitable Tomato culture are these:—Careful selection and breeding; early sowing; frequent, or, at least, occasional transplanting to obtain stocky plants; rich soil, well prepared and well tilled.

11. There is evidence that varieties of Tomatos run out, even under good culture.

12. The best market Tomatos appear from our tests to be Ignotum, Favourite, Bay State, Atlantic, and perhaps Ruby among the red varieties; Beauty, Mikado, and possibly Potato Leaf, among the pink or purple varieties; Golden Queen among the yellow sorts.

13. Among the novelties, Ruby and Chemin Market are most promising.

Bruges.—An important floral exhibition will be held in this town on Sunday, April 12. The schedule, published in Flemish and French, comprises ninety-one classes. The Secretary is M. H. Van der Straeten.

At what Season was Pompeii Overthrown?—This question has been discussed by scholars and antiquaries without any definite conclusion having been arrived at. Lately the trunk of a tree, bearing berries, has been discovered among the ashes, the berries giving the clue to the nature of the tree, which was the true or Bay Laurel (Laurus nobilis). From the degree of maturity of the berries, it is, moreover, surmised that the eruption took place in November. The year is known from other evidence to have been A.D. 79.

Monte Video.—We have already announced the fact that our friend and colleague, M. Edouard André, has received a commission from the municipality of Monte Video to lay out parks, squares and boulevards in the capital of La Plata. Availing themselves of the presence in their State, not only of an accomplished artist, but of a distinguished botanist and collector, M. André was commissioned also to visit the outlying districts of the country for the purpose of investigating its Flora, and of ascertaining what resources were available for the decoration of the city. M. André publishes in the *Revue Horticole* of December 1 the first of a series of articles on the horticulture of La Plata. The climate and vegetation present many analogies with those of the Riviera.

Grasses of the South-West of the United States.—Dr. George Vasey, the Botanist of the Department of Agriculture at Washington, has lately issued the first part of a treatise on the Grasses of Texas, New Mexico, Arizona, and Southern California. The country embraced in this desert belt is an extension northward of the grand plateau of Northern Mexico; and the grasses, like the rest of the vegetation, are peculiar to the region. The vegetation, says Dr. Vasey, is as different from that of the Eastern States as that of the Northern portion of the Sahara. The most important agricultural question is how to increase the production of grasses and forage plants on the arid lands. It is conjectured that this may be done by cultivating some

of the native species, and experiments are being made with this object. But the first thing to do is to recognise the species, and to that end Dr. VASEY and his assistants have prepared a series of illustrations and descriptions which will be of very great service. The illustrations are excellent, serviceable alike for purely botanical and for agricultural purposes. The book would supply hints at least to our colonists in parts of Australia, the Punjab, &c.

A HYBRID STANHOPEA.—In the current number of the *Gartenflora*, Dr. KRÄNZLIN describes and figures a hybrid raised by Mr. WEBER, head gardener to Mr. SPINDLER, between S. oculata and S. tigrina. The flower, as to size, is intermediate between the parents, and was pronounced, not so good as S. tigrina, but far better than S. oculata. The scent is very powerful, but not so objectionable as in S. tigrina.

COPPER SULPHATE FOR LILIES.—Rev. C. Wolley Dod stated recently in the *Garden*, and also at a meeting of the scientific committee, that he has found very good results with commoner Lilies as well as with Roses by the use of sulphate of copper as a preventive. Three pounds of sulphate of copper, which costs wholesale less than 3*d*. a pound, are dissolved in water, and two pounds of quicklime, separately. These solutions are then mixed together in ten gallons of water, and splashed upon the young growth, to which it does no harm. "I have found this also very useful for the cure of the mildew (Peronospora ficariæ), which has proved here so destructive to the large variety of Christmas Roses. Another remedy recommended for mildew is to dress the surface of the ground in early spring before growth commences with finely powdered sulphate of iron. One pound is sufficient to mix in a wheelbarrow load of soil, and will dress a large surface. I have seen this treatment recommended in the Kew Bulletin to prevent Potato blight. I have used it for Lilies, and it seems successful."

"THE HORTICULTURAL DIRECTORY."—We welcome as an old friend the new edition of this useful publication. Though it has changed its appearance in some respects thirty-one times, yet we have not lost confidence in it; and although we see it and use it almost every day of our lives, we do not get tired of it, and seldom find it fail us, so that we can recommend it to others. It may be had at 171, Fleet Street for 1*s*.

CARNATIONS.—From M. BENARY, of Erfurt, we have received a large coloured plate of Carnations and Picotees. These are florists' flowers of fine quality, but no artist can make them look otherwise than stiff and formal. The careful colouring of the picture will doubtless be a guide to growers who are uncertain of the names of some of their favourites, especially as there is an accompanying outline key.

ILLUSTRATIONS OF BRITISH FUNGI.—The approaching completion of this truly large undertaking induced Canon Du Port at the last meeting of the Woolhope Club to pronounce a well-merited eulogium on Dr. Cooke, for his persistent zeal in the publication of this work. That such a book, which consists already of 1,200 plates, should be open here and there to correction on points of detail is only what might be expected, the vastly preponderant feeling will be one of gratitude to the author, whose laborious and long-continued researches have so greatly facilitated the study of British fungi.

RHODODENDRONS OF THE FUTURE.—"Judging by the results of botanical exploration," writes Sir JOSEPH HOOKER in the last number of the *Botanical Magazine*, "it would appear that all previous estimates of the number of species of this magnificent genus of plants are far below the mark, and that the discoveries made in the Eastern Himalaya are only harbingers of what are to be expected from the vast mountain regions still further to the East . . . between sixty and seventy species have been collected in its barely entered western mountains [China] by PÈRE DAVID, Dr. HENRY, and others [so that] it may be regarded as probable that the Celestial Empire contains more species of this genus than all the world besides."

THE ANNUAL OF THE "JOURNAL OF DECORATIVE ART" FOR 1890 is named from a "Ducal Tea House," which has been built and decorated for the Duke of WESTMINSTER, at Eaton Hall, Chester. Although the price of the publication is higher than that of many Christmas numbers, the numerous illustrations and the eight additional plates more than account for this. The illustrations are by Mr. W. PALMER, from designs drawn by Mr. STACEY MARKS, for the tiles which line the walls of the building, while the letter-press is put together by the Rev. Canon MORRIS. The botanical accuracy, or at least the nomenclature, of some of the representations will not bear investigation — they fall between the two stools of convention on the one side and of accuracy on the other—but the Seven Ages of Man, and Touchstone and the Sundial, are good examples of the style of drawing they represent, and probably the original tiles are even more pleasing in effect than these reproductions can be. The magazine is clearly printed, on good paper. It is sent out by the Hansard Publishing Union.

"KATECHISMUS DER ZIMMERGAERTNEREI."—The above is the title of an interesting and useful little work on indoor plants by HERR LEBL, an eminent German gardener, published by J. J. WEBER, Leipzig. The book would be much valued by amateurs and others able to read German, as affording a mass of information on the cultivation of plants indoors and their propagation, although from the difference of the climate of England and Germany, many subjects are treated which meet with but little acceptance in the former. Amongst the genera seldom utilised here, mention may be made of Bilbergia, Choisya, Coffea, Curculigo, Eranthemum, Fragaria indica, Hoya, Maranta, Lantana Philodendron, Pittosporum, Pogostemon, Streptocarpus, &c. The directions are plain, concise, and without undue use of technicalities.

THE WILLIAM HOLMES MEMORIAL.—On Wednesday a floral *fête* and bazaar, for the benefit of the proposed memorial to the late secretary of the National Chrysanthemum Society, was held at the Royal Aquarium, Westminster. It is proposed to institute the "HOLMES awards" for Chrysanthemums, and also to assist in educating, as a landscape gardener, Mr. HOLMES's son. There were several stalls where fruit and flowers contributed by nurserymen were on sale. The attendance was not so good as it might have been, owing to the inclemency of the weather.

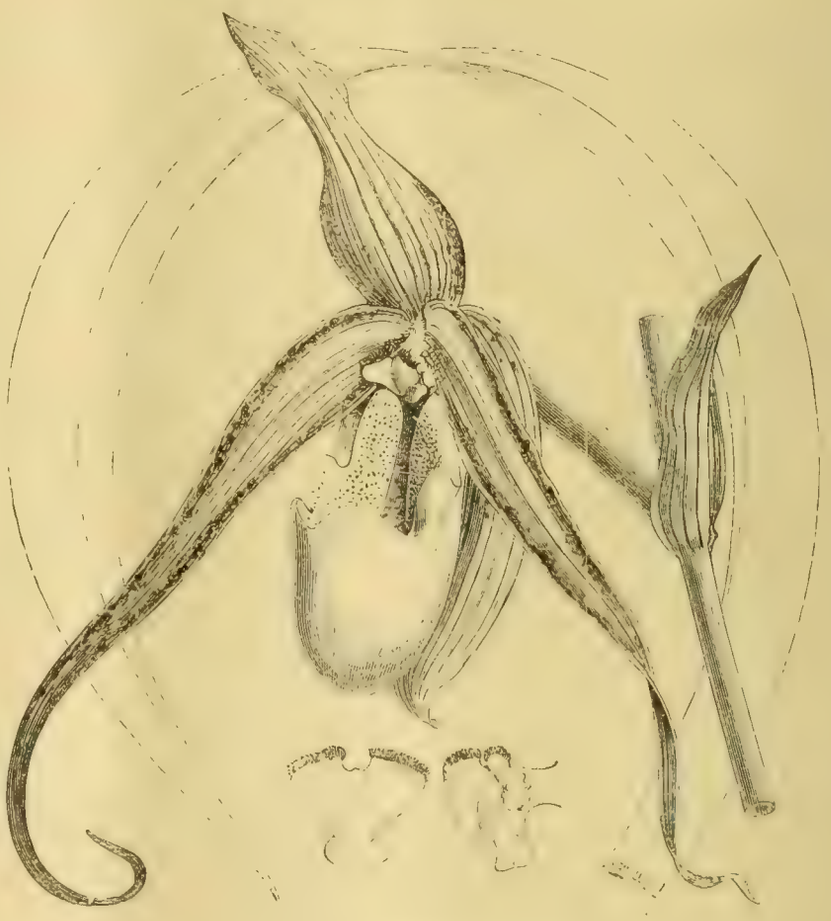


FIG. 143.—CYPRIPEDIUM LONGIFOLIUM.

CYPRIPEDIUMS LONGIFOLIUM AND LOWI.

IN our last issue we gave some illustrations of winter-flowering Cypripediums, and in our present one are illustrated C. longifolium, described in our columns, 1869, p. 1206, and where it was classed by Reichenbach as a Selenipedium. The plant was discovered by J. von Warscewics in the Cordilleras of Chirique.

The flower-scapes are stoutish, erect, as long as the leaves, deep purple, and pubescent, six to ten-flowered. The flowers, which are 3½ to 4 inches wide, are generally of a pale green, with various white, rose, and black markings, and reticulating lines appear in the winter. The staminode is pale yellowish-green, with a blackish fringe.

There is a variety of C. longifolium named gracile, more slender in all its parts, and of a paler colour, and bracts more compressed; also a variety, Hartwegi a robust plant with longer and broader leaves and taller scape, which is not purple as in the type. With reference to this species and its varieties, Mr. Rolfe favours us with the following communication:—

"Several times recently, at the suggestion of different correspondents, I have examined the question of the distinctness or otherwise of the closely allied Selenipedium longifolium, S. Hartwegii, S. Roezlii, S. Hincksianum, and S. dariense, and, as their history is involved in much confusion, I now propose to place on record the results arrived at.

"Cypripedium longifolium was originally described in 1852, by Professor Reichenbach, from an imperfect herbarium specimen collected by Warscewicz on the Cordillera of Chiriqui, at 5000 to 7000 feet elevation, in 1849. C. Hartwegii appeared but a few weeks later in the same year. Its origin was not at first very clearly stated, but the plant was really detected by Hartweg on the eastern slopes of the Andes of Ecuador, in wet marshy places near the hamlet of Nanegal, in the province of Quito, at about 4000 feet elevation, when collecting plants for the Horticultural Society of London, in 1842. Dried specimens alone were secured, but these are carefully preserved in Dr. Lindley's Herbarium, now at Kew. Strangely enough, Lindley thought they belonged to his previously described C. caudatum, and so labelled them; also when giving a figure of this plant in Paxton's *Flower Garden*, in 1850 (vol. i., p. 40, woodcut), he borrowed all but the flowers from the former to help make up the figure. He has the bracts correct in the coloured figure (t. 9), but, to account for the discrepancy between the two figures, he calls them 'mere abortions.' Messrs. Veitch (*Man. Orch. Pl.*, pt. 4, p. 61), follow Lindley in ascribing Hartweg's locality to C. caudatum, which is incorrect. In 1854, Reichenbach established the genus Selenipedium, on the tropical American species, formerly referred to Cypripedium, but differing in having a trilocular ovary with axile placentation. To it, of course, Cypripedium longifolium and C. Hartwegii were transferred. Some time afterwards, the same author referred to S. Hartwegii some specimens which had been collected by Seeman in the Isthmus of Darien, in Panama; a figure being given in Seeman's *Botany of the Herald*, which showed a pair of very remarkable anguli on the side-lobes near the base of the lip, to be mentioned presently.

"Hitherto none of the plants had been in cultivation, but in 1867 Endres re-discovered S. longifolium, and introduced it to European gardens, where it first flowered during 1869. Just prior to this date, Reichenbach had separated his Panama S. Hartwegii from the true Ecuadorian plant, on account of the curious anguli on the side-lobes at the lip's base; calling it S. dariense. A fourth species now appeared, S. Roezlii, having been discovered by Roezl, in 1871, on the banks of the small river Dagua, on the eastern slopes of the central Cordillera of New Granada. It was sent to M. Linden's horticultural establishment at Ghent, and flowered for the first time in Europe in the St. Petersburgh Botanic Garden, in 1873. In 1878, Reichenbach described Cypripedium Hincksianum, from a plant which flowered in the collection of Captain Hincks, of Breckenbrough, Thirsk, Yorkshire. From the account given, we learn that it was collected by Wallis, near "Cape" Darien. When, and by what means, S. Hartwegii was introduced to cultivation, I cannot say, though it has existed in several collections for some few years.

"Thus it will be seen that Reichenbach recognised five distinct species. Messrs. Veitch recognise one only, making Hartwegii and Hincksianum varieties, and Roezlii synonymous with the former. Another well-known cultivator writes, that he considers Hincksianum identical with Roezlii, but quite distinct from longifolium. While yet a third considers Roezlii to be synonymous with longifolium, and Hincksianum with Hartwegii, but quite distinct from longifolium. My own belief, based on an examination of over a dozen sheets of herbarium specimens, and several living plants, is, that the whole series can only be considered as representing one widely-diffused and somewhat variable species, with several more or less well-marked varieties. Here, however, is abundant play for individual opinion to come in, varieties being proverbially ticklish things to deal with. If we recognise geographical varieties, the case is not particularly difficult. First comes S. longifolium, from Chiriqui; then var. Hincksianum (including S. dariense) from the Isthmus of Darien, a little further south; then var. Roezlii, from New Granada; and, finally, var. Hartwegii from Ecuador, some 500 miles distant from the home of the original S. longifolium.

"I am inclined to think this represents approximately the differences observed in the plants, but it is impossible to say whether the discovery of intermediate stations may not break down these apparent differences. Geographical varieties can only be made when the individuals from different isolated localities present certain recognisable characters, as in the case of the varieties of Cattleya labiata, and others. It will be observed that S. dariense and S. Hincksianum are both from the Gulf of Darien district; but the former appears to have been founded in error. I have carefully dissected an authentic flower, and find the remarkable anguli near the base of the side-lobes of the lip are not present at all. If they existed in the flower drawn, it must have been abnormal; but I am inclined to think their presence in the drawing has arisen from an error of observation. Apart from this character, I do not see much to separate the two. S. dariense has leaves a little narrower than S. Hincksianum; but it is only known from dried specimens.

"The differences observable in the specimens are not very great. S. longifolium has comparatively narrow leaves and rather pale flowers. Var. Hincksianum has broader leaves, larger bracts, and the margin and apex of the petals brighter in colour. Var. Roezlii is very vigorous in habit, the leaves are broad, but the bracts smaller than in the last-named; the petals very brightly coloured, and the lip proportionately rather small. Var. Hartwegii is about equally vigorous, with broad leaves, but the bracts are larger, and the flowers less brightly coloured. The variety coloratum, Rchb. f., appears not to differ from Roezlii. Var. gracile, Veitch, I have not seen. Possibly a critical comparison of living specimens of all the forms might reveal other slight differences, and render some rearrangement



Fig. 144.—Cypripedium Lowi. (see p. 728.)

necessary; but I do not see any character by which they can be separated, except as varieties, and these not more distinct than are the varieties of the widely-diffused S. caudatum. *R. A. Rolfe.*

C. Lowi (fig. 144, p. 729) is a Bornean species, discovered at Sarawak by Sir Hugh Low, sent by him to the Clapton nursery in 1846. It has been found by Messrs. Veitch's collectors in the same settlement, where it is always found in the forks of the branches of trees. It was described by Lindley in *Gard. Chron.*, 1847, p. 765. The scapes are from 25 to 40 inches, nodding, and three to five-flowered. The flowers measure from 3 to 4 inches across, vertically, and are ciliolate in all their parts. The prevailing colours are brownish-purple, yellow, brown, and green. It flowers in April and May, and is an inmate of the stove, but continues long in perfection if removed to a cooler house at the flowering time.

SCUTICARIA STEELII.

The flowers of this species of Orchid are produced singly or in pairs on short scapes, each being 3 inches in diameter. The sepals and petals are oval, and of a rich creamy-yellow blotched with brownish-purple; the lip is large, three-lobed, of a paler yellow than the petals, the erect side-lobes being barred with parallel lines of brown-crimson. The most noticeable feature, however, of this species is its long, terete, whip-like foliage. A plant that bloomed at Kew this year carried flexible leaves of 4 feet in length, and about the thickness of a goose-quill. It thrives best when grown on a block of Teak with a little material about the roots, and hung against a moist wall in the stove, where it may enjoy full sunlight. A native of British Guiana. *W. B.*

SCOTLAND.

EDINBURGH BOTANICAL SOCIETY.

Dec. 11.—The Society met in the evening at 5, St. Andrew Square, Mr. Lindsay, President, in the chair. Dr. Cleghorn, F.R.S.E., F.L.S., was elected a British Honorary Fellow. Dr. William Craig read an interesting account of the excursion of the Scottish Alpine Botanical Club to Connemara. Among the many plants found was an Erica of a very marked character. The question of its affinities, and probable hybridity, was discussed by Professor Bayley Balfour, Dr. Macfarlane, and Mr. Lindsay.

Dr. Wilson read a paper on "The Effects of Cultivation on Allium vineale." Taken from a ruined wall, and grown in the University Botanic Garden, St. Andrews, it assumed some striking features, especially in the bulbiferous head, which was composed of five or six groups of bulbils borne on stalks formed by the splitting of the scape.

Notes on additions to the flora of the Moffat district, by J. Thorburn Johnstone, were communicated by Professor Balfour.

The President submitted his report on temperature and vegetation at the Royal Botanic Garden, for November:—

During November, the thermometer was at or below the freezing point on 16 mornings, indicating collectively 80° of frost for the month as against 38° for the corresponding month last year. Not since 1880 has so much frost occurred during November.

Rain fell on 14 days and snow on 6 days, a heavy fall took place on the 26th, which lay on the ground till the end of the month. The lowest readings of the thermometer were on the 16th, 27°; 27th, 19°; 28th, 19°; 29th, 18°; 30th, 22°. The lowest day reading was 31° on the 28th, and the highest 60° on the 19th.

Out-door vegetation is in an almost dormant condition now. Only two species of plants came into flower during the month on the Rock garden, viz., Crocus Salzmanni and Crocus cancellatus, and with the exception of Helleborus niger altifolius, Polygala Chamæbuxus, and Lithospermum prostratum, no others are in flower, in good condition.

Of berry-bearing plants the most conspicuous and effective are the various varieties of Pernettya mucronata. The berries are about the size of the Holly, the colours vary very much, numerous shades of red, lilac and white, being represented. The plant is a native of Magellan, is very hardy, and ought to be much more widely cultivated than it is at present. In seasons when Holly berries are scarce, the Pernettya forms an excellent substitute.

Mr. Bullen, Curator, sent the following extract from the record of temperature, vegetation, &c., in the Botanic Garden, Glasgow, for November, 1890:—

"The temperature was at or below the freezing point on eighteen mornings during the month, giving a total of 31°, 25° of which were registered during the nights of the 26th and 27th. With these exceptions the mean temperature was high for the season. The month was an exceedingly dull and wet one, and the rainfall heavy. On the 27th the day temperature was not higher than 30°; on the 28th and 29th, 32°. All other readings were comparatively high, consequently what little hail or snow fell soon vanished. Lawn grass continued to grow fast until the middle of the month. The excessively wet state of the ground retarded outdoor work considerably."

Among miscellaneous items, a question arose whether the Foxglove is notably scarce in limestone districts, but no definite information was elicited.

Dr. Somerville, Lecturer on Forestry, exhibited spurs of Scots Fir bearing three "needles" in place of two, and also shoots of a Sycamore having three buds on a whorl. The latter seemed to be caused by excessively vigorous growth.

Dr. Macfarlane read extracts of a letter from Mr. J. Graham Kerr, the naturalist accompanying the Pilcomayo Expedition, giving a general account of the flora and fauna of that region. No little danger and disappointment have been experienced. The river has been found too shallow for navigation.

North of Scotland Horticultural Association.

This Association held its monthly meeting at the Music Hall, Aberdeen, on Saturday, the 13th inst. Mr. D. M. Smith, President, in the chair. A paper, was read by Mr. C. S. France, Vice-President, on "The Nomenclature of Coniferæ." The author first gave a general description of this order of plants, and reviewed the many scientific authorities as to classification in genera and species from Tournefort, 1717, down to the present time, and gave his opinion that the general arrangement as adopted in Veitch's *Manual of Coniferæ* is the best, for various reasons. He deprecated the arbitrary manufacture of names by nurserymen and others, thereby creating an incomprehensible synonymy.

THE CRATÆGUS AS A TOWN TREE.

With a view to ascertain, with some amount of certainty, which of the numerous species of Thorn succeed in our smoky towns, other data than those at our command are required. For some years previously, as also this year, the trees of the common White Thorn, Cratægus Oxyacantha, a lovely object when in flower, have suffered more or less from the ravages of caterpillars, which devour the leaves wholesale, and afterwards knit together the bare and half bare twigs, with the fine web which enclose their eggs. The ravages of these creatures cause two-fold damage to the trees attacked by them; for not only are the foliage and flowers of the current year devoured, but the shoots pushed forth by the tree to supply the places of those deprived of their leaves, are late in point of time, and seldom get properly matured, so that the trees become weakened, and the quantity of bloom is greatly lessened. All the forms of C. Oxyacantha, as C. O. intermedia with long oval leaves, C. O. plenorubro and alba suffer alike; also the forms of C. O. monogyna. This latter is a variety with egg-shaped leaves, somewhat deeply dentated, and serrated towards the point. The fruit is mostly set in close cymes, hairy, and globular; the flowers appear about fourteen days later than those of C. Oxyacantha. There are many forms of C. monogyna, and of which we may mention the well-known Paul's Scarlet, one of the finest double scarlet-flowered varieties; punicea, very double, red flowers; dissecta, pectinata, laciniata, fissa, apiifolia, with more or less deeply cut foliage; and Gumperi, with white petals, bordered with red.

These above-mentioned species and their varieties are excellent for country gardens, but not for smoky towns; and it is well to remember that hedges of these plants in the neighbourhood or surrounding of plantations of Apples, Pears, and Plums are undesirable, as the insects common to the former spread from these to the fruit trees.

The species of Cratægus which afford the least lodgment to the caterpillars peculiar to, or, at least, common to them, are those of less dense habit, und with larger leaves more widely set on the shoots than C. Oxyacantha and its varieties, and C. monogyna and its varieties. Of these species more proof against attack, or which suffer less from smoke, dust, and fog, are C. punctata, with yellow fruits, having brown spots; C. tomentosa (syn. pirifolia), with few thorns, elliptical, decurrent leaves, hairy beneath, the corymb many flowered, fruits small, pear-shaped, yellow, or reddish; C. grandiflora, with oval and red-brown berries, long, oval, tomentose, dentate, cut leaves, and large white blossoms, 1¼ inches in diameter; and C. subserrata (stipulosa), with pear-shaped, hairy fruits, and hairy footstalks.

Of the Cratægus of the parvifolia group, there may be recommended C. Crus-galli, one of the best known of our handsome Thorns. There are several varieties of this species, differing in the form of their leaves. The fruit generally is round, of a brick-red colour, and appears in simple bunches.

Another fine Thorn of this group is C. glandulosa, with broad, elliptical leaves, and beautiful red, and more or less fleshy fruit. It flowers in May.

C. rotundifolia flowers in April, and forms a thick bush on its own roots. The fruit is of a fine red colour, and mealy.

C. coccinea is the common, single-flowered, scarlet Thorn of North America, a tall tree with heart-shaped, slightly cut, and acuminate leaves. The fruit is hairy, and in colour scarlet.

C. prunifolia has broadly elliptical leaves, wedge-shaped at the base. The fruit is crimson, hard, and not fleshy—an excellent species to plant in dry ground.

So far as our observation, which has been mainly confined to the metropolis, extends, the species and varieties of Cratægus that we have named, are those which would probably give the most satisfaction in our squares and gardens. But there is one matter which deserves mention here, and that is, that in most of the older squares and gardens in the metropolis, we find trees and shrubs planted too thickly together, and in consequence growing weakly from shade, want of air, and root sustenance. Trees and shrubs so treated are the first to fall victims to the invasions of insects, and scarcely form subjects from which trustworthy data may be gathered; and it is to be anticipated, that more favourable conditions of growth prevailing, most of the hardy Thorns of the old and new world would grow and flower very well even in the more central parts of the town.

In addition to giving these and all other trees of moderate height plenty of space in which to develop to the fullest degree, copious overhead drenchings by means of a hose attached to the water-mains, should be afforded them at frequent intervals during the summer months; and root-watering, after pricking the surface of the soil with a fork, should not be neglected. Indeed, every means should be adopted by those responsible for the proper keeping of squares and gardens to induce all kinds of trees to grow with vigour, this being the one and only means of counteracting the injurious effects of bad air, confinement amongst tall buildings, fogs, and the poisonous emanations from soil traversed by gas-pipes. What should be avoided is the destruction of surface-roots by incessant digging; for it should be remembered that it is the surface soil that affords the greater part of the nourishment of a tree, the deeper roots only forming, as it were, anchors wherewith to fix it firmly in the ground. And in place of the spade, only half-worn-out forks should be employed in the spring months, and surface mulch-

ings of dung masked by having a little soil thrown over it, should take the place of dung dug in and brought into direct contact with the numberless roots just under the soil.

Useful Invention.

At the last meeting of the Royal Horticultural Society, Messrs. George Coppin & Sons, of Addington, Surrey, exhibited specimens of their new tree pruners, which show great advances on the old Averruncator, in which the knife was worked by a cord. The special advantage claimed for the introduction of this firm, which we are now able to illustrate (fig. 145), is that the cutting edge commences to work from the top of the branch, and not from below, as is the case in the older patterns. This should facilitate the operation, as the branch, by giving way as it is cut, allows the knife to pass through easily. In the illustration, a saw is also shown; this may be fitted to the instrument to use on branches which are too large to be taken by the knife.

Forestry.

DEER-FOREST PLANTING IN THE HIGHLANDS.

In the *Christian Leader* of the 11th inst., I saw an interesting article on this subject quoted from the *Independent*, the writer of which is the Hon. Gilbert Coleridge. Mr. Coleridge says the term forest as used in Scotland may be a reminiscence of former glories departed, as the deer-forests are singularly destitute of trees. This is perfectly correct—at least in many parts of the Highlands, and certainly much to be regretted, for I know of nothing more beneficial in promoting the health of the animals during winter than good shelter and a fair supply of food. Mr. Coleridge is of opinion that it is only at great expense that woods can be reinstated in the Highlands, as an immense amount of drainage has to be made before the soil becomes dry enough to support a tree; and, secondly, all new plantations must be carefully fenced against the depredations of sheep, cattle, and deer in the winter. Of course all young plantations must be fenced until such time as the trees are thoroughly established, when they will then take care of themselves as far as the deer are concerned. But the expense of planting heather ground in deer forests is not so heavy, after all. I can count my acres by thousands, and my trees by millions, which I have planted in the deer forests in Great Britain and Ireland, and I have never found the cost per acre to exceed from 30*s.* to 40*s.*, that is to say, in all cases where the plants were inserted by the notch system of planting. This estimate includes fencing, draining where necessary, and everything complete. It should be borne in mind that the cost of fencing a large area is always less in proportion to that of enclosing a small area, and this accounts in many cases for the difference in the cost of the first formation. In the year 1858—9, I planted a shelter-block of trees in the deer-forest, upwards of 200 acres in extent, within about two miles distance from the base of Lochnagar, and as there were no cart roads the plants had to be carried part of the way, packed in mats, and placed upon horseback, and although this entailed considerable extra expense, yet the cost per acre did not exceed the estimate given.

When planting for shelter in deer-forests, long narrow belts should be avoided, as the trees always thrive best on exposed ground at high elevations when planted in dense masses or blocks of a circular form. When the trees are planted in large groups, the deer can always shift to the lee side of the group during a storm, and this should always be borne in mind when laying out the ground to be planted. The best trees for this sort of planting is 2-year seedlings 1-year transplanted native Scotch Fir; and the planter should be very careful when making a purchase that he is not supplied with plants raised from foreign seed, as such are sure to prove very unsatisfactory. When trees are planted in this way, their influence as regards shelter can be felt at the distance of a couple of miles from the base of the plantation. But shelter is not the only advantage of planting trees on barren heather-ground; as some of the plantations which I have formed upon ground not worth more than 6*d.* per acre as annual rent, now carry a crop of trees after from thirty to forty years' growth that shows a return worth from 20*s.* to 40*s.* per acre since the time of planting. *J. B. Webster.*

Forest Trees: their Propagation and Uses.

A forest tree or general outdoor nursery offers many aspects of interest to an observant mind, and when visitors see the large number of plants of any one popular tree in various stages of growth, they are not only led to ask where do they all go to, and to what purposes are they applied, but also to say, where do they all come from? If plants are sent

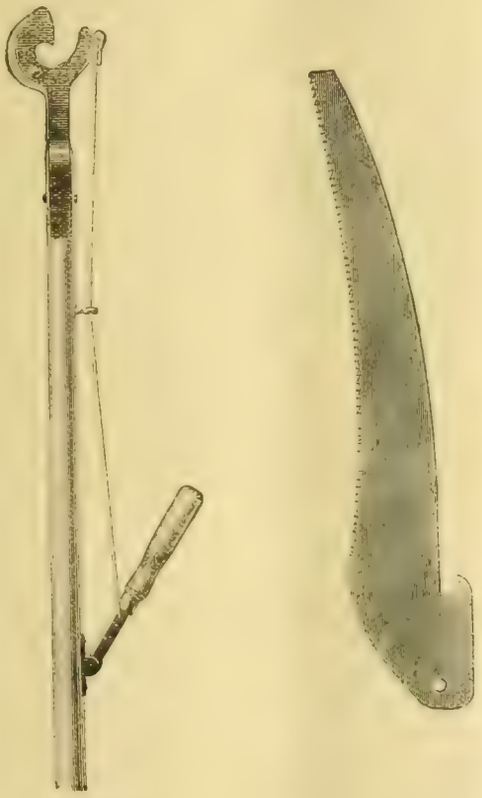


Fig. 145.—Tree pruner and branch saw.

away from a forest nursery daily, a fresh supply must of necessity be forthcoming to take their places, and it is interesting to know how the stock is thus maintained.

Take *Ash* for instance—a tree in very large demand for planting purposes. Enormous quantities are raised annually from seed, and the seeds are obtained from men who make a business of obtaining them in the hedgerows. The seeds are gathered in October and November, and put into pits until the following spring, in order that the coverings or skins of the seeds may decompose. They are then sown in spring—generally during the month of March—in beds, either in drills or broadcast. It may be remarked that the price paid for the seeds varies according to the crop, whether a plentiful or spare one. The seed germinates quickly, and the young plants are transplanted the following winter. The nurserymen sell their Ash when about four years' old, and from 3 to 4 feet in height. They are transplanted once during that period. Ash is largely used for making hurdles and for hop-poles, &c. The timber of fullgrown Ash trees is employed by wheelwrights in manufacturing the felloes of wheels—that is, the outer rim of it.

Spanish Chestnut is another tree in large demand. The seeds of this and the Ash are sometimes to be found in the woods in the neighbourhood of southern nurseries; and there are men who make it a business to gather the seeds and sell them to the nurserymen. If the crop runs short at times, then cheap imported Spanish nuts are purchased for sowing, but foreign seed never germinate so well as do home-saved. The nuts are sown in spring—about April—in beds; they soon produce plants, and they are transplanted in the following autumn or spring. The young trees sell when from three to four years old, and about the same height in feet. The young Spanish Chestnuts are planted very extensively for underwood and game coverts; and in course of time become very valuable as timber trees. For all building purposes, the wood is nearly as valuable as Oak.

The Horse Chestnut is similarly treated, but the seeds are not nearly so extensively sown as those of the Spanish Chestnut. It is a tree of slow growth, the wood is soft, and of very little value for timber purposes. Unlike other trees, the wood is more durable before it has reached maturity than at any other period. It is in demand mainly as an ornamental tree.

Birch.—Our English forest tree nurserymen raise but very little Birch from seed, they prefer to buy plants from the Continent or from Scotland, when from one to two years old; they grow them for a time, and sell when four years old, and from three to four feet in height. It is not of much value as a timber tree, but is a good deal planted as underwood; and the white variety is a very ornamental tree, quite justifying Coleridge's eulogium as the "Lady of the Woods," for nothing in the way of branches can be more light and airy than its slender drooping spray, bearing resemblance to a fountain shower. The timber is, however, useful in several ways; as hoops are manufactured from it, yokes for cattle, bowls, wooden spoons, and other articles, in which lightness without much durability is sufficient.

Our *English Elm* is often a grafted tree, at any rate it is the custom of some of our leading forest tree nurserymen to graft, selecting for the purpose the handsome large-leaved Elms found about the kingdom. Report says there are some very fine large-leaved Elms in the neighbourhood of Market Harborough that are much sought after for scions; grafting is done in March on the Wych Elm, because so much freer than the English Elm. The grafts are inserted close to the ground, budding and grafting both being done within six or eight inches of the surface of the soil. Elms are largely planted for timber trees, for avenues, &c. The timber of the Elm is employed for many purposes in which the wood is exposed to the alternations of moisture and drought; it was almost the only wood used for the pipes of the water companies previous to the use of iron. It is much employed by wheelwrights.

The Lime.—The Lime is largely propagated by means of layers from nursery stools, and therefore the trees are on their own roots. It is much grown as a timber tree, and the timber is used for many purposes of joinery, because so easily worked. Large trees are found very valuable indeed. Limes are generally sold when from six to eight years old, and when from five to eight feet in height. They are twice transplanted during that period. One great aim of the cultivator is to keep a clear stem, all the suckers thrown up from the roots being carefully cut away. Architects frequently form the models of their buildings of the wood of the Lime, and it is said that Gibbons, the most celebrated carver this country has ever produced, usually employed this wood for his finer works.

The Oak is raised from acorns, of which there is generally a full supply. The seeds are gathered about the fields and roadsides, and stowed away in barns or any convenient outhouse until spring, when they are sown, either in drills or broadcast in beds. They quickly germinate, and are then transplanted

to nursery-beds a year after. Time was when most of the wholesale seed houses in London did some business with forest trees—with acorns, beechmast, Chestnuts, &c., but that branch of their business seems now to have entirely passed away.

Black Italian Poplar.—This is a tree much in demand for many purposes. It is increased by means of cuttings which are taken from pollards or stools; they are made from 15 to 18 inches in length, and planted thickly in rows during winter. They root during the spring and summer, and are transplanted in autumn to nursery plantations. In some cases the cuttings are put in more thinly and left two or three years, when they will have grown into good plants 3 to 4 feet in height. The wood of this Poplar is much used for making hat-boxes, as the wood can be cut up into sheets almost as thin as paper; it is also employed for the manufacture of cheap upholstery; much of what passes as Maple is said to be only stained Poplar.

The Austrian Pine.—This is found a very useful subject for many purposes. Seed is sown in beds in May; it germinates quickly, and generally plentifully, and the young stock is transplanted the next winter or spring. The plants are twice or thrice transplanted in the course of five or six years, and sold when 2 or 3 feet in height. It is in large demand for general ornamental purposes, for screens, and for entrances, &c. It is one of the best plants in cultivation for use as a screen; and when employed on plantations it imparts to them an appearance of warmth and cosiness.

The Larch.—The usual rule with growers in this country is to buy seedling plants from Ireland and Scotland when quite young, generally as one-year seedlings. They are planted thickly in rows for a year, then taken up and transplanted thinly, and allowed to stand for two years, during which time they grow into good stuff from 2½ to 3½ feet in height. Scotch and Irish native Larch is seldom injured by frost. Attempts have been made to introduce the Tyrolese Larch, but it is said to be of little value as a timber tree. The true Larch takes pleasing glaucous blue tint; and it is quite distinct in growth. The Tyrolese Larch is of more slender growth, and it is excited into growth earlier in the year. The Larch is not grown extensively enough in England proper, to supply seed to any extent; and if seed be obtained it germinates imperfectly. The seedsmen of Scotland and Ireland get seed from their native woods, and create a considerable industry with it.

The Scotch Fir.—Scotchmen speak of this with pride as the true northern Highland Pine. It is increased in this country mainly by seedling plants obtained from Scotland; or seed is got from the north, which is sown in nursery beds about the end of April or the beginning of May. The seed germinates quickly. Seed of Scotch Fir obtained from the Continent is found to produce a very inferior variety, practically useless. The Scotch Fir is largely planted in the form of plantations. The thinnings out of the young trees are found very useful for making rails; and the timber from the large trees is employed for building purposes.

The Spruce Fir.—Seeds of this are obtained from the Continent during the autumn and winter seasons, and sown in beds about April and May. It germinates quickly. The seedlings stand in beds about two or three years in order to get into size, and are then transplanted somewhat thinly in nursery rows, where they remain another two years, then again transplanted a yard apart. The Spruce Fir is planted for covert, and in the form of belts to afford shelter for others. *R. D.*

HOME CORRESPONDENCE.

LUCULIA GRATISSIMA is to be seen in its best orm in the conservatory at one of the most picturesque spots in Leicestershire, the seat of Mrs. W. Hartopp, Dolby Hall, Melton Mowbray, as you will see from the box of flowers sent you, which was cut yesterday. This lovely old plant has at the present time a crop of about 150 trusses of fully-developed flowers, the fragrance of which is most delightful, with many more trusses to open. Mr. Sharp, the gardener, tells me it was planted in the conservatory quite twenty-eight years ago, out of a small pot. The specimen measures about 15 feet high and about 10 feet through, with a stem at the ground measuring 23 inches in circumference, with growths this year quite 6 feet long, in excellent health. The knife is used freely every year; at the same time the top surface soil is generally taken away, and a fine top-dressing of two parts loam and one part leaf-mould, and a decent supply of water. As a rule L. gratissima is allowed to be rather difficult to propagate, but I can remember some ten years ago, when travelling in the west of England, calling on a nurseryman who had a splendid lot, and he found no difficulty whatever with it. *Correspondent.*

PROPAGATION OF AUCUBA JAPONICA.—At this season of the year it is an easy matter, where large plants exist, to increase the stock of this useful plant. As soon as the pointing over and cleaning up of shrubberies are completed, there will be no fear of the same disturbance for some time to come, and then propagation of Aucubas by layering may be performed. Shoots of almost any size may be layered, but those which are near the soil will yield neatest plants. In layering, pots may be used, or the staple soil with or without the addition of any other. Some years ago I planted Aucubas under a Chestnut tree, where nothing else throve owing to the poverty of the soil and its dryness. This planting was a success, and the plants after being layered have never given any more trouble. The growth was very dwarf—just what was wanted—and this has been secured by two layering operations. The leaves from the Chestnut are allowed to remain, and this has no doubt enriched the soil somewhat, and prevented evaporation to a certain extent. The plants have been admired by many who have seen them, as affording a good idea of clothing bare ground under timber. In a few years the large mother plants must be removed, as dwarfness of growth is aimed at, but the small ones will be left. The Aucuba is an accommodating shrub, and bears removal at any time except when in growth. This readiness to make roots is an advantage when a gap has to be filled up in the warm or cold season, when it is unsafe to move many kinds of evergreens. Although the plants bear abundance of berries every season, looking gay when fully coloured, yet but few seedlings ever come up, the birds taking a liking to them, and I have noticed the plants are very soon stripped of them when they are to their liking. *J. H. G.*

FUMIGATING "INSECTICIDE."—I noticed in a recent issue of the *Gardeners' Chronicle* a note by "J. W. C." on fumigators. He states that what is wanted is, a fumigator which dispenses with red-hot cinders. I am able to testify from practical experience that "Campbell's Fumigating Insecticide" is a fumigator which not only does away with the objections attending ordinary tobacco-papers, but which also dispenses with the application of red-hot cinders as well. I would therefore advise "J. W. C." to give Campbell's a trial. If he does, I feel confident that the inevitable conclusion he will arrive at will be, that "these days of advanced scientific knowledge" have already produced the very article he so longingly searches for. The preparation can be used without the slightest injury to the tenderest foliage, &c. Another important element which should not be overlooked, is the great economy which is combined with its efficacy. *H. F.*

RETAIL SEEDSMEN AND THE NON-WARRANTY CLAUSE.—I have had this year my first experience, along with many more retail seedsmen, of being supplied with bad field Turnip, and that from a house that has hitherto stood high for the quality of its Turnip seed. This, my first painful and expensive experience, has drawn my attention to the non-warranty clause adopted by most of the wholesale houses. I consider that it is not the wholesalers only who need to adopt that clause, for, if they give the requisite attention to the selection of their stocks, and careful growing at a proper distance from other varieties to avoid contamination by bees, and if they have careful, trustworthy, and practical men to superintend the harvesting, cleaning, and the ticketing of sacks inside and out, they ought to know what they send out to their retail customers. But the retailers, who do not grow their own supplies, have to depend upon the wholesalers to supply them with good varieties of Turnip, and have no chance of knowing whether the quality of what they purchase be genuine or not, until it is grown by their customers, when, should there be anything wrong with the crop, he will find he is the responsible party, and liable for damages, although quite free from blame in the matter, and over and above, his business is materially damaged by the blunder of the wholesaler, who has himself protected by means of the non-warranty clause. Therefore, from my own experience, and from what I have known of the experience of others, I think it would be only right and safe for the retail seedsmen to adopt the non-warranty clause; or, should any serious mistake occur with seeds they send out, they have no protection, and may be ruined by the mistakes or blunders of others. *A Retail Seedsman.*

A DOUBLE-FLOWERED MUSK.—A German seed-house announces a double-flowered Musk, which is said to possess all the good qualities of the single-flowered type. I am not at all sure that doubleness in the flowers of the homely Musk is desirable. One can scarcely say that the decorative value of a Petunia, for instance, is added to when the flowers take on the double form; and I think the same can be said of the Musk. An equally apt illustration could be drawn from other subjects. There is a positive gain in the opinion of most persons in the doubling of many flowers; the Carnation and Rose, for instance, but the Polyanthus, Auricula, Phlox, and many others are preferable in their original form, and the same can be said of the Musk. Continental novelties are frequently of a disappointing character, and they need to be accepted with some degree of caution. *R. D.*

PLUMBAGO ROSEA AS A HANGING PLANT.—Grown in a pot, but placed in a basket, and suspended in the stove, Mr. Fry, gardener to Captain Edwards, Haydon Hall, Eastcote, Pinner, succeeds in getting the full beauty out of this old plant. At the present time, its slender drooping branches are profusely furnished with long panicles of its bright rosy-carmine flowers, and form one of the most attractive features in the garden. There are several of these fine old trailing plants, which one mostly sees in gardens trained round stakes or over wire globes, and generally looking anything but ornamental, but which form very graceful objects when treated as Mr. Fry treats his Plumbago rosea; among them may be mentioned Russellia juncea and Plumbago capensis. *J. O'B.*

SEXUAL DISTINCTION OF ARAUCARIA IMBRICATA.—Referring to the opinions about the sexual distinction of the Chile Pine, I am prepared to say that there are two well-marked varieties of it. The one (presumably male) makes fewer, more robust—rigid, in fact—side or lateral branches; the other has a more slender, drooping, bushier habit. There are two trees at Cullen House, Banffshire, which illustrate the above remarks; both are apparently about the same age, and are growing in similar soil and situation—in fact, they are growing about 30 feet apart. I am not quite sure that it is a sexual difference, although I think it very likely. It might be due to some peculiarity of their respective seed parents. Take Salix caprea, the common Goat Willow, *e.g.*, the male form of it differs very much from the female—so much so, that a novice would be inclined to consider them different species or varieties; but at the same time, I consider that heredity has a strong claim to be considered in the case of Araucaria. I must, however, remark that the trees I mention at Cullen are too young to bear cones at present. Soil and situation are of vast importance, and in the case of the Goat Willow I have taken special notice of the difference of form in identical soil, &c. I venture to predict that the law which holds good in the case of Willow will ultimately prove true in the Araucaria also. I must, however, draw your readers' attention to Loudon's opinion about the matter. He quotes Pavon, and mentions the female as "a tree of 150 feet in height," and "the male as a tree of seldom more than 50 feet." This statement would presumably be the reverse of the foregoing remarks, as I should think the most vigorous tree would grow to the greatest height. I should be inclined to consider Pavon's statement to be reliable, as he would base his statements on Chilian observations. *R. W. Milne, Edinburgh.*

HOLLY AND OTHER BERRIES.—The crops of various kinds of berries are enormous hereabouts; Thorns, in the park, especially, are loaded, and form a beautiful feature in the landscape. Most of the Hollies, Cotoneaster frigida, C. Simonsi, are loaded with them, and there is no shrub which is

more attractive in the pleasure grounds than these two shrubs. Just now Beech-mast, Chestnuts, Walnuts, have also been very plentiful, and for the past two months the rooks and squirrels have been very busy laying up stores of them. *W. A. Cook, Compton Bassett.*

SEVERE WEATHER IN DEVONSHIRE.—I have been told that, not since January of 1881, which we all remember, has anything approaching the present severe weather been experienced in this part of the country, and not for thirty or forty years has anything like it occurred so early in the season as was the case this year. It is very rare for us to have frosts of more than a few degrees in this very mild locality before Christmas, and following such a mild autumn I fear that many tender trees and shrubs which grow so luxuriantly here will greatly suffer. *W. Conelly, Rhode Hill Gardens, Axminster.*

TWELVE VARIETIES OF PEARS.—It is often a question with small growers when about to plant Pear trees what varieties should be chosen, and as Pears are considered, rightly or wrongly, luxuries, no trouble should be spared to get those varieties which will afford a continuous supply for the longest time possible. Starting in July, with Doyenné d'Été, a rather small Pear, of very good flavour, and the first to ripen; this will succeed on a wall, or as a bush or espalier. Jargonelle will follow this variety in point of time, and far exceed it in goodness. A tree may be planted on a south, and another on an east, and one on a north wall [in the south], which will secure a long succession of fruits, and those from the south wall colour well, and are exceedingly good. Williams' Bon Chrétien is the next best Pear in season, and may be grown on several aspects, so as to prolong its season. In the south, it is not advisable to plant it on a south wall, unless the soil be clayey; on dry soils in this aspect it is always mealy. Comte Lainy will follow the last-named. It is a tree that requires high cultivation, and a considerable amount of nourishment. The fruit is of medium size, richly coloured when exposed to the sun, and a good bearer when not unduly pruned; in fact, it is better to disbud the tree, and then but little pruning will be required. Louise Bonne of Jersey succeeds this variety, and is one that should not fail in any collection. Trees should be planted in a variety of aspects, and of various forms, to form a long succession; it being a variety which generally sets abundantly, its fruits should be thinned. Marie Louise is a general favourite, and usually a good grower, but it requires watching, as the tree gets sickly sometimes in one season, if its roots should get into a cold or otherwise bad subsoil, and good drainage should be secured for it at the time of planting. It is prudent to examine the roots of this variety at least once in two or three years, and to afford it a large amount of nourishment during growth. The fruits should be thinned if a heavy crop sets. Doyenné du Comice follows in the order of ripening. This I justly term the Queen of Pears, for when this variety is in good condition, I do not know of a Pear to surpass it in flavour. The tree grows strongly and well on a south-west or east wall; when the fruit is carefully exposed to the sun, it is large, and melting, and handsome. Pitmaston Duchess is a fine-looking variety, and is worthy of a place, being the largest dessert Pear, and of passable flavour, when well ripened, the fruit becoming of a handsome colour when kept in a warm dark place; the tree is robust, a good bearer, and needs to be subjected to summer pruning. Winter Nelis follows this one, and is a good-flavoured fruit, and most continuous bearer, and is very acceptable at Christmas. Glou Morçeau follows in order of ripening, another good Pear of its season. It is large and handsome, and a good bearer and grower usually; the fruits colour up well upon a south wall. Then the latest Pear, of which we have several, but I have decided to place Ne Plus Meuris, as it is such a good and constant bearer, it very rarely fails to fruit; it will keep till March and April, if properly ripened, and then of very passable flavour. I could name several I like better than the last-named, but not of more prolific and continuous bearing qualities. In every collection of twelve varieties there should be one stewing, and I here give the position to Catillac, which I consider is the best all-round stewing Pear, and generally does well in the orchard, as a standard or as an espalier and upon a wall. It is a mistake often made, to gather Pears prematurely; some varieties, chiefly early ones, are improved by being gathered early, but not so with late ones. Josephine des Malines and Ne Plus Meuris, and others, do not keep nearly so well and good if not ripened thoroughly. These should be left on the trees till thoroughly mature, and if they are attacked by wasp and flies, traps should be set to catch them, and small meshed nets put over the trees to keep the birds from pecking them. *William A. Cook, Compton Bassett Gardens.*

MUSHROOM GROWING.—At a recent meeting of the Ealing Gardeners' Society, when a paper on "Mushroom Growing" was read by Mr. Gates, an interesting point cropped up, viz., whether darkness or light was the more favourable to full development. As some diversity of opinion prevailed amongst those present on this point, I am desirous of obtaining any information that may have bearing on this question, and my own view of the matter is that the Agaricus campestris, being, to all intents and purposes, a fungus, the same laws apply to this as to the class or subsection generally. Fungus, in accordance with their needs, do not possess the green colouring matter—chlorophyl—which is present in leaves, and cannot assimilate nutriment in the same way as other terrestrial plants. Their requirements are obtained from the carbon compounds assimilated by other plants, and hold that [full] light is certainly detrimental to new growth. *C. B. G., Acton, W.* [Our correspondent errs in supposing the Mushroom is not capable of allowing full development in the light—witness the large, often very large, solid examples found in our fields and gardens, which exceed anything to be got from our beds, however well managed. The spawn it is true is underground and parasitical. Ed.]

HEATING A CONSERVATORY.—This subject is always on the approach of winter a cause of much anxiety and perplexity to many who, like myself, find much pleasure in flowers, but who, as amateurs, having only limited space and means, look forward to a long English winter with anything but pleasant anticipations as to the health and management of the various plants we try to keep through it. I have tried various methods. Once I had a patent stove fitted outside at one end with hot water pipes, &c., all complete; this answered splendidly so far as the plants were concerned, but I caught very severe colds in having to go out of doors to light up and stoke in all weathers. After that experience I gave up the attempt. I am now residing in a house to which is attached a small conservatory. I determined to try again, so last winter I invested in an oil stove and saved my Pelargoniums and cuttings, as I managed to keep the temperature just above freezing point, but the management of the conservatory was more of a duty than a pleasure; the smell of the oil, the daily filling of the reservoir and trimming the wicks, were always unpleasant experiences. Noticing that the conservatory was erected on the side of the house where the dining-room chimney was situated, I determined to try a plan which for many years had been dormant in my mind, viz., to make use of the dining-room fire to heat it. After careful consideration I, with the help of an intelligent blacksmith, fitted a boiler and hot-water pipes; the result has been far beyond my expectations. As many of your readers may have conservatories so situated that they, like myself, could make use of the waste heat of a sitting-room fire to warm it satisfactorily without trouble and little expense, I now give you full details of the arrangement I have carried out. The room has a slow-combustion grate of moderate size. The fire brick at the back was removed, and an ordinary boiler with an arched flue put in its place. The boiler is one of those placed in the kitchen range of all modern houses for heating the bath supply. From the boiler 1½-inch flow and return pipes pass through the brickwork, and are connected with 3-inch pipes, which are laid round under the staging. The length of 3-inch pipes is 32 feet. At the far end near the door is a 16-gallon galvanized tank, through which the hot water circulates. At the side of this tank is a small supply cistern, with inlet pipe connected with the bottom of the tank. A steampipe is fitted to the top of the tank, also plugs to the return pipe for letting the water run out in the summer. A soot door and damper are fitted to the flue in the wall. Ordinary household coal is used, which deposits a white ash and does not clinker. A front plate was fitted to the grate to cover the two lower bars, so as to slow down the consumption of fuel. For the first trial a good fire was made up, and within two hours the tank was hot so that the hand could not be kept on it long. A moderate fire was kept up until 9 P.M.; then a few coals were added. The next morning at 6 o'clock the tank felt slightly warm—minimum temperature inside 60°, minimum temperature outside 45°. One scuttleful of coals daily has thus warmed the dining-room, sitting-room and conservatory, which seems to me to be very economical. The trouble consists merely in keeping up the dining-room fire. The water in the supply cistern was put in to the top on commencing and has not gone down ¼ of an inch. The cost of materials and work was £10 10*s*. Judging by the experiment so far, I feel sure there will be no difficulty even in the hardest frost, as I have up to the present only used very moderate fires, and the tank has never been fully heated. *Le Breton.*

EPIPHYLLUMS.—There are no plants that flower at this season of the year that can compare with the Epiphyllums, especially when grown in the way they are by Mr. Wallis, gardener to Captain Prettyman, at Orwell Park, who has them on the Pereskia stock, some of the plants being grafted up the stem at intervals and trained as pyramids, and others as standards, the plants having various sized heads, and the effect of the whole in the conservatory just now is simply magnificent, as they are all full of flower, and make a grand show. The pyramids range from 4 to 7 feet or more high, and are supported by neat cast-iron rods, with triangular feet, the rods being hidden, or nearly so, by the wealth of branches that hang or bend so gracefully over. Beautiful as these specimens are, I think the easy headed standards are even more so, as the habit of the Epiphyllum seems to lend itself to that form, and they look so natural, and are splendid in the rich colouring the flowers afford. These are of different shades, as most of the sorts are seedlings Mr. Wallis has raised, some being after the manner of E. violaceum, but improvement on that good old kind, and others superior to Russelianum, so rich are the hues. The treatment the plants receive to get them to their high standard, is plenty of warmth and moisture when making their growth, and they have full exposure to the sun and light, which ripens it and sets an abundance of bud. *J. Sheppard.*

AWARDING PRIZES ACCORDING TO MERIT.—I fear in spite of my efforts to make my proposals with respect to a reform in the ordinary methods of awarding prizes at horticultural shows as intelligible as possible, yet Mr. Claydon, who is a fair critic, nevertheless, does not seem to have fully grasped them. I laid down no hard and fast line with regard to the distribution of the entire prize or sums set apart as prize money in each class, and in taking a sum of £6 for instance in the illustration given, I took one which forms a common total to some class or other. There ought to be no difficulty whatever in the awarding according to merit through points, indeed, judging where competition is keen is often haphazard, when a mere cursory look over the exhibits is permitted to be the means of awarding the prizes. Let me take the illustration given by Mr. Claydon. Here is a sum of £6 set apart in a class to be given in three prizes. Now we all know that the customary rule is to allot this sum in this way: 1st, £3; 2nd, £2; and 3rd, £1. Now turning to Mr. Claydon's illustrative exhibits, what do we find? why, that taking a maximum of sixty points, the best collection in the class is perfect, a very uncommon feature, but still not impossible. It takes the 1st prize of £3. Very good! But then the 2nd best collection gives a maximum of only twenty-five points, so poor in quality in fact as to allow room for half a dozen fair collections to come in between them, and yet that collection must of necessity take the 2nd prize, of £2, although almost 2½ times inferior in merit to the best collection; whilst the collection is so wretchedly poor as to merit only 20, or one-third the number of marks, gets third prize of £1. What is unfair about the arrangement is, that the poor collection, with only 25 marks, gets a prize so relatively above its deserts, whilst the best collection is indifferently rewarded. What would be a proper proportioning of the £6 to these respective collections is £3 10*s*. to the first, £1 10*s*. to the second, and £1 to the third. What could be simpler and fairer than such a division, and how easily based on the number of points or marks given by the judges in each case. But Mr. Claydon's illustrative competition is, after all, perhaps an uncommon one, whilst far more common is the class which gives close and keen competition. It is, as I have previously shown in such cases where the present system proves to be so unfair, where with a maximum of 60 points a class gives in three collections 56, 53, and 50. For instance, it is as obvious that to give the 1st in money one-third more than

the 2nd, and two-thirds more than the 3rd, is very unjust; it is in fact an apportionment that in any ordinary case of valuation or of arbitration would never be sanctioned. The really fair apportionment would be 45*s*., 40*s*., and 35*s*., an arrangement that could not fail to give entire satisfaction. I fear, having probably a wider experience than Mr. Claydon has, that his suggestion as to the non-mercenary desires of exhibitors in regard to prize competitions is too good-natured to be true. A recently deceased well-known nurseryman used to say, "Give us good prizes, gentlemen, and we'll make you good shows;" and I believe most exhibitors, whether amateur or gardener, will and do say ditto. Let any enterprising horticultural executive promote a series of shows without prizes, and the end may easily be foretold. Occasionally a good show may be got up under peculiar circumstances without the stimulus of prizes, but only occasionally. My desire in making the drastic proposals which I have is directly with the object of encouraging competition at shows by assuring the exhibitor that he shall secure an award in exact accordance with the merits of his exhibits. I should much prefer to see some fredom permitted to judges when dealing with classes in which competition is both close and considerable. How often have judges been pained to leave unrewarded collections of great merit, yet coming but just below the arbitrarily-fixed 3rd and lowest prize. Supposing in such a class the judges were empowered to award the total sum set apart for the class in three or more prizes, then often good collections would receive some proper reward. As to the case of cups, holding, as I do, that these things are, as a rule, not what they seem, I should be very glad to see a system of prize-awarding introduced which would abolish them. *A. Dean.*

THE "AQUARIUM" AND ITS FLOWER SHOWS.—In the discussion which has taken place, everyone admits the unsuitability of the place, some on physical, others on moral grounds, some on both; but no one has been able yet to suggest a better locality. The Secretary of the Chrysanthemum Society pleads in favour of the Aquarium the liberal subsidy accorded by the Directors of that Institution; but if the Aquarium be really unfit, for the above reasons, the acceptance of a subsidy only inflicts the deeper discredit on a Society which condescends to accept it. Would not the Society be all the stronger in the estimation of the public and of the horticulturists if it kept itself independent of such associations and such subsidies? It would not have so much prize-money to dispense, perhaps, but prize-money is by no means an unalloyed good, rather is it in many instances a distinct evil. A Society that mainly depends on the amount of prize-money it can distribute among competitors, can hardly be said to occupy a very high position, or to do much for the advancement of pure horticulture. Those who exhibit for trade purposes, act legitimately in studying the interests of their pockets before that of horticulture, and no one thinks the worse of them for so doing. But from other exhibitors we might expect some evidence of a real desire to advance horticulture before their own individual interests. The multiplication of prizes, and the attribution to them of a substantial money value, are calculated to do harm to horticulture by lowering its tone, and by exalting personal interests above what should be the main object of every flower show, however humble. They are calculated to stereotype a vicious routine, to hold up a false, or at least an unnecessarily restricted standard of what is beautiful and good, and to obstruct the development of everything which is not in accordance with the classes of the schedules. Can anything be more dreadful, except to a few devotees, than the orthodox Dahlia show? Even a Rose show is not so bad as that; while, thanks to the introduction of the "Japs," which were frowned on at first by schedule-makers, Chrysanthemum shows have become more tolerable and interesting to the public, and lighten up the dark days of winter with a glorious burst of colour. Let us have them in some place freed from distractions, and where the "entertainments" are less peculiar. For real enjoyment of flowers, the Chiswick Conference of last year was far more to the taste of many, including the writer, than was the second centenary. *A Casual Exhibitor, but not a Prize-winner.*

KENTIA FORSTERIANA.—The genus Howeia, to which you refer the plant figured at p. 533, should have a simple spadix, whereas your figure shows a panicled inflorescence; indeed, I think the tree represented is Kentia Canterburyana. *O. Drude, Dresden.* [We are greatly indebted to our correspondent. The photograph, with the name attached, was sent from the Sydney Botanic Garden. The name Howeia was attached by us in accordance with the note in Bentham and Hooker's *Genera Plantarum*, iii., 904, 1883. Ed.]

NECTARINE PINE-APPLE.—In a recent issue, p. 656, Mr. Divers speaks highly of this Nectarine, placing it along with Dryden, as one of the best. We have the variety here in a Peach-house, occupying a space of 30 feet in length, in the front part. The trellis is 13 feet in width, and therefore some idea may be gathered of the size of this tree; a tree of Elruge, in the same house, is being cut away from time to time, to allow the Pine-apple to extend, and in one season more the Elruge will disappear entirely. The Pine-apple Nectarine tree has borne for some years a crop of about 400 fruit, which swell to a large size, and are regularly distributed over it. The colour and flavour are both good. It was planted as a maiden eleven years since, in a border which is made entirely inside the house, and consists of strong loam and a fair proportion of lime rubble. The depth of this border is greater than that generally recommended, being not less than 3 feet 6 inches, and it has not been interfered with since it was made. The drainage is good, allowing of abundance of water being afforded the roots during growth, and in winter. There is one slight drawback that the fruits of this variety have, which is shrivelling directly they are ripe, and it may not be called a good keeper. If the fruit ripens in July, the house should be shaded for some time before the fruit is quite ripe, and in this manner shrivelling may be averted, and ripening is retarded for a little time. The shade does not affect the flavour at all, nor the colouring, as that already exists, and the skin on the sunny side assumes a dark bronzy aspect. Sometimes it will happen that in dull weather, when the fruit is swelling, there will be some amount of "cracking," especially if the crop be a very heavy one, and when this shows, syringing should not be so freely performed, and more air admitted. One or two good sprinklings of soot, previous to watering the border, when the trees are in active growth, will be found beneficial, as also mulchings of stable manure. *E.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

December 9.—Present: Dr. Masters, in the chair. Mr. McLachlan, Mr. Michael, Rev. C. Wolley Dod, Professor Church, Dr. Scott, Dr. Oliver, and Mr. Blandford, Hon. Secretary.

Diseased Grapes.—Grapes received from Mr. Barron were exhibited, attacked with fungoid disease Dr. Masters pointed out that the disease had been described by Mr. Worthington Smith, see *Gard. Chron*, p. 657, December 6, 1890, and called attention to its resemblance to, and possible connection with, "scald," a much commoner complaint in which no fungoid growth had been previously described.

Soil for Alpine Plants.—The Rev. C. Wolley Dod showed samples of burnt clay, which he had found the best soil for alpine plants. It prevented the growth of Hepaticæ, and was soft and friable, and far superior to broken brick. The cost of burning was about a shilling per ton. Professor Church undertook to determine the chemical composition of the earth used.

Effects of Frost.—Dr. Masters showed leaves of Aucuba blackened and killed by exposure to a temperature of —2° Fahr. on the night of November 28, at Croydon. This exceptional temperature was independently confirmed. The Aucuba is usually among the hardiest evergreens. The variegated leaves appear to suffer most from frost.

Abnormal Development of bulbs.—Dr. Masters showed bulbs, probably of Freesia, which had sent up a premature development of the shoots in an upward direction, bearing secondary bulbs on its sides. It appeared to be a converse phenomenon to what occurs in the case of bulbs, which send down "droppers," and may possibly be due to too deep planting.

Banksian Rose in Fruit.—Dr. Masters also showed a Banksian Rose which had been cross-fertilised by another species. The carpels were developed, but not the "hip", so that the same condition was found as in the carpels of Potentilla or Geum. This species has not been previously known to fruit in this country.

Hybrid Orchids.—Dr. Masters showed two hybrids between Cypripedium Chantini and C. Spicerianum, whose parents were of inverse sex.

Study of Plant Pathology.—Dr. Masters read a letter he had received from Dr. Sorauer, of Proskau, inviting him to join the Internationale Phyto-Pathologische Commission for the study of plant diseases. This Commission has arisen out of the recent Exhibition of Agriculture and Forestry in Vienna. He thought that the invitation might fitly be extended to other investigators of such matters. After some discussion, Mr. Michael moved, "That it be suggested to Dr. Sorauer that the Internationale Phyto-Pathologische Commission place itself in communication with the Chairman of the Scientific Committee of the Royal Horticultural Society, with a view to an arrangement for the exchange of information and assistance between the two Societies."

This was seconded by Professor Church, and carried.

Fog Investigation.—Dr. Oliver proposed to present an *interim* report at Easter. This was agreed to.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending December 6.	Temperature. Accumulated. Above 42° for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1890.	Below 42°, difference from Mean since Jan. 1, 1890.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1890.	Total fall since Jan. 1, 1890.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1890.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	2 —	0	35	+ 216	— 118	7 —	254	54.1	7	24
2	3 —	0	53	+ 53	— 79	6 —	210	32.3	1	29
3	4 —	0	49	+ 158	— 118	6 —	182	24.1	3	29
4	7 —	0	67	+ 59	+ 5	6 —	176	22.7	14	36
5	9 —	0	85	+ 38	— 8	6 —	174	21.8	4	32
6	8 —	0	67	+ 59	— 39	6 —	171	24.5	26	34
7	4 —	0	43	+ 109	— 133	9 —	215	52.5	0	30
8	8 —	0	66	+ 149	— 84	8 —	201	34.5	4	29
9	7 —	0	43	— 33	+ 39	10 —	208	35.9	8	35
10	3 —	0	26	+ 137	— 132	3 —	237	37.5	16	29
11	3 —	4	29	+ 148	— 58	4 —	219	39.5	19	32
12	5 —	5	19	+ 66	+ 22	9 —	205	31.4	43	42

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending December 13, is furnished from the Meteorological Office:—

"The *weather* has been very cold, quiet, and dry in almost almost all parts of the kingdom, with much gloom and fog over the inland parts of England, and a very large amount of cloud in Ireland and Scotland. At some of the south coast stations, however, the sky cleared occasionally. During the 10th and 11th the weather on our extreme western and northern coasts was mild and rainy.

"The *temperature* has been below the mean in all districts, the deficit having ranged from 2° in 'Scotland, N.,' and 3° in 'Scotland, E.,' and over Ireland; to 5° in the 'Channel Islands,' and between 7° and 9° over the greater part of England. The

highest of the maximum, which occurred on rather irregular dates, varied from 51° in the 'Channel Islands' and in 'Ireland, S.,' to 38° in the 'Midland Counties.' The daily maxima over England were generally very low. During the latter part of the week the thermometer in many instances did not reach 30°. The lowest of the minima (which were recorded on the 7th in Scotland, on irregular dates in Ireland, and on the 13th over England) ranged from 20° to 21° at the Irish stations, from 18° to 24° in Scotand, and from 14° to 19° over England.

"The *rainfall* has been very slight, or altogether absent, at the English stations, and very trifling over Scotland, while in Ireland the fall has been considerably less than the mean.

"*Bright sunshine* has again been very deficient generally, but at some of the extreme southern stations a fair amount has been recorded. The percentage of the possible duration varied from 43 in the 'Channel Islands,' and 26 in 'England, S.,' to 19 in 'Ireland, S.,' 14 in 'England, E.,' and between 8 and 1 in most other districts. In 'Scotland, W.,' the percentage was less than 1.

MARKETS.

COVENT GARDEN, December 18.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. ED.]

Market quiet. Supplies generally good. Prices unaltered. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	... 3 6-	7 0	Lemons, per case	...20 0-	40 0
— Nova Scotia, brl.	15 0-	25 0	Melons, each	... 0 6-	2 0
Cobs, Kent, 100 lb.	...65 0-	70 0	Pine-apples, St. Michael, each	... 2 0-	8 0
Grapes, lb.	... 0 9-	3 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, each	... ... 0 4-	0 6	Lettuces, per dozen	... 1 6-	...
Beans, French, lb.	... 1 0-	...	Mushrooms, punnet	2 0-	...
Beet, red, per dozen	2 0-	3 0	Mustard and Cress, punnet	... ... 0 4-	...
Carrots, per bunch	... 0 6-	...	Parsley, per bunch	... 0 4-	...
Cauliflowers, each	... 0 4-	0 6	Shallots, per lb.	... 0 6-	...
Celery, per bundle	... 1 6-	2 6	Spinach, per bushel	... 3 0-	...
Cucumbers, each	... 0 4-	0 6	Tomatos, per lb.	... 0 9-	1 0
Endive, per dozen	... 2 0-	...	Turnips, per bunch	0 4-	...
Herbs, per bunch	... 0 4-	...			

POTATOS.—Supply best Potatos rather short, from 5*s.* to 10*s.* increase, and ordinary samples, 5*s.* increase, but during holidays expect trade to be quiet.—*J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	18 0	Evergreens, in var., per dozen	... 6 0-	24 0
Aspidistra, doz.	...18 0-	42 0	Ericas, various, doz.	8 0-	18 0
— speci. plants, each	7 6-	10 6	Ferns, in var., per dozen	... ... 4 0-	18 0
Bouvardias, p. doz.	9 0-	18 0	Ficus elastica, each	1 6-	7 0
Chrsanthem., p. doz.	4 0-	18 0	Foliage plants, various, each	... ... 2 0-	10 0
— specimen plants, each	... ... 2 6-	5 0	Marguerites, doz.	... 6 0-	12 0
Cyclamens, dozen	... 9 0-	18 0	Mignonette, per doz.	4 0-	6 0
Cyperus, per dozen	... 4 0-	12 0	Palms in variety, each	... ... 2 6-	21 0
Dracæna terminalis, per dozen	... ...30 0-	60 0	Poinsettias, dozen	... 9 0-	15 0
— viridis, per doz.	12 0-	24 0	Solanums, per doz.	.... 9 0-	15 0
Euonymus, in var., per dozen	... ... 6 0-	18 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Bouvardias, per bun.	0 6-	1 0	Pelargoniums, scarlet, 12 spr.	... ... 6 0-	1 0
Callæthiopica, 12 bl.	9 0-	18 0	— dozen sprays	... 1 0-	1 6
Carnations, 12 blms.	1 0-	3 0	Poinsettias, 12 blms.	4 0	12 0
Chrysanth., 12 bun.	3 0	12 0	Primulas, double, 12 sprays	... ... 0 6-	1 0
— 12 blooms	... 2 0-	6 0	Roses, Tea, per doz.	1 0-	4 0
Cyclamens, per doz.	0 3-	0 6	— coloured, dozen	3 0-	5 0
Eucharis, per dozen	3 0-	8 0	— red, per dozen	... 3 0-	6 0
Gardenias, 12 blooms	4 0-	12 0	— Safrano, French, per box of 100	... 3 0-	6 0
Heliotropes, 12 spr.	0 6-	1 0	— ditto, per dozen	1 0-	2 0
Hyacinths, Rom., 12 sprays	... ... 1 0-	2 0	Stephanotis, per 12 sprays	... ... 4 0-	6 0
Lilium, var., 12 bl.	... 2 0-	6 0	Tuberoses, 12 blms.	.... 0 6-	0 9
Maiden Hair Fern, 12 bunches	... 4 0-	9 0	Violets, 12 bun.	... 1 0-	3 0
Marguerites, 12 bun.	3 0-	6 0	— Parme, Fr., bun.	5 0-	8 0
Narcissus (paper white), 12 sprays	1 0-	2 0	— dark, Fr., bun.	... 2 0-	4 0
— French, 12 bun.	4 0-	9 0			
Mignonette, 12 bun.	2 0-	4 0			

ORCHID-BLOOM in variety.

SEEDS.

LONDON: *Dec.* 17.—Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, London, E.C., report to-day's market thinly attended, with almost a complete lack of business. Transactions in Clover seeds, as is usual towards Christmas, become very limited. However, taking into consideration the smallness of stocks and the moderate prices prevailing, the position generally is regarded as healthy, and the outlook for the new year as encouraging. Some fine Alsyke has been changing hands at full rates. Koenigsberg Tares experience increased attention. With regard to Peas and Haricots, previous currencies are firmly supported. Linseed is dearer. There is no change in Dari or Buckwheat.

FRUIT AND VEGETABLES.

SPITALFIELDS: *December* 17.—Green vegetables scarce; demand fair, good supplies of Potatos, but demand only moderate. Fruit trade inactive. Prices:—English Apples, 4*s.* to 8*s.* per bushel; American Apples, 15*s.* to 22*s.* per barrel; Pears, 3*s.* to 6*s.* per half sieve; foreign Tomatos, 6*s.* to 9*s.* per peck; Savoys, 2*s.* to 4*s.* 6*d.* per tally; Cabbages, 2*s.* to 3*s.* per tally; Spinach, 1*s.* to 2*s.* per bushel; Turnip tops, 1*s.* 6*d.* to 2*s.* per sack; Cauliflowers, 2*s.* to 3*s.* 6*d.* per doz.; Curly Kale, 9*d.* to 1*s.* 6*d.* per bushel; Seakale, 1*s.* to 1*s.* 3*d.* per punnet; Greens, 2*s.* to 4*s.* per dozen bunches; Turnips, 2*s.* to 3*s.* do.; Parsnips, 6*d.* to 1*s.* per score; Beetroots, 3*d.* to 4*d.* per dozen; Carrots, 2*s.* 6*d.* to 3*s.* per dozen bunches; Parsley, 2*s.* to 3*s.* do.; Brussels Sprouts, 1*s.* 3*d.* to 2*s.* 6*d.* per half-sieve; Celery, 6*d.* to 1*s.* per bundle; Horseradish, 1*s.* to 1*s.* 4*d.* per bundle; Leeks, 1*s.* 9*d.* to 2*s.* 6*d.* per dozen; Endive, 1*s.* 6*d.* to 2*s.* do.; Cabbage Lettuces, 1*s.* 6*d.* to 2*s.* do.; Mustard and Cress, 1*s.* 6*d.* to 2*s.* per dozen baskets; English Onions, 4*s.* 6*d.* to 5*s.* per cwt.; Spanish do., 7*s.* to 8*s.* per case; Dutch do., 3*s.* to 3*s.* 3*d.* per bag of 110 lb.; Belgian do., 3*s.* to 3*s.* 6*d.* do.; Carrots, 25*s.* to 45*s.* per ton.

STRATFORD: *December* 16.—There has been a good supply of all kinds of produce at this market during the past week, and a brisk business was done at the undermentioned prices:—Cabbages, 2*s.* to 3*s.* 6*d.* per tally; Savoys, 3*s.* to 5*s.* do.; Cauliflowers, 3*s.* to 5*s.* 6*d.* do.; Carrots, household, 35*s.* to 45*s.* per ton; do. 2*s.* to 3*s.* per dozen bunches; do., cattle-feeding, 26*s.* to 34*s.* per ton; Parsnips, 2*s.* 6*d.* to 3*s.* per cwt.; Mangels, 17*s.* to 19*s.* per ton; Swedes, 15*s.* to 20*s.* do.; Onions, English, 4*s.* 6*d.* to 5*s.* per cwt.; do. Dutch, 3*s.* to 4*s.* 6*d.* per bag; Apples, English, 3*s.* to 7*s.* per bushel; Dutch do., 14*s.* to 15*s.* per barrel; Celery, 6*s.* to 12*s.* per dozen bundles; Watercress, 8*d.* per dozen.

POTATOS.

BOROUGH AND SPITALFIELDS: *Dec.* 16.—Quotations:—Hebrons, 60*s.* to 100*s.*; Magnums, 55*s.* to 85*s.*; Scotch, 90*s.* to 120*s.*; Imperators, 65*s.* to 90*s.* per ton.

SPITALFIELDS: *Dec.* 17.—Quotations:—Magnums, 55*s.* to 75*s.*; Regents, 60*s.* to 90*s.*; Champions, 55*s.* to 70*s.*; Imperators, 60*s.* to 85*s.*; Hebrons, 60*s.* to 70*s.*; Early Rose, 50*s.* to 55*s.* per ton.

STRATFORD: *Dec.* 16.—Quotations:—Magnums, light, 60*s.* to 75*s.*; do., dark, 55*s.* to 65*s.*; Hebrons 70*s.* to 80*s.*; Imperators, 55*s.* to 70*s.* per ton.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending December 13, and for the corresponding period last year:—1890: Wheat, 32*s.* 2*d.*; Barley, 28*s.* 5*d.*; Oats, 17*s.* 10*d.* 1889: Wheat, 30*s.* 2*d.*; Barley, 29*s.* 10*d.*; Oats, 17*s.* 11*d.*

CHRISTMAS CATTLE MARKET.

ISLINGTON: *Dec.* 15.—The Cattle and Sheep Show made a great display. The supply of cattle was suitable in quality and extent to the demand. The Scotch were by far the strongest in number, but other classes were well represented. Prices compared fairly well with last year's. There were 5330 beasts, including 2400 Scots, 2460 English, 200 Irish, quoted — Scotch and Devons, 5*s.* to 5*s.* 4*d.*; Norfolk, 4*s.* 10*d.* to 5*s.*; Herefords and Runts, 4*s.* 8*d.* to 4*s.* 10*d.*; Shorthorns, 4*s.* 4*d.* to 4*s.* 6*d.* Last year's supplies footed up 5080—ranging from, for Scotch and Devon, 5*s.* to 5*s.* 2*d.*; Norfolks, 4*s.* 10*d.* to 5*s.*; Herefords and Runts, 4*s.* 10*d.*; Shorthorns, 4*s.* 8*d.*; Irish, 4*s.* 6*d.* per 8 lb. In 1880 the prices ranged between 4*s.* and 6*s.* Sheep were strong in numbers, as well as making up a fine collection. Trade opened slack, but improved as prices gave way, but the supply was too large to enable a clearance to be effected. Choice small Downs brought 6*s.* to 6*s.* 2*d.* and 6*s.* 4*d.*; heavy Downs, 5*s.* 6*d.* to 5*s.* 10*d.*; half-bred, 5*s.* 6*d.* to 5*s.* 8*d.*; white wethers, 5*s.* 2*d.* to 5*s.* 4*d.*; ewes, 4*s.* 10*d.* to 5*s.*, per 8 lb. The total supply was 13,250. Last year's choice small Downs brought 6*s.* 8*d.* to 6*s.* 10*d.*; heavier, 6*s.* 4*d.* to 6*s.* 6*d.*; half-bred, 6*s.* to 6*s.* 4*d.*; white-faced wethers, 5*s.* 8*d.* to 5*s.* 10*d.*; ewes, 5*s.* 6*d.* per 8 lb., the total supply being 11,250.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Clover, prime, 80*s.* to 102*s.* 6*d.*; inferior, do., 40*s.* to 75*s.*; hay, best, 60*s.* to 87*s.*; inferior, do., 26*s.* to 50*s.*; and straw, 24*s.* to 38*s.* per load.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

CHANNEL ISLAND POTATOS.—"A. O. W." would be much obliged if any of your correspondents could give him information as to the methods adopted in the Channel Islands for growing early Potatos. 1. Preparation of the land. 2. Nature of the manure used, and quantity per acre. 3. Variety of Potato chiefly grown. 4. Weight of sets per acre. 5. When sets are planted, and if first sprouted, and any other useful information on the subject.

COBBLERS' HEAL.—What plant is intended under this name? *A.*—[Search has been made in vain in the ordinary books of reference. ED.]

NOTICES TO CORRESPONDENTS.

CINCHONA CULTIVATION IN BOLIVIA: *Quito.* If you will send your address (for we have mislaid your letter), we will give you that of a gentleman who has the following books for sale:—*Cinchona Forests of the Quiterian Andes*, and *Cinchona Experiments and Observations.*

MARKET REPORTS: *One who Knows.* We would draw our correspondent's attention to the paragraph frequently inserted at the head of those weekly reports. The figures represent approximate averages, and are supplied by prominent salesmen who are responsible for the quotations. We see that in the week you allude to, the same prices were given in other journals.

NAMES OF PLANTS: *No name.* 1, Physalis Alkekengi (Bladder Cherry); 2, Arbutus Unedo (Strawberry Tree); 3, Pteris cretica var.; 4, Asplenium rhizophorum.—*J. W. W.* Oncidium tigrinum.—*Tom Harris.* 1, Dracæna rubra; 2, D. terminalis; 3, D. congesta; 4, Davallia canariensis; 5, Selaginella cæsia; 6, S. denticulata.—*S. A.* Probably Triteleia uniflora; send when in flower. —*C. K.* Looks like a Ligustrum or Phyllerea, drawn by being grown in the shade.—*A. B.* 2, Cotyledon fusifera; 3, Sempervivum canariense. 4, Cotyledon discolor. — *J. H.* Cypripedium insigne.

PINE-APPLE: *J. W.* The roots are—some of them—dead; but what has killed them we are unable to ascertain—too much water afforded after repotting—too great or too little bottom-heat, &c., would do so; but we glean nothing as to the culture pursued from your note.

PLANTS LOSING THEIR LEAVES: *C. H. P.* The combustion of gas in the conservatory, or its escape from the pipes, would seem to be the cause of the injury. If oil were employed instead of gas, the evil would cease.

ROSE CUTTING: *G. P. H.* Such swellings are not uncommon. By some it is supposed that a peculiar "Slime fungus" is connected with this outgrowth. Of course it has only a superficial resemblance to a bulb.

TESTIMONIAL TO MR. E. R. CUTLER: *Mark Hebblethwaite.* Subscriptions are being collected, and a large sum has already been secured. Mr. H. J

Veitch, Royal Exotic Nursery, Chelsea, is the Treasurer.

THE CABBAGE-GALL WEEVIL: *H. M.* The usual remedy is to make a puddle of lime and soot in equal parts and water, and mix well together. Stir it well, and then dip the plants in it before setting them out. A little of it may also be put in



FIG. 146.—CABBAGE-GALL WEEVIL AND GRUB.

the hole made with the dibber or trowel. Guano, superphosphate of lime, and nitrate of soda may be applied as a top-dressing on Cabbage quarters infested with these beetles some weeks before planting.

WOOD FOR ORANGE TUBS: *Tub.* The best to be obtained in this country is well-seasoned Oak, of 1 or 1¼ inches in thickness. These tubs are easier to transport, and more durable if made round and strongly hooped. They should have from two to four iron bars passed through the staves, 2 or 3 inches from the bottom, to support the bottom, which should also be of Oak slabs. Place strong hooks on opposite sides of the tub, through which strong wooden levers may be put for convenience of carrying.

CATALOGUES RECEIVED.

ROBERT OWEN, Floral Nurseries, Castle Hill, Maidenhead.—Chrysanthemums.

JAMES VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, S.W.—Seeds.

W. E. BOYCE, Archway Road, Highgate, N.—Chrysanthemums.

W. FROMOW & SONS, Sutton Court Nurseries, Chiswick, London, W.—Seeds.

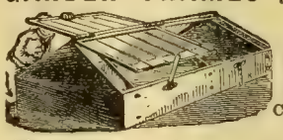
COMMUNICATIONS RECEIVED.—Dr. Kranzlin, Berlin.—T. W. B. (next week).—O. H.—H. Correvon, Geneva.—E. C.—C. de B., Lierre.—C. A. F.—J. R. J.—H. A. H., Weener.—Dr. Macoun, Ottawa.—Sutton & Sons.—W. W.—W. S., Whitinsville, Mass.—Harrison Weir.—Pitcher & Manda should address the publisher on matters relating to advertisements.—B. F.—E. H. M.—E. B. T.—T. H.—A. G. Andrews (thanks).—J. W.—J. B.—A. E.—A. Bishop.—T. B.—H. G. W.—W. Bellworthy (please send full address).—R. V. S.—H. F.—H. C.—A. G.

PHOTOGRAPHS RECEIVED.—C. A. F.—W. S., Whitinsville, Mass. (thanks).—James Menzies (with thanks).

FRENCH SUGAR BEET.—We learn that the actual deficit in the French Beet crop is estimated at 1,500,000 tons, while the density of the roots is reduced from 7 to 6 4. It is almost too early to hazard a guess at the effect of this great deficit, but it cannot but be seriously felt in the sugar trade. The industry is to a great extent subsidized by Government. At the present time there are 413 factories at work, with steam up to 72,000 horse-power, giving employment to 25,000 workmen, among whom some 30,000,000 francs are annually distributed. The Beet crop is regarded as the second most important in French agriculture, and its failure—which means a deficit of 600,000,000 lb. of sugar—is attributable to the combined effects of a wet spring and a sunless summer. As the returns from the duty levied on sugar materially affects the budget, its importance is very great.

BOULTON & PAUL,
HORTICULTURAL BUILDERS, **NORWICH.**
WINTER GARDENS, CONSERVATORIES,
and GREENHOUSES in all styles.

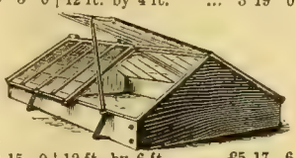
GARDEN FRAMES in great VARIETY.



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PORTABLE PLANT PRESERVER.
CASH PRICES. CARRIAGE PAID.

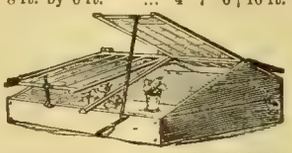
6 ft. by 3 ft.	£2	0	0	6 ft. by 4 ft.	£2	7	6
12 ft. by 3 ft.	3	3	0	12 ft. by 4 ft.	3	19	0

No. 73.
NEW SPAN-ROOF GARDEN FRAME.



CASH PRICES. CARRIAGE PAID.

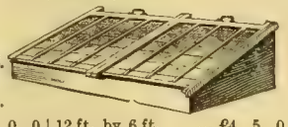
4 ft. by 6 ft.	£2	15	0	12 ft. by 6 ft.	£5	17	6
8 ft. by 6 ft.	4	7	6	16 ft. by 6 ft.	7	7	6



No. 74.
THREE-QUARTER SPAN GARDEN FRAME.
CASH PRICES, CARRIAGE PAID.

4 ft. by 6 ft.	£2	15	0	12 ft. by 6 ft.	£6	0	0
8 ft. by 6 ft.	4	7	6	16 ft. by 6 ft.	7	12	0

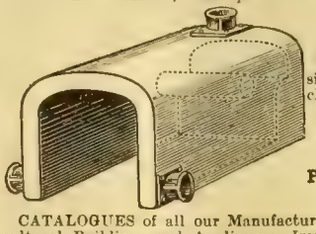
No. 75.
MELON AND CUCUMBER FRAME.



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8 ft. by 6 ft.	3	0	0	16 ft. by 6 ft.	5	10	0

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Inches.		Inches.	
14×12		20×15	
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20×12		24×16	
16×14		20×18	
18×14		22×18	
20×14		24×18	

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HORTICULTURAL STRUCTURES
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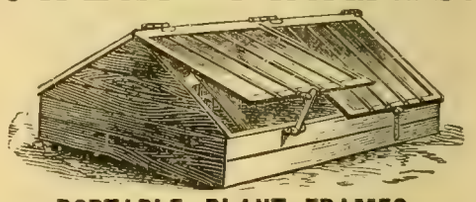


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6 feet long, 3 feet wide			2	0	0
6 feet „ 4 feet „		Packing	2	10	0
12 feet „ 4 feet „		Cases	4	7	6
6 feet „ 5 feet „		FREE.	3	10	0
12 feet „ 5 feet „			5	17	6

Larger sizes at proportionate prices.
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EPPS'S
GRATEFUL—COMFORTING.
COCOA
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THE

GARDENERS' CHRONICLE

FOR

JANUARY 3, 1891,

WILL

CONTAIN AS A SUPPLEMENT

A

SHEET ALMANAC.

As a large Extra Circulation of this Number is guaranteed, it will be a very valuable medium for Advertisements.

ADVERTISERS DESIROUS OF SECURING SPACE IN THIS NUMBER

are requested to communicate with the Publisher not later than **WEDNESDAY**, the 31st inst.

W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

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Head Line charged as two.

4	Lines	..	£0	3	0	15	Lines	..	£0	8	6
5	,,	..	0	3	6	16	,,	..	0	9	0
6	,,	..	0	4	0	17	,,	..	0	9	6
7	,,	..	0	4	6	18	,,	..	0	10	0
8	,,	..	0	5	0	19	,,	..	0	10	6
9	,,	..	0	5	6	20	,,	..	0	11	0
10	,,	..	0	6	0	21	,,	..	0	11	6
11	,,	..	0	6	6	22	,,	..	0	12	0
12	,,	..	0	7	0	23	,,	..	0	12	6
13	,,	..	0	7	6	24	,,	..	0	13	0
14	,,	..	0	8	0	25	,,	..	0	13	6

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26 words, including name and address, 1*s*. 6*d*., and 6*d*. for every additional line (about 9 words) or part of a line.
THESE ADVERTISEMENTS MUST BE PREPAID.
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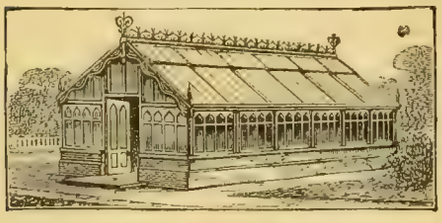
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Advertisements for the current week MUST *reach the Office by Thursday noon.*

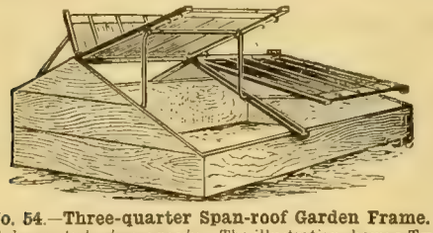
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2 ,, ,,	8 feet by	6 feet ...		4 7 6
3 ,, ,,	12 feet by	6 feet ...		6 0 0
4 ,, ,,	16 feet by	6 feet ...		7 12 6
5 ,, ,,	20 feet by	6 feet ...		9 5 0
6 ,, ,,	24 feet by	6 feet ...		10 17 6

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PRICE LIST
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Borough of Tunbridge Wells.

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SUPERINTENDENT WANTED. — The Council of the Borough of Tunbridge Wells are prepared to receive applications for the post of Superintendent of the Grosvenor Recreation Ground. The extent of the ground is about 8 acres, and the person appointed would be required to devote his whole time to the performance of his duties. The wages will be 25*s.* per week, with house rent free. A statement of the duties can be obtained at my Office at the Town Hall.—Applications in candidates' handwriting, accompanied by copies of three testimonials, must be sent to me on or before Friday, the 26th instant. Dated this 10th day of December, 1890. By order.

W. C. CRIPPS, Town Clerk.

Town Hall, Tunbridge Wells.

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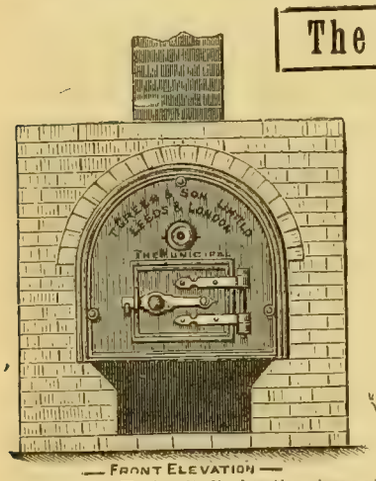
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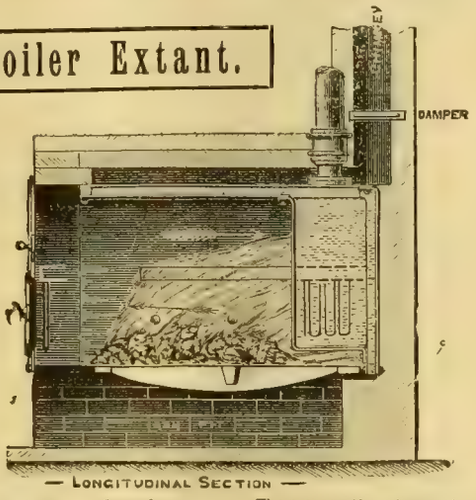
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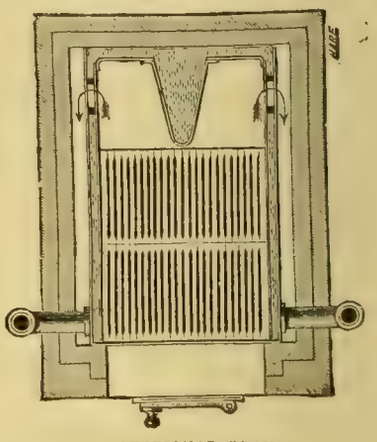
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THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Wednesday Next, December 31.

IMMENSE IMPORTATIONS of LILIES from Japan, comprising 10,000 splendid Bulbs of Lilium auratum, L. longiflorum, L. speciosum album and rubrum, &c.; 10,000 Berlin Crowns LILY OF THE VALLEY, TUBEROSES, AMARYLLIS, LILIUM HARRISII, GLADIOLI, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38 King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 31.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next, Dec. 31 and Jan. 3.

1000 choice named Standard and Dwarf ROSES, from a well-known English grower; Dwarf-trained and Pyramid APPLES, PEARS, PLUMS, and other FRUIT TREES; LILY OF THE VALLEY Crowns and Clumps, SPIRÆA JAPONICA, LILIUMS in variety. Also DUTCH BULBS, comprising HYACINTHS, TULIPS, CROCUSES, NARCISSUS, &c., &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, December 31 and January 3, at half-past 12 o'Clock precisely each day.

On view mornings of Sale, and Catalogues had.

Thursday Next.

LILIES, ROSES, and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on THURSDAY NEXT, January 1, at half-past 12 o'Clock, 10,000 LILIUM AURATUM, splendid Bulbs, just received from Japan; African TUBEROSES, an assortment of Hardy English-grown LILIES and BULBS, CALOCHORTI, GREENHOUSE PLANTS and FERNS from an English Nursery, PALMS, PAMPAS-GRASS, 200 Dwarf ROSES, &c.; and a few lots of DUTCH BULBS.

On view morning of Sale, and Catalogues had.

Thursday Next.

10,000 LILIUM AURATUM, splendid Bulbs, just received from Japan, including several lots of 500 BULBS, specially arranged for the Trade.

MESSRS. PROTHEROE AND MORRIS will include the above in their SALE, on THURSDAY NEXT, January 1.

On view morning of Sale, and Catalogues had.

Friday Next.

IMPORTED and ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, January 2, at half-past 12 o'Clock, an importation of PHALÆNOPSIS AMABILIS, SCHILLERIANA, and STUARTIANA, each plant well established on small block; 500 L.ELIA MAJALIS, also a large number of Established ORCHIDS from various owners, including a fine collection of Cypripedes.

On view morning of Sale, and Catalogues had.

East Dulwich.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. Seeger & Tropp to SELL by AUCTION, on the Premises, the Orchid Nurseries, East Dulwich, S.E., on WEDNESDAY, January 14, a large and selected COLLECTION of well-established ORCHIDS; also a fine importation of the beautiful LÆLIA CRISPA, in splendid condition; LÆLIA MAJALIS, CATTLEYA HENNISIANA, and many others.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—In the event of frosty weather, arrangements can be made for the Plants to remain.

Nurseries for Sale, or Let.

FOR SALE, or LET, the well-known and long established NURSERIES, at Pinefield, Elgin.

For particulars, apply to WILLIAM GRANT, Banker, Elgin; or FORSYTH AND STEWART, Solicitors, Elgin.

TO LET, at nominal rent, 1½ acre walled GARDENS of a Mansion near London (7 miles), on District and Great Western Railways.

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Have an immense Stock of Orchids,

And they are constantly receiving Importations from various parts of the world.

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RASPBERRY CANES.—250,000 of the famous Fastolf variety for Sale. Price 25s. per 1000. In lots of 20,000 at 20s. per 1000, free on rail, Wisbech. Also 50,000 "Semper Fidelis," at 30s. per 10 0.

MANAGER, Osborne House Farm, Wisbech.

ANTHONY WATERER invites from intending Planters an inspection of the following well-grown and finely-rooted EVERGREENS:—

ABIES CANADENSIS (Hemlock Spruce), 5 to 8 feet.
" DOUGLASII, 6 to 12 feet.
" " GLAUCA, 5 to 7 feet.
" HOOKERIANA (Pattoniana), 3 to 4 feet.
CEDRUS ATLANTICA, 4 to 7 feet.
" " GLAUCA, 3 to 6 feet.
" LIBANI (Cedar of Lebanon), 4 to 9 feet.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 4 to 8 feet.
" " LUTEA (Golden), 3 to 6 feet.
JUNIPERUS CHINENSIS AUREA (Golden Chinese Juniper), [3 to 8 feet.
PICEA CONCOLOR, 3 to 7 feet.
" GRANDIS, 5 to 8 feet.
" LASIOCARPA, 4 to 8 feet.
" MAGNIFICA, 3 to 5 feet.
" PUNGENS, 1½ to 4 feet.
" " GLAUCA (Blue Spruce), 1½ to 4 feet.
PINUS AUSTRIACA, 3 to 7 feet; P. LARICIO, 3 to 4 feet.
RHODODENDRONS, from 3 to 8 feet.
THUIOPSIS BOREALIS, 4 to 6 feet.
" DOLABRATA and VARIEGATA, 3 to 7 feet.
THUIA LOBBII (gigantea), 5 to 7 feet.
" OCCIDENTALIS LUTEA (Golden), 3 to 5 feet.
" WARREANA, 3 to 4 feet, and 8 to 9 feet.
WELLINGTONIA GIGANTEA, 3 to 4 feet.
YEWS, Common, 3, 4, and 5 feet.
" Golden, of all sizes up to 10 feet, in various forms, Pyramids, Globes, and Standards, in point of variety, size, and quantity unequalled.
" Golden Seedlings, 3, 4, to 8 feet.
" Irish, 5 to 10 feet.
" " Golden, 3 to 6 feet.
AUCUBA JAPONICA, 2½ to 4 feet.
BAMBUSA METAKE, fine clumps, 4 to 7 feet.
BOX, Green and Variegated, 3, 4, 5, and 8 feet.
HOLLIES, Common, from 3 to 10 feet.
" ALTACLERENSE.
" HODGINS or NOBILIS,
" LAURIFOLIA,
" MYRTIFOLIA,
" SCOTTICA,
" Yellow berried, and other sorts
} 3, 4, 5, up to 10 feet.
" Variegated, of sorts, 3, 5, to 10 feet.
" Golden Queen, 4, 5, up to 10 feet.
" Silver Queen, 4, 5, up to 10 feet.
" Weeping Perry's (Silver Variegated), on straight stems, with heads of 10 to 15 years' growth.
" New Golden Weeping.

Knap Hill Nursery, Woking, Surrey.

THOMAS PERKINS AND SONS,
34, Drapery, Northampton,

Have a large Stock of the following, well-grown, and good Roots:—

ASH, common, 2 to 3, 3 to 4, and 4 to 5 feet.
ALDER, 2 to 3 feet.
BEECH, 2 to 3, and 3 to 4 feet.
BIRCH, 2 to 3, and 3 to 4 feet.
BLACKTHORN, per sample.
BROOM, white, 2 to 3 feet.
DOGWOOD, red, 2 to 3 feet.
CHESTNUT, Horse, common, stout for avenues.
FIR, Larch, 1½ to 2, 2 to 3, and 3 to 4 feet.
" Scotch, 1 to 1½, and 1½ to 2 feet.
GORSE, common, transplanted and seedling.
HAZEL, 2 to 3, and 3 to 4 feet.
HORNBEAM, 2 to 3, and 3 to 4 feet.
LABURNUMS, 5 to 6, and 6 to 8 feet.
LIMES, 6 to 8, 8 to 10, and 10 to 12 feet.
PINUS AUSTRIACA, 1½ to 2, and 2 to 3 feet.
" LARICIO, 1½ to 2 feet.
POPLARS, Black Italian, fine, 10 to 12 feet.
" Balsam, 6 to 8, and 8 to 10 feet.
" Ontario, 10 to 12 feet.
PRIVET, Evergreen, fine, 2 to 3, and 3 to 4 feet.
PRUNUS MYROBALANA, 2 to 3 feet.
SWEET BRIAR, 2 to 3, and 3 to 4 feet.
SYCAMORE, common, 3 to 4, and 4 to 5 feet.
WHITETHORN or QUICK, the largest stock in Great Britain.
ARBOR-VITÆ, American, 2 to 3, and 3 to 4 feet.
BOX, broad leaf green, 1 to 2 feet.
COTONEASTER SIMMONDSII, 3 to 4 feet.
LAURELS, Caucasica, 1½ to 2, 2 to 2½, and 3 to 4 feet.
" rotundifolia, 1½ to 2, 2 to 2½, and 3 to 4 feet.
" latifolia, 2 to 3, and 3 to 4 feet.
" Portugal, fine, 2 to 3 feet.
THUJA Lobbii, 4 to 5 feet.
YEWS, English, the largest stock in Great Britain.
" Irish, 2 to 3, and 3 to 4 feet.
IVIES, Irish very fine, 4 to 5 feet.
JESAMINES, white, in pots.

Very many other articles in large quantities.

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Profitable Plums. Fine Standards.

GEORGE BUNYARD AND CO., Maidstone, can offer the Czar, Victoria, Gisborne's, Belgian Purple, Blue Prolific, Engleheart, Cox's Emperor, and the Waterloo or Kent Bush, the only one that produced a crop this past season. For prices, &c., apply below.

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SCOTCH GROWN ROSES.
HYBRID PERPETUALS, from 7s. per dozen.
TEAS, in great variety, from 12s. per dozen.
STANDARDS, from 24s. per dozen.
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Package and carriage free. All true to name, and well-rooted.
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THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE IS HEREBY GIVEN, that the FIFTY-SECOND ANNUAL GENERAL MEETING of the Members of this Institution will be held at "SIMPSON'S," 101, STRAND, W.C., on THURSDAY, the 15th of January next, for the purpose of receiving the Report of the Committee and the Accounts of the Institution for the present year, and electing Officers for the ensuing year, and on other affairs; also for the ELECTION of NINE PENSIONERS. The Chair will be taken at 3 o'Clock. The Ballot will close at 5 o'Clock precisely.

The Voting Papers have all been delivered. Any Subscriber not having received one is requested to make immediate application.—By order,

EDWARD ROGER CUTLER, Secretary.
50, Parliament Street, S.W.—Dec. 18, 1890.

Landscape Gardening.

B. MALLER AND SONS are prepared to Furnish Plans for, and to carry out all kinds of above work. Burnt Ash Lane Nurseries, Lee, S.E.

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CARNATIONS, wonderful strain, flowering in four months after sowing. Various colours. Clove-scented. Nearly all double. 1s. and 2s. 6d. Packets.

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Grand bulbs, selected from a stock of 25 acres.
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Or, select your own sorts (all prices), from a list of 400 varieties, gratis upon application. Gold Medal, Paris, 1889.

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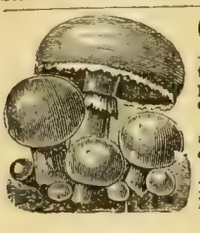




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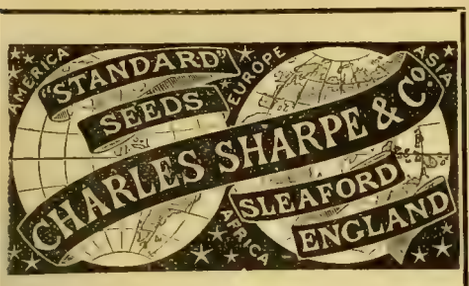
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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 27, 1890.

HOLWOOD HOUSE AND PARK.

THIS old mansion, one of the Kentish seats of Earl Derby, was formerly a hunting-box occupied by various gentlemen who hunted with the Duke of Grafton. In 1673 it was the property of a Captain Pearch; and in 1754 came into the hands of Mr. Calcraft, the Parliamentary agent, and during his occupancy was the *rendezvous* for the heads of the great political parties of the day, and they here privately determined upon their schemes of parliamentary tactics.

From Hasted's *History of Kent* we learn that Mr. Robert Burrows purchased Holwood in 1767, and during his occupancy grubbed up and converted considerable woods into beautiful pastures and sheets of water, and planted ornamental shrubberies. He was descended from Robert Burrows, of Longfield House, in Longfield, in this county, in the latter end of Queen Elizabeth's reign, one of whose descendants, Thomas Burrows, Esq., was of Clapham, and bore for his arms azure three fleurs-de-lis. He left three sons, Christopher, Robert, LL.D., and Sir James Burrows, of Sterborough Castle. Christopher, Esq., the eldest son, was of London, and left Robert Burrows, Esq., the possessor of this seat, as before mentioned, after whose death Holwood passed to Mr. Randall, an eminent shipbuilder. It was sold by Mr. Randall to the Right Hon. William Pitt, second son of William, the great Earl of Chatham, who made it his country residence. It was sold by Mr. Pitt in 1801, and finally, after passing through the hands of four other owners, was purchased by Edward, fifteenth Earl of Derby, having been previously rented by Mary, Marchioness of Salisbury, now the Countess of Derby.

To the energy and good taste of Mr. Pitt, Holwood owes much of its present beauty. He planted exten-

sively, formed new roads and drives, levelled many surface inequalities, and otherwise improved the park during the comparatively short space of sixteen years. On the west side of Holwood hill, is the ancient Roman camp, near which the river Ravensbourne takes its rise, the ramparts of which were planted in a most artistic way by Mr. Pitt. The remains of the camp consist of a large and strong fortification of an oblong form, commanding an extensive view on either side, the area whereof is for the greater part enclosed with ramparts and double ditches of a vast height and depth, especially on the south and west sides. It contains an area of about 100 acres of ground, and is nearly two miles in compass, the measurement of one side of the innermost vallum from the brow of the hill towards Holwood House being fully 700 yards in length. Judging from the quantity of Roman bricks, tiles, ancient foundations, and other remains which have been discovered at various times, there can be little doubt that the camp is of Roman origin. Some persons believe that it was the camp which Julius Cæsar made when the Britons gave him the last battle with their united forces, just before he passed the Thames in pursuit of Cassivelaun; while others suppose it to be the remains of the Noviomagus, the first Roman station from London towards Dover; others again believing it, and with great probability, to have been the place where Aulus Plautius, the prator, after his fourth action with the Britons, encamped with his forces whilst he waited the arrival of the Emperor Claudius, as mentioned by Dion. Its gigantic dimensions, strength, and nearness to the Thames, are strong inducements to think that it could hardly have been made for any other purpose.

Regarding the surface and geology, the soil of which the greater part of the park is composed, may be divided into three distinct classes—chalk, gravel, and clay. Where the chalk is thinly covered with soil, few trees grow very satisfactorily, and this may also be said of the gravel or sand; but where the clay, gravel, and chalk mix in due proportions, an extremely fertile loam is produced, in which the majority of forest trees grow with great rapidity, and attain to large dimensions.

The lake wood is one of the most interesting places on the Holwood estate, it being entirely put aside as a pleasure resort, and where naturalising of plants, birds, and animals is carried on satisfactorily. There are nine ponds or lakes in the wood, five of which are arranged in a sloping series, and in which are numbers of ornamental water-fowls of various kinds—ducks, geese, swans, herons; while along the banks are numerous aviaries, containing birds of prey, pheasants, &c.; as also racoons, opossum, and the badger. An island alongside these is stocked with guinea-pigs; while the ponds are teeming with fish of various kinds, principally ornamental.

One of the smaller ponds is devoted to a selection of hardy aquatic plants, and for nine months out of the twelve the Cape pond-weed (Aponogeton) quite enlivens the surface of the water with its conspicuous May-scented flowers. Here, too, the Lily of the Nile has been established for years, and blooms annually with the greatest freedom; it is planted in about 4 feet of water. The curious Water Soldier (Stratiotes aloides) is a worthy occupant of any pond, and has become quite established at Holwood, in spite of the stealthy marauds of the mallard. Sometimes a doubt is expressed whether the Pitcher-plant (Sarracenia purpurea) is hardy in this country, but a specimen on the banks of this pond, and that has stood unharmed for years, is sufficient proof that it is well able to do battle with very severe winters. The pink Water Lily has not done well, but this I attribute to the small roots received.

One of the prettiest of hardy aquatic plants is that sold by Mr. Ware as the double-flowered Arrowhead, some of the spikes resembling in size and purity of colour those of some of the finer Lothian Stocks.

Around the banks of the pond are planted Bamboos and Bullrushes, Irises and Rushes, as also the curiously marked Zebra-grass (Eulalia zebrina).

Adjoining this is the heathery, where, on one piece of rockwork there are sixty-five distinct kinds of hardy Heaths; and, when in full flower, the appearance of the mound is quite diversified, and of great interest.

Hardy Ferns also come in for a share of attention, for close to the heathery is a choice selection of good kinds, all revelling in the peculiarly suitable soil of which most parts of the lake wood are composed. The Killarney Fern (Trichomanes radicans) may be seen doing well in the grottos of one of the waterfalls.

Amongst rare native plants that are growing wild in this wood, a few, at least, are worthy of special notice, such as the Yellow Bird's Nest (Monotropa), Winter Green (Pyrola media), Toothwort (Lathrea Squamaria), Orobanches, the large-flowered Helleborine (Aphalanthera grandiflora), Epipactis palustris and E. latifolia, and the rare and pretty pink-wood Sorrel (Oxalis Acetosella). Many other rare kinds have been naturalised, such as the English Slipper Orchid (Cypripedium calceolus), and all the hardy North American kinds.

From the top of the wood there is a fine view of High Elms (Sir John Lubbock's seat), and away at a short distance Down is distinctly visible—a place for ever memorable as the home of our illustrious countryman, Charles Darwin.

The Holwood Beeches.

How well the Beech luxuriates on chalky soils is strikingly exemplified on several portions of the property, and where the tree has attained to almost unusual dimensions. Indeed, in some places, particularly to the south of Holwood House, it is quite easy to trace out the chalk ridges by the more luxuriant growth of the Beech, without entering into any examination of the soil.

As giving some idea of the size to which the Beech attains when grown under favourable circumstances as regards soil and situation, I may state that in a space of ground hardly exceeding 100 square yards, six trees contained 667 feet of wood, exclusive of the limbs and branches. One of the largest and most remarkable is that herewith illustrated (fig. 152), and which is growing in the Lake wood, on the left side of the drive, entering from Holwood House.

It is a remarkably picturesque tree, and in perfect health—as is amply illustrated by the shining bark, twiggy head, and great wealth of deep green foliage. At 3 feet from the ground this giant tree is 20 feet 6 inches in girth, above which it divides into ten massive limbs, one of the largest girthing nearly 5½ feet at a yard from where it joins the main stem, the whole tree containing about 240 feet of timber. The branch spread is immense, being in the narrowest part fully 78 feet. Standing as it is on the green sward, and at a considerable distance from any other, this Beech has a very striking appearance.

Another Beech tree, growing within less than a hundred yards of the latter girths, 17 feet 1 inch at a yard up, and contains a large amount of clean, sound timber.

But not only is the typical Beech well represented at Holwood, for of the purple form there are not only the brightest-coloured, but largest specimens that I have yet seen.

To the south of the house, and occupying a very conspicuous position, is one of the largest and best-furnished specimens that has ever come under my notice. It is 11 feet, and 10 feet 11 inches in girth of stem at 3 feet and 5 feet from the ground-level, and has a branch-spread of 75 feet diameter.

In early spring it is an object of great beauty, standing well out on the nicely-wooded park that slopes away towards Down.

There is in the Lake wood one of these trees of singular beauty, the foliage being almost a bright scarlet. It has been grafted, and I much wish that I could increase the stock. *A. D. Webster.*

New or Noteworthy Plants.

Rodriguezia fuerstenbergii, *n. sp.**

This is undoubtedly a lovely new Rodriguezia, in the way of R. Leeana, Rchb. f., from which it differs in several points of much botanical value, but with which it agrees to some extent in the keels of the lip, and in the snowy-white colour of the sepals and lip. The description was made from a fresh flowered and a very true sketch in water-colours, sent to us by Mr. Kirchhoff, head gardener to the Count Fuerstenberg at Donaueschingen, and who obtained the specimens from Messrs. Sander & Co., St. Albans, Herts. The bulbs and foliage are small, and do not by any means give promise of such a strong and long flower-stalk as is ultimately produced. The bulbs are scarcely 1 inch long and ¾ inch broad, and bear a single leaf of 2 to 3 inches in length and scarcely ½ to ¾ inch in breadth. The raceme is over 1 foot in length, and bears (in my specimen) only three flowers; but there can be no doubt that the number will increase as the plant gets established. The flowers themselves are among the best of the genus; they are 2 inches long and more than 1 inch broad; the sepals are very slightly rose-coloured, the petals and the labellum of the purest snowy-white, with a golden-yellow blotch, and eight keels of the same colour on the disc.

Its nearest allies are R. Leeana, Rchb f., on the one hand, and R. refracta, Rchb. f., and R. pubescens, Rchb. f., on the other, to both of which it is related in botanical respects; an analysis of the flower, and matters of a purely botanical interest, will be published in the next (5th) fascicle of the *Xenia Orchidacea. F. Kränzlin.*

Cypripedium × Eyermanianum, *n. hyb.*†

Cypripedium barbatum has now been crossed with every member of the group with green leaves and solitary flowers, the present hybrid, with Spicerianum, completing the series. With C. villosum it yields C. × Harrisianum (and its varieties); with C. Boxallii, C. × apiculatum; with C. insigne, C. × Ashburtoniæ; with C. Druryi, C. × orphanum; with C. Spicerianum, C. × Eyermanianum; with C. Fairieanum, C. × vexillarium; and with C. hirsutissimum, C. × Fraseri. The series is thus a very interesting one. No other species has been so popular with hybridists as C. barbatum, with which eighteen distinct combinations have now been affected. The present hybrid is generally intermediate in character, though the leaf has taken strongly the character of barbatum, also the dorsal sepal, but with the purple mid-line of C. Spicerianum. The petals are a little nearer to those of C. Spicerianum, while the lip has much the shape of this species with the colour of C. barbatum. The

* *Rodriguezia Fuerstenbergii*, n. sp.—Sepalis pallide roseis cymbiformibus acutis, lateralibus ad ⅓ totius longitudinis sejunctis in pseudocaclar breve (ovario 4—5 × breviore), extinctoriiforme inæqualiter didymum protractis; sepalis niveis longioribus latissimisque cuneatis, rotundatis, apiculatis; labello cuneato simplici antice subito dilatato profunde bilobo, apiculo interposito, niveo, carinis 8 aures in disco (longissimis intermediis), antice in dentes elevatulos exeuntibus; gynostemio brevissimo quadricorni, cornubus inferioribus brevibus, superioribus (staminodiis?), linearibus porrectis multo longioribus pilis hyalinis hirsutis. Pseudobulbi ovati nucem avellanam maximam fere æquantes. Folium oblongo-lanceolatum, acutum. Racemus validus, pauciflorus (an semper?) grandiflorus. *F. Kränzlin.*

† *Cypripedium Eyermanianum*, n. hyb.—Leaf linear-oblong, 6 inches long by 1½ inch wide, light green with darker reticulated veins. Dorsal sepal very broadly ovate, 1½ inch long by 2¼ inches broad, sides reflexed near base, a little inflexed near apex, light green near base, white above, with dark purple mid-nerve and about ten similar lines on either side extending two-thirds to apex, a little suffused on the sides. Petals ligulate oblong, green near base, with numerous small dusky brown spots, purple-brown above, with darker mid-vein, and about five nerves, on either side, a little paler on lower half, margin ciliate, a little undulate, and without warts. Lip broad and very obtuse, dark lurid purple in front, paler behind, with a few darker spots on infolded sides lobes. Staminode with short blunt teeth, approaching C. barbatum, nearly flat, and of a uniform bright puce-purple shade Derived from C. barbatum grandiflorum and C. Spicerianum, the latter, I believe, the pollen parent. *R.A.R.*

staminode is nearly like C. barbatum in shape, but in colour it quite reproduces C. Spicerianum, except that the white margin of that species is wanting. This distinct and pretty hybrid was raised in the establishment of Messrs. F. Sander & Co., of St. Albans, and received an Award of Merit from the Royal Horticultural Society, on November 11 last. It is dedicated to Mr. J. Eyerman, of Easton, Mass, U.S.A., a well-known lover of Orchids. A drawing has been made for a forthcoming issue of *Reichenbachia*. *R. A. Rolfe.*

RENOVATING ORCHARDS.*

(*Continued from p.* 722.)

One of the most remarkable instances of improving fruit trees, not on grass, that has come under my notice, was in the garden of Mr. Edmund Tonks, a gentleman of great scientific attainments and practical skill in Warwickshire. He planted an extensive collection some years ago, but the trees appeared to become old prematurely, growth practically ceased, the stems were as if devoured by canker, and the fruit was worthless. The soil was heavy, and, as was subsequently found out, poor, or in other words, contained little of the manurial essentials for maintaining healthy growth. Having ascertained what the soil lacked, and what Apples needed, the necessary ingredients were obtained and applied. These were superphosphate of lime, twelve parts (or pounds); nitrate of potash (saltpetre), ten; chloride of sodium (common salt), four; sulphate of magnesia, two; sulphate of iron, one; and sulphate of lime (gypsum), eight. These were well mixed in the proportions named, and applied to the soil yearly at the rate of a quarter of a pound to the square yard. Improvement was soon manifest, and when I saw the trees, at least 10,000 canker-wounds were healed, and not one could be found in which the disease was active, yet nothing had been applied to the branches. In that case canker was the result of starvation, and with proper food the trees were restored to health and usefulness. The above may be said to be a complete manure for Apples, but as the majority of soils are not lacking in all the essentials, what may be called simpler applications usually do great good. The liquid manures above alluded to contain most of what is required, and in their absence a mixture of six parts (or pounds) of superphosphate of lime, three of muriate of potash, and two of sulphate of ammonia, applied at the above rate will generally improve enfeebled trees, as also will guano guaranteed to contain not less than 8 per cent. of ammonia, and 20 per cent. of phosphates. All chemical manures used as top-dressings should be applied not later than February; sprinkled on the land in late spring or summer they do little good, as they are apt to remain undissolved for a very long time, and therefore cannot be taken up by the roots. If used in solution they act quickly. For enfeebled fruit trees 1 lb. of guano may be dissolved in 10 gallons of water, or the same quantity of the "simple mixture" above mentioned, either of which, applied in winter, will be bound to do good if it reach the roots. It may be mentioned that the strength named is twice what suffices for general garden crops other than trees. A peck of poultry or pigeon manure dissolved in 20 gallons of water is also excellent for debilitated trees. A farmer of my acquaintance gives a watercartful of stable drainage to a favourite Apple tree every year when it is swelling its blossom buds, and it seldom fails to reward him with £5 or £6 worth of fruit, "leaving a profit," he said, "greater than he could obtain from an acre of Wheat." If he applied the liquid earlier it would do just as much good, possibly more, but given much later would be much less effectual. The tree is on grass, and the variety Gascoigne's Scarlet Seedling.

Something must be said on pruning, in the renovation of enfeebled orchard trees. The interior of many trees is just a thicket of useless growths, fruit being produced on what is termed the "outside" of the trees only, where the leaves are exposed to the light and air; indeed, it cannot be produced under any other conditions. The aim, then, of the improver should be to invigorate those outside growths, which, perhaps, do not extend more than an inch or two a year. They must not be shortened nor materially thinned out, but the pruning must be confined to the removal of the useless shoots and small branches that start from the larger or "arms" of the tree, and push upwards in their endeavour to reach the light. They bear nothing but leaves, and it is not in the power of man to make them do anything else; but what they do is this, they divert the sap from the fruit-bearing parts, and to that extent deprive them of the support they need for making them stronger and more productive. The crowd of growths in the centres of old trees where no sun and little light can reach, may be likened to robbers, and should be cleared out. Shortening them will not suffice, but may make matters worse; they should be cut or sawn off close to the large branches from which they spring, and the wounds pared smooth with a sharp instrument. The sap will then flow direct to the fruitful parts, and these will be strengthened accordingly. If the soil is enriched, the growths will be still further strengthened, and may be trusted to find themselves room on the outsides of trees; at least, when these stand, as they should, distinctly apart from each other.

It will be seen that the method of renovation advocated resolves itself into this—giving the famine-stricken trees the food they so urgently need, and clearing the way for its distribution through the stems to the spur and fruit-bearing parts that are exposed to the direct action of light and air; but in removing the obstructive growths from the interior of trees, what may be termed a small matter of very great importance, must not be overlooked, or the trees will soon be choked worse than ever. In the spring following the pruning, which cannot be done too soon, clusters of young shoots may push from the main stems, from which the useless parts have been cut. Obviously, if these are allowed to extend, they first divert the sap from where it is required for fruit production, and subsequently soon fill up the trees with another horde of robbers. Nothing is more easy than to prevent this, and nothing more certain than that it has not been prevented in the case of thousands of trees, and the pruning has consequently been proclaimed as having done no good. Of course it has not under the circumstances, but that is the direct result of either thoughtlessness or negligence. What ought to be done is this—when the young spring growths referred to are an inch or two long, an active man should rub every one of them out by the socket, going over the tree two or three times if needed. Cutting them off is of no use. The work is quickly done, and is absolutely necessary if the pruning is to be effectual.

Cleansing old and neglected fruit trees is a necessary operation in their regeneration. Not the stems alone, but the branchlets and fruiting spurs may be thickly covered with moss and lichens. The incrustations should be scraped from accessible parts, and then lime-washed, and where the scraping cannot be done, as in the most important parts—among and around the fruiting spurs—these should be thickly dusted with freshly slaked lime on a still day when every tree is dripping with wet, such as after a mist or fog. It is easily and quickly done. Send a man with a scuttle of lime on his arm up a ladder that reaches well above the tree. Let him dash the lime about in all directions, under and over the branches, sparing it not, yet letting every handful "tell," and if he does his work well, the trees, when dry, will be as white as if covered with hoar-frost, and the moss will vanish, leaving the wood perfectly clean. Nor should the lime that falls on the ground be considered as wasted. It will do great good. There can be no really healthy trees without lime in the soil, and there is seldom any in that of old orchards, except on the limestone formation, and often not enough there in the upper layer of soil, for it has either been washed down by the rains or extracted by the trees during their long occupation of the ground. The application of lime in the manner advised is unquestionably highly beneficial to moss-laden fruit trees.

Insects, when present, must be extirpated. One of the worst of these is the woody aphis or American blight, which often crowds into every crevice, punctures the bark, and does incalculable injury. It may be destroyed with a solution made by dissolving 2 or 3 oz. of soft-soap and a walnut-sized lump of soda in a gallon of boiling water, and while hot stirring in violently half a gill of petroleum, such as in burned in lamps. It should be brushed well into insect-filled crevices, stirring the mixture as the work proceeds, and some may be syringed with advantage all over the trees. Fruit trees syringed every winter with this mixture are usually kept free from moss and insects on the stems, though some may attack the leaves in summer. Pure petroleum has been advised for fruit trees, and though in some cases it may not have done harm, in others it has proved fatal to the trees. It is wasteful and foolish to resort to dangerously strong remedies, when weaker and quite safe applications are effectual.

The subject of renovating fruit trees is a great one, and unquestionably important. It cannot be usefully treated in a few words; therefore, at the risk of being tedious, I have felt it undesirable to skim over the surface, and have endeavoured to describe in plain language methods which have proved successful in accomplishing the object in view. But while many old orchards may be, and should be, greatly improved, I am convinced that the fruit of the future that will command attention in our markets will be the produce of vigorous young trees not planted in or on the sites of old plantations either of fruit or of forest trees, but in fertile soil (not in damp valleys), such as is capable of growing first-class crops of Wheat, Clover, and Potatos. Let all who have old orchards make the best of them by all means, but also let all who can do so plant young trees.

* A Paper by Mr. John Wright, read on behalf of the British Fruit Growers' Association, at a meeting of the Falmouth Horticultural Society, November 12, 1890.

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM DEBOISIANUM×.

This is a hybrid raised by MM. Edm. Vervaet et Cie., of Mont St. Amand. It was obtained by crossing C. venustum with C. Boxalli atratum. The upper sepal is yellowish-green, clouded with white, and much spotted with deep black, and with a wide border of creamy-white. The lower sepal is pale straw-coloured, with regular stripes of dark green. The petals are large, wavy at the tip; clear yellow below, then mahogany-red, with a tinge of copper colour; olive-yellow, veined with green above, and rather strongly marked with large black spots in the centre, and towards the base. The lip is large, long, reddish-chestnut towards the mouth, the edge being olive-green, veined with emerald-green, and there is a border of golden-yellow round the orifice. The staminode is clear pink in the centre, marked with dark green hieroglyphical markings, and with a cream-coloured border. Foliage fine, broad, short, and sturdy, recalling that of C. Crossianum, much spotted with brownish-red at the base. C. Deboisianum× has obtained a Certificate of Merit, unanimously awarded at the meeting of the Société Royale d'Horticulture de Gand, and from the Chambre Syndicale des Horticulteurs Belges, on December 3, 1890. *Ch. de B.*

Catasetum Naso.

Singular as the genus Catasetum is known to be, there are few to whom the first sight of this species would not be a surprise. It appears to have been in cultivation over forty years ago, but, like many others of this and allied genera, has long been neglected. It is included in the considerable col-

lection of Catasetums at Kew, and flowered in the early part of this year. The handsome glaucous-green leaves are lanceolate, plaited, and strongly-ribbed, and the erect arching spike, which bore nine extremely handsome flowers, these being 3 inches in depth. The incurved sepals and petals are of a pale yellowish-green, with a pinkish tinge inside, where they are also numerously spotted with dull reddish-purple. The lip is very remarkable; it is concave, fringed at the sides, and fleshy. In the *Botanical Register* for 1843, Lindley says:—"This organ is most singular and difficu't to describe. Seen in front, it is almost wholly of a rich black-purple, and looks as if it were a solid hemisphere pierced in the middle with a large, heart-shaped hole; but this appearance is owing to a thick, fleshy rim, which rises from within the true edge of the lip, and turning inwards, at last touches the front of the column, and produces the appearance of a junction." In the Kew plant the lip is at first dull crimson, afterwards chocolate-brown. Two slender horns proceed downwards from the sides of the column, which curl round the base of the cavity in the lip; when these are touched, the pollen-masses are immediately ejected; the flowers soon after commence to wither.

ABIES CONCOLOR.

(See Figs. 147—151.)

We take the opportunity afforded us by Mr. Anthony Waterer of figuring cones of A. concolor, and of its variety violacea, which were produced in his nursery at Knap Hill. The true concolor is one of the handsomest of the Silver Firs, especially in the young state, and it is one of the most variable; hence it is not remarkable that much diversity of opinion has existed in regard to it, but matters are gradually settling down, and we are getting accustomed to call the plants from Colorado and New Mexico under the name concolor, while the long-leaved form, from California, may be called Abies Lowiana, of which A. Parsonsi is a synonym. The name lasiocarpa in this connection should be entirely abandoned. Having on former occasions gone pretty fully into the details connected with the botanical history of these trees, and given illustrations of them, we need not repeat them now, but we may strongly advise admirers of these trees not to overlook them. The variety violacea, in particular, is very beautiful, being of a glaucous blue colour, while the cones are of a rich plum colour. It forms a worthy associate with the lovely Picea pungens var. argentea, or Colorado Spruce (sometimes called Parryana 'glauca), the glaucous form of the Atlas Cedar, Retinospora squarrosa (so-called), the glaucous varieties of the Douglas Fir, and of Abies nobilis. These contrast well with the golden Chinese Juniper, the golden Larch (deciduous), the golden Yew, the golden Lawson Cypress, and some of the Retinosporas. Rich bronze and brown tints are secured by the admixture of Cryptomeria elegans and some Retinosporas.

Figures of concolor, and of the species allied to it, have been given as under:—

Abies Lowiana, branch with chestnut-brown cones, 1886, Dec. 11, p. 753. A specimen in the grounds of the late Sir John Walrond was 60 feet high in 1886. May 22, 1880, p. 648.

Abies concolor, twigs of. May 21, 1881, p. 661.

Abies (Picea) concolor violacea, *Roezl.*, 1879. Nov. 29, p. 684.

Abies grandis, 1881. Feb. 5, p. 179. Cones bronzy-green. See also 1885, Oct. 31, p. 561.

Carter's Provident Sick Fund.—The fifth annual meeting of this Society has been recently held at the warehouses of Messrs. James Carter & Co., High Holborn, the chair being taken by Mr. Sharman. The statement of affairs showed that although the past year (owing to the epidemic of influenza during last winter) has been one of the worst the Society has experienced, it has been able to close its books with a substantial balance in hand.

ORNITHOLOGY IN RELATION TO AGRICULTURE AND HORTICULTURE.

(*Continued from p.* 718.)

Wood-pigeons.

The wood-pigeon (Columba palumbus), also known as the ring-dove, from the white feathers which almost encircle the neck, is plentifully distributed in the British Isles, and is one of our commonest resident birds. In the counties bordering on Wales it is called the "quist" or "quīst;" in the midlands the "quest," and in the north of England the "cushat;" while in Scotland it is often termed the "cushie-doo." During the present century its numbers have multiplied to an enormous extent, the causes leading to this vast increase being:—(1) the destruction of birds of the falcon tribe, which are the natural enemies of the wood-pigeon; (2) the great amount of land now planted with Turnips and other green crops, serving to supply it with food in the winter months; and (3) the increase of Fir plantations and coverts, which afford it protection both in the nesting season and at other times. Writing

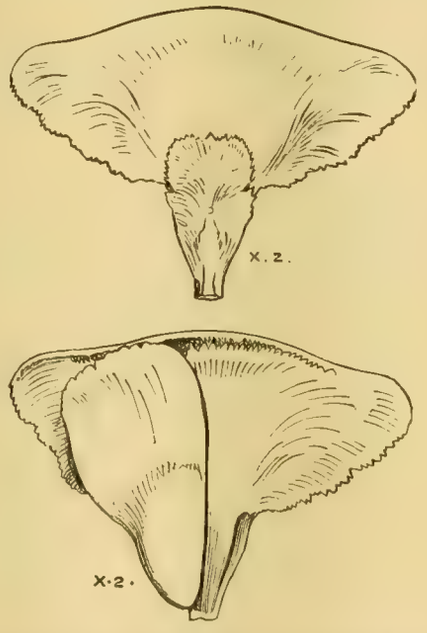


Fig. 147.—Abies concolor: scales and seed of native specimen.

in the *Zoologist* for 1844, the Rev. J. C. Atkinson says:—"These birds are greatly on the increase in various parts of the kingdom, owing principally, I think, to the large extent of recent Fir plantations. In Norfolk (and here the plantations are chiefly of Fir), I have seen them in flocks of many hundreds, where some years ago they were comparatively rare." The veteran ornithologist, Mr. John Hancock,* of Newcastle-on-Tyne, in *The Birds of Northumberland and Durham*, 1874, writes:—"This species has, in the last ten or twelve years, greatly increased in numbers." Mr. E. Cambridge Phillips, in *The Birds of Breconshire*, 1882, observes:—"It is certainly on the increase here during the last few years, both as regards residents and visitors." Mr. O. V. Aplin, in *The Birds of Oxfordshire*, mentions the wood-pigeon as one of the birds which have been observed to be more plentiful of late years. The same is the case in Herefordshire and neighbouring counties.

In Scotland it was rare at the beginning of this century, but, as will be shown in this article, it is now deemed a nuisance in North Britain; and it even penetrates as far as the Outer Hebrides, but, owing to the scarcity of woodland, it is, of course, not common in those islands. The consensus of opinion of the most eminent naturalists tends to prove that its numbers are steadily increasing.

Even in the London parks it is now quite a common bird. In the *Zoologist* for 1888, Mr. W. H. Tuck comments on its abundance in Hyde Park. He remembers the first pair coming in 1883. Recently he counted forty-seven, old and young, feeding on the lawn north of Rotten Row. In August, 1890, he writes:—"Their numbers have so increased that I have given up counting them.' If such an essentially wild bird is multiplying in London, what must be the state of things in the provinces, where there are hundreds of acres of plantations for it to nest in?

Nearly all our birds are migratory to some extent, and the ring-dove is no exception. There is annually a migratorial movement about October or November; and, in some years, vast flocks of foreign birds come to our shores. It is probable that our home-bred birds move southwards as winter approaches, and their places are occupied by the stranger arrivals, which can often be recognised by their cleaner and more brightly-coloured plumage. The writer was a witness of an unusually large migration of "foreigners," in the autumn of 1884, on the east coast of Yorkshire. During the latter part of October and the first week of November, for a period of several days, both ring-doves and stock-doves came from over the sea in flocks varying from twenty to fifty or sixty in number. The first flights generally appeared about 8 A.M., and continued, at intervals of a few minutes, up to 3 P.M. A great many were shot by local gunners, who were posted along the shore; one sportsman had upwards of fifty in three days. According to the natural history papers, it appeared that this migration extended along the east coast from Berwick to Norfolk. These migrants are generally considered as coming from "foreign" parts; and, doubtless, when severe and stormy weather prevails in North Europe, very large bodies do cross the North Sea in the latter part of autumn. But one of our best informed north-country ornithologists thinks that it is probable the migrations of our visitors are not so extensive as many people imagine; and that they have only come from the Scotch Highlands, the Lothians, and other parts, moving about in search of food supplies. We would suggest, however, that there are generally two migrations in hard winters—one, in late autumn, from over the sea; and, if the weather should prove unusually severe about December or January, another from Scotland southwards. But no fixed rule can be laid down as to the migrations of this bird. One may set up a theory based upon several years' observation, and next year it is utterly demolished. Then, when our visitors have arrived, their movements are restless and uncertain. They are generally most numerous in the north in severe weather; the longer the storm is prolonged, the more numerous they become, but every change affects them. For instance, though a severe frost and snow-storm may bring hundreds where few were seen previously, yet, if there should be none during the hard weather, they will appear in great quantities when the thaw comes.

The food of the wood-pigeon consists chiefly of grain, Peas, Beans, Beechmast, acorns, seedling Potatos, Turnip-tops, bulbs and seeds (the latter picked up from the freshly-sown drills), young Clover, seeds of the wild Mustard, Charlock, Dock and Ragweed, Gooseberries, and various other berries, seeds and plants. In the *Field* of the 10th December, 1887, Oak-spangles are reported as having been found in the crop of a ring-dove shot in Wilts, and the editor remarks that this is, in his opinion, an unusual article of food for the bird in question. Numerous stories are told of the extraordinary capacity of its crop. The writer took a cupful of Turnip-tops from one in December, 1884. Sixty-one acorns were found in one, which is now in Leicester Museum. A correspondent of the *Field* discovered 76 acorns and a quantity of Swede-tops in

* Since this was written, we regret to announce the death of Mr. Hancock, at the age of 82.

one in Shropshire, on 18th December, 1883; another is mentioned (19th January, 1884), which contained 73 Hazel nuts; and, on 8th October, 1887, an instance is recorded of one which contained 838 grains of corn, to which the editor remarks that the number of grains is not unprecedented. Mr. Abel Chapman mentions, in *Bird-life on the Borders*, that 37 beans, weighing nearly 1½ oz., besides some grain, were found in the crop of a stock-dove.

It will be seen from the "bill of fare" given above, the heavy toll is levied upon the agriculturists. Some sentimental cabinet naturalists defend the cushat's grain-eating propensities, on the score that it compensates for any damage done in this way by destroying the seeds of noxious weeds. This may be so to a certain extent, and possibly, if the balance of Nature was not interfered with by man's agency, the food of the pigeon would still mainly be confined to wild seeds and plants; and, in districts where it is not particularly numerous, it probably does not harm the farmer's crops, but even benefits them: as, for instance, when unkindly weather in spring has arrested the growth of some of the white corn crops, allowing the hardy wild Mustard to overtop the tender blade, the pigeon destroys the weed by stripping it of every leaf, and often the lowly Chickweed furnishes it with an abundant repast. But, like the rook and sparrow (and from the causes mentioned above) it has become vastly more abundant than Nature ever intended it to be, and therefore there is not sufficient wild food to support the hordes that assemble after the breeding season, and the agriculturist suffers to such an extent that its frightful ravages steel the mind to the destruction of this beautiful ornament of our woods. In the north-east of Yorkshire the farmers declare that it is most destructive in the corn-fields, both at seed-time and harvest; and they say that one bird will eat its own weight in grain in a day. The Rev. J. C. Atkinson, in 1844, says:—"Where they are numerous they inflict considerable loss upon the farmer, visiting his Pea-fields and seed Tares with great assiduity; and each bird will eat not less than 2 oz. of Peas daily." Similar opinions are expressed as to its destructive habits in Herefordshire and the counties bordering on Wales, as the writer is informed by a naturalist residing in that neighbourhood.

Mr. J. Hancock, in the work before referred to, observes that the ring-dove is much complained of in Northumberland; he also quotes from a letter from Mr. J. C. Langlands, of Old Berwick, as follows:—"Another evil arising from the destruction of the birds of prey, and especially of the magpies, is that in this country we are preyed upon by immense flocks of cushats." We understand that an association has been formed in Northumberland which offers rewards for the destruction of wood-pigeons, with a view to lessening their numbers and checking the injuries inflicted by these birds upon the agriculturist.

In the *Field* for September 13, 1890, Sir R. Payne Gallwey, describes an ingeniously-contrived cage for taking wood-pigeons alive, by which as many as 1000 have been captured in a season. He further says:—"These birds are increasing rapidly, and what is more, do considerable damage; they are becoming pests in some parts, and boys have to be employed to drive them from the new-sown fields and young crops."

In Scotland, where it was extremely rare at the end of last century, it now swarms to a most injurious extent, and its ravages amongst the crops are of a most serious nature. Congregating in countless flocks, they forage in the stubbles until the grain is exhausted, then they attack the leaves of the young winter Wheat, Swede Turnips, and red Clover; the latter, when not killed, often suffering most from the ravages inflicted upon it. A small party will occasionally visit the stackyards for Beans and Peas, until late in spring. When the Peas and Tares appear above ground, they are attacked with fatal severity; and as soon as the Swede has put forth its second pair of leaves, and escaped the ravages of the Turnip-flea beetle, it is stripped of everything but the bare stalk by this greedy bird. When the fields assume the golden tints of autumn, they once more assemble in vast flocks, and attack the crops of Wheat, Oats, and Barley, the two former being preferred to the latter. Before the crops are reaped, the birds seek out some portion which has been laid or bent, always, where practicable, keeping near a hedge, trees, or plantation. They will return day after day, even although continually driven off, when they become very shy and wary, rising from the corn on hearing the least noise, and alighting on the hedge, or a neighbouring tree, or flying off to some distance. When the corn stalks are not sufficiently bent to allow them ready access to the ear, they alight amongst them in a peculiar way, so as to obtain the end in view. They eat Wheat, which has been steeped in a strong solution of brine previously to sowing, with much relish; indeed, they give it the preference.

The following notes by the late Thomas Edward, the Banffshire naturalist, written in 1860, are of considerable interest:—"The cushie-doo bids fair to become one of the greatest pests the farmer will have to encounter with respect to his crops. These birds have increased amazingly within the last few years, and the damage they do is incalculable. This increase is caused by the almost total destruction of the hawk tribe, which aided greatly to thin their numbers." In August, 1879, at the Central Banffshire Farmers' Club, Viscount Reidhaven, after mentioning that a suggestion had been made to form an association for the destruction of wood-pigeons, read some statistics showing what had been done on his father's estate between 1876 and 1879. In these four years, 15,194 eggs, 1603 young birds, and 3733 old birds, were destroyed, making a total of 20,529! The amount of money expended as head-tax was £117 13*s.* 3*d.*

With reference to the S. E. of Scotland, Mr. G. Pow, of Dunbar, writes:—"The United East Lothian Agricultural Society, in the course of about seven years, paid head-tax on wood-pigeons at the rate of a penny to twopence per head, and one penny for each pair of eggs; in the time given, 130,440 pigeons

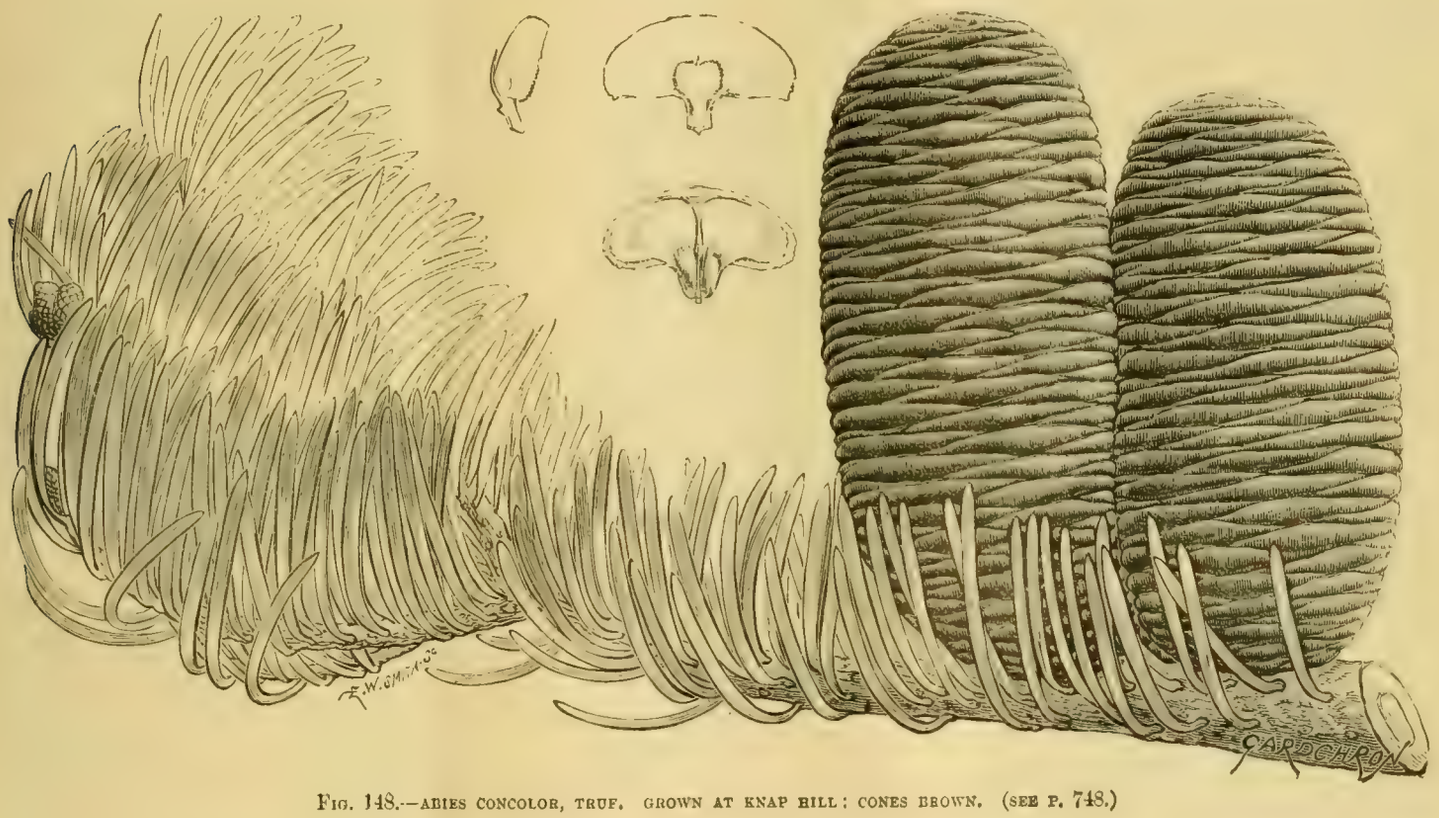


Fig. 148.—Abies concolor, Truf. grown at Knap Hill: cones brown. (see p. 748.)

were paid for at these prices. That was twenty years ago, and that expenditure in no way diminished the numbers in this county (according to Gray, pp. 214, 215). Since 1870, however, they have gradually decreased, although for the last few years, if I mistake not, no price has been set upon their destruction. There is certainly no such price at present. As to the cause of their decrease. . . . . My opinion is, that it is due to sheer slaughter of the species by gamekeepers, farmers, fowlers, and (in the past) professional pigeon-shooters who were wont to reap a rich harvest by shooting them. At one place near the centre of the county, they were caught wholesale by means of a large trap. They literally 'find no rest for the sole of their foot' in these parts, death awaits them on all sides; in the woods, at the hands of the gamekeepers; in the fields, by farmers and persons employed by them; and on the sea-shore, by fowlers, who, waiting for flight-time for wild-duck, find it a profitable pastime to augment their bags with wood-pigeons."

But, although the cushat is such a destructive creature, it is a real sporting bird, and, in return for the toll levied upon the farmer, the latter may take his revenge upon its body, which is excellent eating. Wood-pigeons are not included in the schedule of the "Wild Birds Preservation Act," and may be killed at any time of the year by owners or tenants of land, or persons authorized by them. As a rule, but few can be killed in the daytime when they are feeding in the fields; the best plan is to wait for them towards dusk, when they go to roost in the plantations. There, during the last hours of daylight, is the time and place, in a favourable season, to kill them wholesale. But extreme caution must be observed, for the cushat is as wary as any wild-fowl, which it resembles in habits more than any other species of bird. The gun should be held vertically, in a position to fire, as the slightest movement is detected by the wary birds. The best time to shoot is just when they are lowering to alight; or they may be allowed to settle on the branches, and often a favourable opportunity will arise for a family shot. The position to select for shooting them at flight-time is on the leeward side of a wood, about a gunshot from the outside, and, if possible, opposite the highest trees which may happen to grow there, and towards which they are sure to direct their flight. They always fly head to wind, so the best sport is to be obtained in a strong breeze, as it deadens any sound which an incautious gunner may make, and the birds fly lower, and are more unsuspicious than in a light wind. In suitable situations a conical hut of branches may be built at the foot of a tree, and used as a shelter to shoot from. It should be allowed to remain for a few days before being occupied, so as to allow the birds to become familiarised with its presence. When winter's snowy mantle covers the earth, a good plan is to don a white nightgown, and tie a white handkerchief over the cap. This ruse often succeeds when all other devices for concealment would fail. A few decoys are very useful; these may be either stuffed birds, or painted wooden imitations, and should be fixed on the branches of the trees frequented by the birds. Sometimes freshly-killed birds, supported by a forked stick under the neck, may be used, if the shooter is waiting for the pigeons coming to feed on a stubble, Turnip, or Clover field.

The ring-dove usually begins to nest in March, or early in April; a second brood is reared in June, and sometimes a third in autumn; eggs, and young in the nest, have been found as late as October. The nest, which is flat, is loosely made of twigs, and built in trees of all sorts, but chiefly Firs; sometimes in bushes and hedges, and rarely on old walls or cliffs. The eggs are two in number, very exceptionally one or three, pure white, smooth and glossy, elongated and oval in shape; incubation lasts from sixteen to eighteen days. The young are blind and helpless until they are about nine days old; they remain in the nest until able to fly, and are fed with a curd-like substance emitted from the crops of the parents.



Fig. 149.—Abies Lowiana: branch and leaf section.

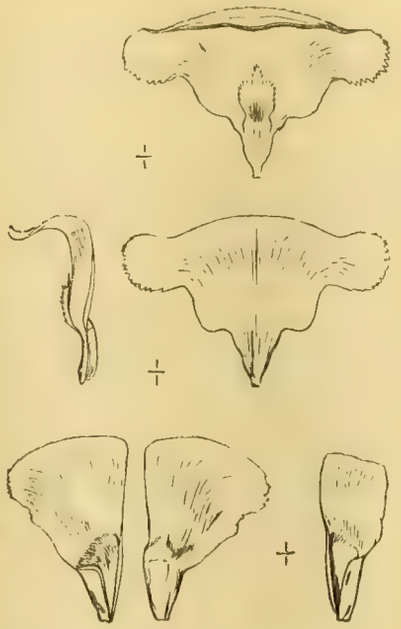


Fig. 150.—Abies Lowiana: scales and seeds of English-grown specimen.

A detailed description of the plumage of such a common bird is out of place here, but it may be mentioned that white and parti-coloured varieties are occasionally met with. Its length is 17 inches, wing, 10 inches; average weight, 17·26 oz.

The stock-dove (C. œnas), a near relative of the ring-dove, has latterly increased to such an extent that it, also, in some places is becoming a pest to the agriculturist, and may be bracketed together with its larger relative. Fifteen years ago it was considered a great rarity in the north of England, but now it is quite numerous. It may be distinguished from the ring-dove by the absence of the white feathers on the sides of the neck, and by its smaller size. Its length is 13·5 inches, wing 8·8 inches, weight 13 ounces.
T. H. Nelson, Member British Ornithologists' Union.

The Orchid Houses.

The East India-house. — Preparations should now be made for repotting many of the inmates, by getting together clean, fresh sphagnum moss, and crocks, both large and small, and fibry peat. By so doing, time will not be wasted when once the work is begun. The plants which will first claim attention are the various varieties and species of Aërides. It is a good practice to very carefully clean the plants before repotting them. I do not like to employ charcoal about the roots of Orchids, and would strongly advise the use of potsherds instead, for this reason, that nearly every species does best when the material about them becomes dry at short intervals of time, and receive considerable quantity of water. Charcoal is so retentive of moisture, that the potting materials with which it is mixed remain constantly damp, to the injury of the plants. In repotting Aërides put but few, if any of the aërial roots into the potting materials, they being almost sure to die soon afterwards; but if they are very long they will be in a much better position if carefully drawn down and tied or pegged with wire pegs on to the surface of the potting materials, into which they may in time force themselves. The present severe frosts will call for lower temperatures and a drier atmosphere in the house—see previous Calendars—and neglect of this rule will result in weakly and drawn growth, and perhaps the loss of many plants in the course of the year. The temperature should be kept as advised in my last Calendar.

The Intermediate-house. — Odontoglossum grande, O. Schlieperianum, and O. Insleayi leopardinum, should now receive but little water. One good watering, and then a long interval without any, is the proper course to pursue with these species. The plants are plump and strong now—it is unlikely that they will require watering before the beginning of the month of February. The free-flowering Masdevallia Tovarense is a pretty Orchid for the present season, but it should not be allowed to perfect too many blooms, or exhaustion, with its evil consequence, will follow. Some growers leave the old spikes to flower a second time—that is, in the following year, and this they will do freely, sending out five, and in some cases six flowers from the old spike while the new spike will have only three, and if all are allowed to remain the vigour of the plants will be impaired for a long time. Vanda suavis, tricolor, and their varieties, should now receive but very little water, or the plants will "spot," and spotting is more easily observed on these plants than in many others. The first leaves to spot are the youngest, and the spots at first being very small, should be carefully looked for. As a remedy for spot, take away every particle of sphagnum-moss and crocks from about the roots, replacing the latter with a fresh supply of dry and clean ones; the plant should then be stood in a house 5° warmer, but placing no sphagnum-moss about it. A temperature of 5° at night will be ample, with a rise of a few degrees during the day. *A. G. Catt, Parkfield Gardens, Hallow.*

Fruits Under Glass.

Renovation of Late Vinery Borders.—Where late Vines are in an unsatisfactory state, lifting the roots, replanting in a better compost as soon as the Grapes are cut, is the first thing that occurs to one; but such a hasty proceeding would be a mistake that

would be apparent in this way. The Vines relieved of their crop—say, at the end of the year—require rest, whilst if we renovate an inside or outside border, and relay the roots in fresh compost, the roots lie dormant for two or three months, and during that period, no matter how carefully the work was performed, many of the small roots will perish, and injury be done to the larger ones; whereas if we prune, clean, and leave all quiet till the end of March, when the buds show signs of starting naturally, that would be the best time to commence operations, and when every particle of an inside border may be taken away; as then most of the sound roots are preserved and relaid at once in fresh compost, having first put the drainage in perfect condition. In such cases it is advisable to give the Vines a little more time in the early stages, and to take a lighter crop than usual. Provided the compost, consisting of fresh turf (three months cut), a few crushed bones, old lime rubble, and wood-ashes, can be induced to ferment slightly, fresh rootlets will start at once, and the Vines will recover their health before the end of the season. The above method of lifting and relaying the roots before the stored-up sap is exhausted, applies to all kinds of deciduous fruit trees; hence the oft-repeated advice to lift or transplant before the leaves fall, otherwise to defer the work until just before the trees recommence to grow. All materials for remaking the borders should be got in readiness in the course of January and stored in a dry place, or covered up securely outside.

Pines.—Make preparations for starting a few of the most promising Queens, to succeed the winter fruiters. The plants should have completed their growth in the early autumn months, and been standing in bottom heat of 70° to 75°. If the bed has been properly prepared, a sudden increase of 10° or 15° will soon cause the roots to move, when water must be afforded the plants at a temperature slightly higher than that of the bed, and in sufficient quantity to moisten the whole ball of soil. As the new bed will be full of moisture, future watering must be done with great care. Any plants loose at the collar should have a little of the soil removed with the hand, and a few of the leaves, and be packed tightly round with warmed turf. Let the night temperature be kept at 70°, and 80° by day, with an increase of 5° during sunshine. Endeavour to dry up and change the air daily by leaving a small amount of ventilation. Those in charge of the heating apparatus should strive to increase the warmth in the pipes in the same ratio as the declining thermometer indicates outside.

Syringe the walls, paths, and other surfaces once or twice daily according to the weather, but do not let moisture trickle into the hearts of the plants; any lodgment there at this season causing loss of the fruits now slowly pushing themselves upwards.

The principal stock of Queens should be kept in their resting quarters for some time longer, as every day up to the beginning of February will add to the weight and quality of the fruit. Queens will always stand more dry heat than Cayennes, Rothschilds, and Carringtons.

Succession Pines.—If plunged in a gentle bottom heat these plants will require but little attention, except those growing near to the hot-water pipes, which should be frequently examined to ascertain if they require water—neglect of this resulting in premature fruiting. *W. Crump, Madresfield Court, Malvern.*

The Hardy Fruit Garden.

Figs.—There is no hard-and-fast rule to be laid down in the matter of protecting Fig trees—the non-protectionist leaves his trees alone, beyond strewing a little litter over their roots, to keep out frost; others, less fortunate as to aspect, elevation, or climate, protect with any kind of material most convenient, as bracken, branches of Spruce Fir, thatch, &c. Those who have overlooked this matter will have cause to regret it, as the young bearing wood with embryo fruit will be reduced in quantity. A moderate amount of shelter is the best, for few people would endeavour to exclude slight frost and air from their Fig trees. In Fig-growing districts like Worthing, the growers agree in saying that they get better crops without than with protection, and they wisely forego the trouble. Very important points in the management of outdoor Fig trees, especially when they are grown in close proximity to vegetable quarters, is the annual root-pruning needed, to keep them close at home, and a well-drained soil. If these operations have been neglected, it is not too late to take out trenches round the trees, and refill them with loam and old lime rubble, ramming it quite firmly. Early autumn is the better time to do this operation, as then the flow of sap is checked, and the ripening of the young wood hastened.

Propagating Small Fruits. — There are many small gardens in which Apple, Pear, and Plum, and other large-growing fruit trees, cannot be accommodated with profit or advantage; but there are few in which the Gooseberry, Currant, Raspberry, and Strawberry cannot be well grown. Only the best varieties of each should be increased in numbers, the inferior sorts being cleared out as soon as they can be spared. Shoots of the first two which were laid in, should now be made into cuttings, and in doing this all the buds, except four or five at the top, cut out. Red and white Currants

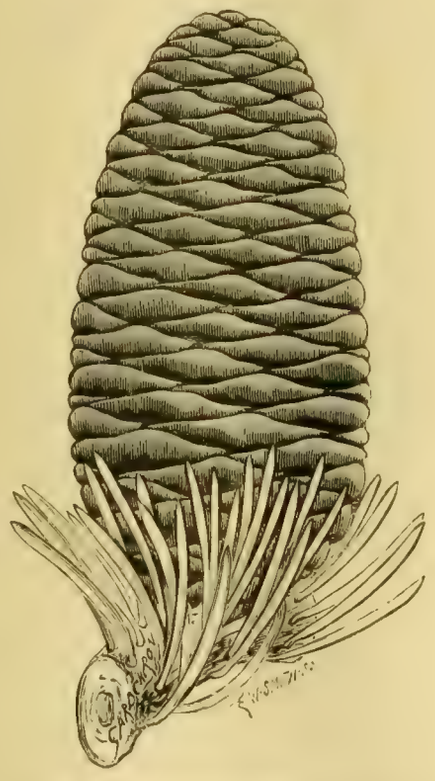


Fig. 151. Abies violacea. Grown at Knap Hill; cones purple.

are propagated easily from cuttings, but black Currants are best increased by suckers taken from around the old bushes; those having roots may be planted in lines on a border, and not treated as cuttings. The chief point in taking cuttings is to get them laid in the soil without loss of time, and thus prevent shrivelling taking place, planting out being done when the soil and weather are favourable. The cutting rows should be 15 inches apart, and the cuttings stand 6 inches apart in the row. The soil should be made firm, and if a little sand be incorporated with it, rooting will be quicker. Place the cuttings about 3 inches deep.

The Fruit Room.—Remove all decayed fruit, and sort the specky ones from the sound. With me many of the varieties are ripening earlier than usual, but this may be due to the fine weather experienced in the autumn. Where the fruit room is built nearly underground, dessert Pears should be brought into a warm room or cupboard a week or a fortnight before they are required for dessert. Medlars should be examined at intervals, taking out those that are getting too far gone for dessert; the small and partially bletted fruit make an excellent jam. *A. Evans, Lythe Hill, Haslemere.*

The Kitchen Garden.

It being the aim of most gardeners to get green Peas as early as possible, and while many still adhere to the old system of sowing in the open during the latter part of November, it is advisable, even in the more favourable parts of the country, to sow a quantity in pots to plant out in the open in March. For this purpose 60's are the best size of pot, which should be three parts filled with a moderately light soil, after placing a few crocks or half-decayed manure at the bottom. The seed should be sown rather thickly, and covered with fine soil, and the pots stood in a mild heat until the plants appear, when they should be transferred to a cold pit free from frost, to which air should be given with care at first, but afterwards every day when it does not freeze. As to varieties, Veitch's Extra Early is a fine Pea for the early crop, then William I. to follow. A good sowing should also be made in the open ground of the same varieties by the end of January; those sown in November will quickly push through the soil so soon as the frost is out of the ground, when a little fine soil should be scattered amongst them and over the top, should frost again prove severe. Peas are successfully grown in pots, but they will not stand much forcing before flowering. The plants should at all times occupy a position near to the glass, and sufficient air admitted to keep the growth sturdy. If nice light warm pits are at command, the Peas may be grown planted out in a mixture of rough loam and manure; and in these ways Peas may be gathered for table without much trouble several weeks before those outside are ready. For pot and frame, and short rows on a snug border, or for planting at the foot of south walls, the dwarf kinds should be grown, Bijou, American Wonder, and William Hurst, are alike good for such purposes.

Before making out the seed order for another season's supply, it is well to overhaul the seeds left from last season, and ascertain what seed is good by sowing 10 or 12 seeds of each variety in small pots in heat. Those which germinate slowly, irregularly, or not at all, are not to be depended on to sow in the open ground. This being the last Calendar of the year, a list of the different vegetables which have done well here may be of use. Of Peas, Veitch's Extra Early, William the First, William Hurst, Emerald Gem, Criterion, a very fine Pea; Champion of England, Huntingtonian, Ne Plus Ultra, British Queen, and Telephone, this latter does best here as second early, and late. Cauliflowers, Dean's Snow Ball, Early London, Walcheren, and Veitch's Autumn Giant. Spinach Victoria is very fine, while New Prolific is considerably in advance of the old round Summer and Winter Prickly. Ellam's Early, Mein's No. 1, Early Enfield, and Wheeler's Imperial were our best Cabbages. Onions, Main Grop were very fine; Bedfordshire Champion and James's Long-keeping, the latter the best for keeping. Carrots, Early Nantes, James' Intermediate, and Altrincham, the latter although long, is probably one of the best cooking Carrots.

Leeks, Ayton Castle Turnip, Snowball, Veitch's Red Globe, which is very good and cooks well; Chirk Castle Blackstone, Early Milan, the latter good for early use, and only for that purpose. Radishes, Wood's Frame and French Breakfast. Tomatos, the old Red, Laxton's open air, and Sutton's Perfection, in warm positions on walls. Celery, Sandringham White; Veitch's Matchless, and Major Clark's Red. Brussels Sprouts, Exhibition, The Aigburth, too large for some; May's Northam Prize is excellent, the sprouts are exceptionally solid and tender, and find great favour with the consumer. Kales, the common curled Scotch, we do not care for the dwarf for general use; and Asparagus. Veitch's Early Sprouting Broccoli, Lee's White, and the Old Purple were good this season; also Ledsham, Knight's Protecting, Gilbert's Victoria, Veitch's Self-Protecting, and Snow's Winter White, which are the best of the Broccolis.

Savoys, the Dwarf Ulm, Gilbert's Universal, and the Drumhead. Neal's Ne Plus Ultra Runner Bean proved itself again to be good, being both fine in pod and quality; while Osborn's Dwarf and Ne Plus Ultra French Beans are always good for dwarfs. *H. Markham, Mereworth Castle, Maidstone.*

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

WEDNESDAY, Dec. 31—Roses, Fruit Trees, Dutch Bulbs, Liliums from Japan, &c., at Stevens' Rooms.

THURSDAY, Jan. 1—Lilies, Plants, and Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, Jan. 2—Imported and Established Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Jan. 3—Roses, Fruit Trees, Dutch Bulbs, Liliums from Japan, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK.—37°.2.

*** Secretaries of Societies, and others, are earnestly requested to forward immediately, the dates of Show fixtures and Meetings of horticuitural societies of any kind for 1891, for insertion in the Almanac, to be published in our issue for January 3.

The Passing Year.

The year now almost at a close has been a very busy, if not a very eventful one, with horticulturists. On looking back to see what has transpired, the main fact that strikes us is a very melancholy one. The proportion of those who have been taken from us is unusually large, and not only is the number large, but the gaps left in the horticultural ranks by the decease of so many of our friends and associates are unusually wide and deep. Among the amateurs, the genial, generous, simple-minded James McIntosh, the accomplished artist and intrepid traveller Miss Marianne North, George Deal, to whom the Orphan Fund owes so much; Alphonse Karr, the brilliant writer, and E. Cosson, though true Frenchmen, belong the one to science and the other to literature, rather than to any special nation. Dubreuil and Houllet were esteemed and known on this side of the Channel as practical gardeners of repute. Botanists will lament the veteran Ralfs, the more than veteran de Bunge and the accomplished Tchihatchef. Our transatlantic friends in particular will miss such men as Dr. Parry, Dr. Thurber, and Peter Henderson. Gardeners will long remember William Wildsmith; and those whose interests lie with the delightful Botanic Garden at Oxford, of historic memory, will bear the name of W. H. Baxter in kindly remembrance, even though he had for some few years before his death resigned his post in the garden. James, of Farnham Royal, attained a position among floriculturists that few in his time can rival, and none excel. But it is among the nurserymen, more particularly, that the losses have been heaviest. James Backhouse was an accomplished botanist, and a most estimable man, and no one who knows the York nurseries will deny to him a foremost position as a cultivator. Stuart Low, again, takes rank second to none; and from a like position no one would exclude B. S. Williams. William Holmes will be remembered so long as the Chrysanthemum Society exists, and there is no one who knew Maurice Young but will lament that he has been so early taken from among us. Others might be mentioned, were it necessary to swell the mournful list; but with the mention of the genial and meteoric Shirley Hibberd, whose loss is so recent that silence best befits our feelings, we must pass to other topics. We shall best honour the dead by profiting by their life's work, and improving upon it as best we may.

Turning to the work of the year, it is evident that, although there has been much done, it has been of an uneventful character. The discussion in our columns on empiricism and rationalism in matters of cultivation elicited an extraordinary amount of interest, and verified the old saying that there is a great deal to be said on either side. As the professed empirics availed themselves to the full of any "rational" aid, it is obvious that the difference between the two sets of champions turned mainly on words, and on the different interpretation of terms.

The Royal Horticultural Society has pursued a steady and progressive course. Its difficulties are, we hope, surmounted, but it requires much more support than it has at present to enable it to realise the high ideals set before it. Its meetings have been up to the average in interest—its large shows and conferences decidedly above the average. There seems to be no reason why the special societies which at present are elements of weakness, so far as regards the parent Society, should not be affiliated with it as an imperial centre, each having its own Home Rule organisation, and thereby save much unnecessary expenditure, and strengthening instead of weakening the central body. It is with pleasure we saw that some of these societies held their shows in connection with the Royal Horticultural Society; and we trust this example may be followed and extended in future. One guinea is now all that is asked by the Royal Horticultural Society for the privileges of annual membership, while in many cases one has to pay just as much for one specialty; while if he be catholic enough to like several descriptions of flowers, he will require an ample supply of guineas to gratify his fancies. If prize-money be the aim, that might readily be achieved by special subscriptions for the purpose.

Reverting to the Chiswick Conferences, they have been interesting and enjoyable, and the displays there made, show that there still exists zeal for horticultural progress as such, independently of the attractions of prizes—a wholesome sign which is of the happiest augury. The lectures at the fortnightly meeting have been good, and their reputation is extending, so that it may be expected that larger audiences will be gathered together in coming seasons. This would almost certainly happen if we could get our promised Hall. At present we believe that not much more than half of what is required has been promised.

The gardening charities have been well supported: the Gardeners' Royal Benevolent, and its younger ally, the Gardeners' Orphan Fund, have made steady progress, not unfortunately quite in proportion to the demands made upon them; but this can hardly be expected. The *fête* in the Flower Market was this year a success, as it was certainly a novel and a beautiful spectacle.

Hardy fruit culture is clearly spreading. The Fruit Growers' Association is doing what the Royal Horticultural Society ought to have done long ago (and probably would have done had funds permitted), by commissioning lecturers to visit the provinces, and diffuse useful information on the subject among those who need it most. In the meantime, the Fruit Conferences of the Royal Horticultural Society and its publications on the subject have been admirable. The Great Fruit Show, held under the auspices of the Fruiterers' Company in the Guildhall of the City of London, was a conspicuous success, and will, no doubt, foster the growing tendency to extend the domain of fruit culture.

The Chrysanthemum is the flower of the period, and its extraordinary diversity of form and colouring, as well as the season at which it blooms, amply justify the popular taste. The second centenary celebration, held at the Aquarium, was highly successful, though not so interesting as the first, held the year previously at Chiswick.

Kew has not startled us this year with Titanic Aroids, but has amply maintained her reputation. A noticeable event in its annals has been the retirement from the keepership of the Herbarium and Library of Professor Oliver amid expressions of general regret and esteem. The appointment of Mr. Baker in succession has been thoroughly popular, as it ought to be.

An honest attempt was made during the year to regulate the nomenclature of Orchids for garden purposes, and a code of rules was drawn up, which, though not all that could be wished, and faulty in places, seemed to offer a good working compromise. It was hoped that it might serve not only for Orchids, but for other plants as well. We fear, however, from recent experience, that people will prefer to go on in their own way, unfettered by any regulations, and uninfluenced by any considerations but the law of "do as you please," and its parallel, the "law of least trouble."

Commercially, the year has been fairly prosperous; the crops in which we are interested were good, except in the case of hardy fruit, which was deficient. Potatos were not so badly diseased as they were expected to be, and the weather, variable and capricious beyond the average, was not, on the whole, unpropitious. What the result of the extraordinarily severe spell through which we are now passing may be, it is too soon to realise, but in spite of fog and frost, Christmas bells are ringing out their peals, cheering us for the present, bidding us look back with thankfulness, and forward with hope.

Our Jubilee.—On the 2nd of January, 1841, appeared the first number of "the *Gardeners' Chronicle*—a stamped newspaper of Rural Economy and general news. The Horticultural part Edited by Professor Lindley." We propose in our next number to say something of the *Gardeners' Chronicle* of those days, when it had but two or three competitors, and of the present, when there are eight or nine journals devoted expressly to horticulture, besides a multitude of others, into which gardening enters in some form or another.

Veitch Memorial Prizes.—At a meeting of the Trustees of the Veitch Memorial Fund held on Tuesday last at the office of the *Journal of Horticulture*, Dr. Masters in the chair, it was decided to offer Veitch Memorial Medals, &c., for the year 1891, as follows:—At the Edinburgh International Horticultural Exhibition in September, three medals, (1), for the most meritorious dish of fruit; (2), for the most meritorious Orchid, stove or greenhouse plant selected from the exhibits; (3), for the most meritorious and interesting hybrid plant or fruit. (Note.—The word hybrid as here used applies to a cross between two reputed species, not between two varieties of one species.) At the York gala, one medal for the most meritorious Orchid, stove or greenhouse plant selected from the exhibits. —At the Conifer Congress of the Royal Horticultural Society at Chiswick, in October next, one medal for the most meritorious collection of fresh cones, with foliage, of hardy Conifers grown in Great Britain.—At the Crystal Palace autumn show, or at one of them, a medal for the most meritorious collection of twelve dishes of vegetables (distinct). Trade exhibitors are precluded from competing for the Veitch prizes.

The Shirley Hibberd Memorial.—At a meeting of the committee appointed by the Royal Horticultural Society to consider the best means of perpetuating the memory of the late Shirley Hibberd, and held on the 19th inst., in the Lindley Library, it was unanimously decided to secure a portrait of the eminent horticulturist, to be placed

in the hands of the trustees of the Lindley Library, on behalf of the Royal Horticultural Society. It was further decided that the surplus remaining after the expenses connected with the preparation of the portrait have been defrayed, shall be invested in the names of trustees, to be hereafter appointed, for the benefit of Mr. Hibberd's orphan daughter. The committee appointed to carry out the scheme is composed of the following gentlemen:—Rev. W. Wilks, Secretary to the Royal Horticultural Society; George Paul, and James Douglas, representing the Council of the Society; and Messrs. W. H. Collingridge, W. Marshall, R. Dean, and Dr. Masters representing the Fellows. Many subscriptions have already been promised, and others are solicited, which may be paid to any member of the committee, or to Dr. Masters, Chairman of the Committee, at the Royal Horticultural Society, 117, Victoria Street, Westminster.



Fig. 152.—Great beech at Holwood. (see p 764.)

"The Gardeners' Magazine."—The Christmas number contains, as usual, many illustrations, and a good stock of practical articles and seasonable fiction. The paper is invested with melancholy interest, as the preparation of this number must have been among the latest things to occupy the thoughts and time of the late Shirley Hibberd. Many will be interested in the account of "Tim Bobbin and the Lancashire Dialect," which was written by him. A colour-printed almanack for 1891, in which Orchids are made to frame the calender, is also given.

Floral Parade.—A Dutch correspondent obligingly forwards us a photograph of a triumphal car decked with evergreens and flowers. In the car are seated ladies and children similarly bewreathed Under certain circumstances such things are permissible, but we trust we shall hear no more of a horticultural or botanical society indulging in such tasteless nonsense.

"Check List of Canadian Plants."—There has been published what is believed to be a complete list of the phænogamous and vascular cryptogamous plants of Canada. The catalogue of Canadian plants issued by the Geological Survey of Canada has been used as a basis, but a large number of species discovered since it was published have been included in the list. Many genera, too, have been revised by specialists, and their revisions have been used in the preparation of the *Check List*. Several additional species discovered this year (1890), are included. The price of the list is 50 cents per copy, three copies for 1 dol. Address: Jas. M. Macoun, Geological Survey, Ottawa, Canada.

"Amateur Gardening."—The Christmas number of *Amateur Gardening* is an excellent twopenny-worth, containing many useful articles and a coloured plate of Gloxinias. The uncoloured illustrations are numerous and seasonable.

Cancer and Fungi.—In a loose way, many persons have associated this horrible disease with the presence of a parasitic fungus, but the association has never, till recently, been experimentally proved. Recently, however, Dr. Russell, of Edinburgh, availing himself of the methods of staining, now so much in use among microscopists, and by means of which different tissues and growths may be readily distinguished one from another, has succeeded in discovering fungus spores in cases of cancer. Dr. Russell considers that this fungus acts like yeast, and, like it, sets up a fermenting process, accompanied by changes in the tissues. Dr. Russell's experiments will have to be repeated by other observers, and if confirmed, will lead, it is to be hoped, to some means of combatting this fearful malady.

Sexual States of the Chile Pine.—We lately gave an illustration of a branch of Araucaria imbricata bearing male catkins and female cones on the same bough. Mr. Menzies kindly tells us of a tree in the gardens of Elliot Lees, Esq., M.P., of South Lytchett, near Poole, which usually produces male flowers only, but which in 1874 bore a single cone with fertile seeds, from which were raised numerous plants. We have seen Mulberry trees in like manner produce in one season male flowers only, in another female flowers, and similar illustrations will reveal themselves to observers of plant life. We append Mr. Menzies' letter, as it contains interesting details regarding the tree. The accompanying photograph represents a well-grown symmetrical tree of oblong outline, but as we have so frequently given illustrations of similar trees, we must confine ourselves now to the mere mention of the tree at Lytchett, and thank Mr. Menzies for his interesting communication.

"I herewith send, for your inspection, a photograph of an Araucaria imbricata at South Lytchett Manor, taken in August, 1887. It was planted at Lytchett in 1822, when a plant of 10 or 12 feet high, and was moved close to the conservatory, where it now is 18 feet from the front wall. I recently placed our longest ladder against the tree, nailed three long measuring rods together, and put them up through the tree till level with the top, and we thus found the exact height to be 56 feet; girth, at 1 foot from the ground, 11 feet; at 4 feet from the ground, 7 feet. It was always considered to be a male plant till 1874, when it bore a single cone, which produced fertile seeds, from which were raised plants. It annually bears an immense crop of catkins, but has never borne a female cone before or since 1874. In 1854, twenty plants were placed in various situations in the grounds, several of which are over 35 feet in height. One of the same lot was considered to be a female, having a very graceful and elegant appearance; being much less rigid and sturdy, it far outstripped the others in height, bore a great many cones, but it got into a weakly state, sickened and died, and when cut down in the early part of this year, was 45 feet in height, 5 feet 6 inches in girth at 1 foot from the ground. It may also interest some of your readers to state that for 20 feet upwards of the best end of the tree the wood was black and discoloured; had it been cut and seasoned properly, I believe it would make a very useful kind of timber. There was a long crack in the bark, from which resinous matter ran in enormous quantities in warm weather. All the young trees bear cones profusely,

and are making satisfactory growth; no two subjects being of similar habit." *James Menzies, Gardener to Elliott Lees, Esq., M.P., South Lytchett Manor, Poole.*

Tuberculosis.—Sir Joseph Lister, than whom no authority is more competent, speaks of Dr. Koch's treatment in certain cases of tuberculosis as "simply astounding." This is no place to enter upon medical details, but we can but hope that no further obstacles will be put in the way of competent experimenters and physiologists in their endeavours to lessen the miseries of animal as well as of human life. We rejoice to see the formation of a British Institute of Preventive Medicine announced, so that the countrymen of Jenner may be placed under as favourable circumstances as those of Pasteur and Koch.

The Origin of the Nervous System of Animals.—Many points in the structure of the brain have hitherto seemed inexplicable and anomalous. Dr. Gaskell offers an explanation which will interest evolutionists by suggesting that the nervous material grows around a pre-existing invertebrate alimentary canal, so that one most important stage of evolution would seem to consist in the addition to the alimentary canal of some crustacean-like creature of nervous material.

The Gardeners' Orphan Fund.—The usual monthly meeting of the committee took place at the Horticultural Club on the 18th inst., Mr. William Roupell in the chair. The balance at the bank was stated to be £584 10*s.* 11*d.*, and the following special receipts were announced: Bournemouth and District Gardeners' Mutual Improvement Society, proceeds of Concert, £15 10*s.* 6*d.* Collecting boxes as follows:—Mr. J. Smith, Mentmore Gardens, Chrysanthemum show, 10*s.*; Mr. J. C. Mundell, Moor Park Gardens, £1 12*s.*; Mr. Miller, Margate, 9*s.* 1*d.*; Mr. Chapman, Yeominster, 16*s.*; Mr. Scott, Bradford, £1 12*s.*; Messrs. H. Cannell & Sons, Swanley, £1 10*s.*; Mr. Johnstone, Tamworth, £1 10*s.*; Mr. C. Sutton, Sevenoaks, 10*s.* 6*d.* A letter was read from Mr. Mitchell, acknowledging the resolution of regret at the death of Mr. Shirley Hibberd, passed at the last meeting of the committee.

"British Ferns, and Where Found."—Mr. E. J. Lowe has just published through Messrs. Swan Sonnenschein & Co., a little book with this title. A glance is sufficient to show that it will be very acceptable to Fern lovers. More detailed criticism must be reserved for the present.

The Genus Masdevallia.—The first part of the monograph of the genus Masdevallia, produced under the auspices of the Marquis of Lothian, and founded to a large extent on plants grown in his collection at Newbattle, has been published. The illustrations, ten in number, have been prepared by Miss Woolward. Valuable notes have been contributed by Consul Lehmann, from whom further assistance, in the way of maps, drawings, and descriptions may be expected. We shall refer to this work at greater length on another occasion. In the meantime, we may say that the price of each part is 30*s.*, the size imperial 4to. It may had from Mr. R. H. Porter, 18, Prince's Street, Cavendish Square. Only 250 copies are printed.

Illustration Horticole.—The plants figured in the last number are:—

Gladiolus hybridus, Hort., t. 115, represents some of M. Lemoine's seedlings.

G. Pactolus.—Flowers canary-yellow, lower petals spotted with rich carmine.

G. Rev. W. Wilks.—Very large flowers, colour vermilion, lower petals with a central stripe of a deeper colour.

G. E. V. Hallock.—Flowers very large, upper petals white, except at the base, which is reddish-brown. The base of the lower petals is canary-yellow, spotted with reddish-brown.

G. President Carnot.—Flowers very large, deep rose, tinted with carmine.

G. John Laing.—Flowers scarlet, with a dark throat, lower petals streaked with deep carmine.

Nepenthes Brieniana, t. 116.—Described by MM. Linden and Rodigas as a new Bornean species, with very long, sub-cylindric pitchers, green-spotted, with red at the base; the throat is surrounded by a finely striated green collar, and the operculum is obcordate. The wings are very narrow.

Catasetum Bungerothii var. Randi, t. 117.—A variety with canary-yellow flowers, the lip having an apricot-coloured blotch at the base.

Cactus Dahlias, t. 118.—*Kentish Sun*, scarlet; *H. Cannell*, rich crimson; *Cannell's* favourite, orange-yellow; *Mrs. Douglas*, delicate rose, shaded with salmon.

The Chrysanthemum.—Our late friend Hibberd once lamented in our hearing that the Chrysanthemum had not inspired the poets. Had he lived a little longer, he might have read the subjoined in the *American Florist*:—

"Of all the flowers I love so well,
Chrysanthemum, Chrysanthemum,
There's one whose praise I'll ever tell,
Chrysanthemum, Chrysanthemum.
It dresses fine, and looks so swell,
And then last fall it sold so well,
And caused my bank account to swell,
Chrysanthemum, Chrysanthemum.

"No other flower can vie with thee,
Chrysanthemum, Chrysanthemum.
Such matchless form and symmetry,
Chrysanthemum, Chrysanthemum.
If my spring crops should failures be,
I'd sit me down and wait for thee
To bring thy golden shower to me,
Chrysanthemum, Chrysanthemum.

"Thy opening buds are watched all day,
Chrysanthemum, Chrysanthemum.
And some are up all night, they say,
Chrysanthemum, Chrysanthemum.
They twist and turn thee every way,
Then send thee to the show so gay,
And the judges other fellows pay,
Chrysanthemum, Chrysanthemum!"

The Flora of Warwickshire.—Mr. Bagnall has just issued his botanical census of the county of Warwick, to which we have before alluded. The author has shown himself in his preliminary publications a conscientious and extremely careful worker, and his completed volume does but bear renewed testimony to the same effect. The flora has been drawn up essentially on the same plan as that of Middlesex by Messrs. Trimen and Dyer, which set the fashion for so many similar productions. The volume begins with an account of the topographical and geological features of the county written by Mr. Bernard Badger, late Burdett-Coutts scholar, of New College, Oxford. Meteorological data follow, and then a detailed account of the several divisions of the county is given, mention being made of the more important or interesting plants found in each. The division is based upon the river-basins of the county. Considering the generally uniform nature of the surface, as well as of the soil, no better plan could have been adopted to facilitate investigation into the distribution of the plants. Warwickshire is a typically English county midland in position, it possesses no lofty range of hills, no very sharp differentiation of soils—such as occurs in Derbyshire or Yorkshire, where one side of a valley may be of mountain limestone, the other of silicious grit, each with a distinct flora. The rainfall and the temperature do not greatly differ from what is observed elsewhere in the Midlands, except perhaps as to their detailed distribution, for we are told that while the general results or means are nearly the same in Warwickshire as in Hertfordshire, centuries of painful experience have taught the Warwickhire farmer that his county is little fitted for corn-growing compared with Hertfordshire. Warwickshire contains, according to Mr. Bagnall, 852 plants out of 1425 considered native to Great Britain. Of the 852, 501 are noted as being of the British (or general) type of distribution; and 285 of the specially English type against 409 possible representatives of this type. It will not be surprising to find only 18 out of 81 "Scottish" plants, 1 out of 120 Highland plants, and 8 out of 70 of the Atlantic type, but we should have expected more than 36 out of the 127 of the Germanic type common in the East of England. A detailed comparison is given with the floras of Leicester, Northampton and Oxford. Special value is given to this flora by the inclusion of Mr. Bagnall's list of the mosses and hepaticæ which, may be taken as nearly complete, of the lichens, and of the higher groups of fungi, in which latter division Mr. Bagnall has had the co-operation of Mr. W. B. Grove. The work has good indexes, is most carefully and clearly got up, so that although the type is small it is clear, and owing to the character of the paper, which is devoid of that gloss which is so fatiguing to the eyes, easily read. One needs to be a Warwickshire botanist fully to appreciate this volume, but even an armchair naturalist could fairly gauge the care which has been expended in its production, from the preparation of the "copy" to the machining and folding. One thing we could have wished—and it is impressed on us as we take the volume from the study table to place it on the appointed shelf—that publishers of local floras would agree upon a uniform size of volume. It would have been a convenience if this flora, for instance, had been of the same size as that of Middlesex or Oxfordshire, or of the same dimensions as that of Derbyshire.

A Hybrid Cypripedium.—We learn from a correspondent that J. Charlton Parr, Esq., of Grappenhall Heyes, Warrington, has succeeded in raising a beautiful hybrid Cypripedium, a flower of which he has sent to the office of the Royal Horticultural Society. It was obtained by crossing C. Haynaldianum and C. Spicerianum, and is very distinct, but betraying its parentage at a glance. The upper sepal is broadly ovate, pure white, tinged with soft pink, and has an olive-green stain at the base, densely covered with dark purple blotches, and bears resemblance to C. Leeanum. The lower sepal, creamy-white, tinged with pale green, and spotted with dark purple at the base, is smaller. The petals are about 3 inches long, more than half an inch broad at the base, and a little less broad towards the tips. The basal half is pale yellowish-green, covered with dark chocolate blotches, while the apical half is dark crimson, with a distinctly deeper coloured midline. The margins have very short, silky hairs, which are also found at the base, and on the foot of the staminode. The lip is of a coppery-brown shade, which passes into green behind, while the inflexed lobes are of almost ivory whiteness. The staminode is white, with green reticulations in the centre, and a deep crimson stain round the sinus, evidently part of the colouring from the staminode of C. Spicerianum. On the whole, the plant favours C. Haynaldianum; but there are ample proofs of the presence of C. Spicerianum.

Carnivorous Plants.—M. P. Duchartre publishes some "Remarks on so-called Carnivorous Plants" in a recent issue of the *Journal de la Société Nationale d'Horticulture de France.* He thus sums up his remarks on various species of Nepenthes, Drosera, &c., as follows:—1st. The liquid secreted by special surface glands of plants called carnivorous, does not contain digestive properties capable of so acting upon animal substances as to dissolve them; such plants then do not digest animal matter, and consequently possess no qualities which justify their being called insectivorous or carnivorous plants. 2nd. In this liquid, the moment it comes in contact with the air, various micro-organisms (bacteria, &c.) are deposited; these were in the air, and then, in conjunction with other causes, effected the decomposition of the animal matter found in the secreted fluid in question. 3rd. If the liquid which contains the decomposed material is absorbed by the surface-

glands of so-called carnivorous plants, it is only in an appreciable quantity. 4th. And again, such absorption is by no means necessary to these plants, which without it would grow healthily, and could even be brought by simple cultivation to a degree of vigour equal, or even superior, to that which they show when growing naturally. 5th. Therefore, the theory of plants being carnivorous, however ingenious and interesting it may appear, is without foundation and should be abandoned.

Mountain Plants.—Under the title of *Plantes des Montagnes et leur Culture*, M. Correvon has a work in the press, which will be a revised and much-extended version of his *Plantes des Alpes*, now out of print. We understand that great interest is now felt in Geneva on the subject of alpine plants. M. Correvon's labours are chiefly in the direction of cultivation.

"Xenia."—We understand that Dr. Kränzlin, of Berlin, has undertaken to continue the publication of this work, commenced and carried on till his death by Professor Reichenbach. The fourth part of the third volume is ready for publication. The plates for this were drawn by the late Professor, and Dr. Kränzlin has written an explanatory text, in the preparation of which he will receive the sympathetic consideration of all botanists.

Kingston and Surbiton Chrysanthemum Society.—The annual meeting of this Society was held at the Kingston Hotel on Tuesday, December 16, when there was a large attendance of members. Mr. Furze was voted to the chair. The Secretary read the annual balance-sheet, which showed that the year's receipts had amounted to £351 9*s*. 9*d*., and the expenditure to £291 12*s*. 6*d*., leaving a balance of £59 17*s*. 3*d*. in hand. Mr. Woodgate compared the respective items with those of last year's statement of accounts. It appeared that £150 14*s*. was paid away in prizes, including the £27 expended upon the new Challenge Cup, as against £107 11*s*. 6*d*. last year. A portion of the increase was due to the fact that at the last exhibition they paid the full prize-money offered, there being no blanks in the classes. The subscriptions totalled £176 5*s*., and there was about £10 outstanding, showing an increase of about £15 over last year. At the doors £89 17*s*. 6*d*. was taken, this being £20 less than at the previous show.

DWARF FORM OF RICHARDIA ÆTHIOPICA.

As a knowledge of new and useful plants introduced from time to time is necessary to gardeners, especially those who have to provide plants for indoor decoration, some of your readers may have seen, but few have read, any account of a new variety of Richardia æthiopica, which was shown and awarded a Certificate of Merit at a meeting of the Royal Horticultural Society a short time ago. It is a new dwarf seedling variety, which grows from 9 inches to 1 foot in height, with a perfect spathe. The plant was raised and exhibited by Mr. H. Elliott, Springfield Nursery, St. Heliers, Jersey. The fig. 153, shows the ordinary form of Richardia, and the new variety standing alongside of it, which gives a correct idea of its height and habit. Nearly every gardener is acquainted with the ordinary form of this plant, and knows also that except on a large scale, or in large groups, the plant is of little use for decorative purposes, and therefore the flowers are used chiefly in the cut state. This variety seems to me to supply a long-felt want—that of a free-flowering plant with graceful foliage; and there is no doubt that it will become a favourite in a short space of time. One great recommendation of this Little Gem, for such is its name, is the small space it requires to grow it in, and the small size of the pot, a 32 being the largest size needed, so that in the growing-house the plants may stand close together, like small bedding plants—and to most gardeners space is a great matter. The plant would be useful in the subtropical garden, for the sake of its bright green leaves and many spathes, and a future may be predicted for it in that way. *T. Sharman, Botanical Gardens, Rozel, St. Martin's, Jersey.* [The raiser, Mr. Elliott, informs us that there is already a considerable demand for the plant, but some time must elapse before a large supply can be raised of it. Ed.]

CHRISTMAS DECORATIONS.

For some years I have raised my voice against the wholesale slaughter of the innocent Holly and Mistletoe at Christmastide, though seemingly to little purpose. For this year (1890) it seems earlier and more extensive than usual. For the past week or more, throughout the rural districts, the woods, copses, and hedgerows have been alive with Christmas raiders, legitimate and otherwise, and tons and truckloads have been and are being dispatched in all



Fig. 153.—Dwarf form of the so-called Arum Lily.

directions. Before the slaughters the country was bright and verdant; after them bleak, bare, and colourless. And every year the slaughter widens in area, and is carried to greater excess. The berried and variegated Hollies and the Mistletoe are the greatest sufferers, and in some districts the latter is in danger of dying out through excessive cutting. Even in the interest of those who make a regular trade in decorative material at Christmastide, it is high time a note of warning were raised against wholesale destruction; for at the present rate of consumption, there will soon be absolutely nothing left to cut. Whereas the effect upon shrubberies and landscapes in close proximity to railways, canals, or large towns is becoming positively disastrous.

All this is the more to be regretted, as such wholesale destruction is by no means needful for decorative purposes, to say nothing of excessive use of material which mostly results in heaviness or vulgarity rather than chasteness or beauty. The mode of cutting and marketing Christmas decorations is responsible for half the wholesale slaughter of Hollies and other choice shrubs and trees. Were all such sold in hampers or open basketfuls of branchlets or sprays ready for use, two-thirds of the carriage would be saved, and most of the worry, despair, and many of the sheer failures of decorators would be prevented. But of infinitely more importance than any or all of these—the health and beauty of the shrubs, either singly or in the mass, might be much improved through this method of twiglet and branchlet cutting, rather than be disfigured and destroyed through prevalent methods of procuring and marketing decorative material.

Of course, many obstacles would arise at first, and the cries of waste of time in woods and copses would be raised. But it would soon be found that any time lost in these would be saved to decorators; and material ready for use, instead of delivered in the rough, would command higher prices. The protection of baskets would also enable it to be delivered in far finer and fresher condition. In fact, few plans could be more wasteful and troublesome than the present rough-and-ready methods of delivering evergreens and berried plants for decorative purposes. These are mostly done up in huge bunches and faggots, not seldom so large as to heat on long journeys. The mere weight of the bundles also not infrequently wound and bruise the finest leaves and berries on the journey, while quite two-thirds of the weight and bulk of the material is entirely unfit for decorative purposes, and proves an embarrassing encumbrance to purchasers. Contrast this with basketfuls of sprays and branchlets from 6 to 12 inches long, clean and fresh, every one studded with berries, or clothed with fresh foliage, and all ready for immediate use, the whole burden and worry of the preliminary preparation already done, the material uniformly good, the work of decoration would proceed merrily as Christmas bells, and could hardly fail to reach a higher standard than at present; for the size and roughness of existing materials often tempt decorators to use them of too ponderous a character, that hide up all decorative taste or artistic beauty under a mere dead weight of greens. With lighter, better material, improved taste would almost necessarily follow. The mere reduction of the massiveness of most decorations by one-half would make most of them as good again. And could we gain the eye and ear of the many thousands of ladies and gentlemen now so busy in decorating their homes or churches for Christmas, our first words would be to them:—Ladies and gentlemen, hold hard; a lighter hand and touch, please. Decorate less, or not at all, if it will hide existing beauty, but aim to heighten it by lightly draping or embroidering with richer grace and elegance. *D. T. F.*

AGRICULTURAL RETURNS FOR 1890.

Whosoever will "read, mark, learn, and inwardly digest" the Agricultural Returns of Great Britain for 1890, will have performed a feat which falls not to the lot of ordinary mortals to be able to compass; but the editor of these bulky Returns now before us—covering 107 pages of tables crammed with figures, and nearly thirty pages of explanatory letter-press. The editor of this heavy annual return is Mr. J. Craigie, Director of the Statistical Department, and his neatly-done work almost alone justifies the formation of the Board of Agriculture. His manipulation of the statistics is such as to render them interesting to folks of only ordinary capacity, and such as desire to take a wide survey of the particular fields of industry treated upon here, will certainly not tire of their survey if they follow the editorial guidance afforded in the introductory chapter. The ups and downs of foreign supplies are sometimes extraordinary, and between the lines of that record one can read of many a commercial disaster and good intentions gone wrong.

As, according to the Act constituting the new "Ministry," "agriculture includes horticulture," we seek in these pages for matter interesting to our readers, and are not disappointed; and what we read of as having been accomplished serves as an index to what remains to be done, and of the way to do it, a few lines may be devoted to the—

Potato Crop of 1890.—The only noticeable decline in this section of the year's acreage is the Potato crop, whereof 50,000 fewer acres have been grown—

the total for Great Britain being 530,000 acres. There is a less breadth of Potatos in every English county but three, and in these the increase is immaterial; while every Scotch county but one reports a small decline. The collectors of the returns agree in attributing this uniform decrease to the low and unremunerative prices which were obtained for the large Potato crop of 1888. In view of the presence of—

Potato Disease in Ireland.—A special inquiry was made by the Board of Agriculture into the extent to which the Potato crop in Great Britain was affected. A summary of the report received from the inspectors, indicating that no serious loss from this cause was to be apprehended in Great Britain, was issued in October.

Referring to the imports of Potatos, the returns say that a very remarkable difference is visible in the imports of Potatos. In 1861—65 only some 3 lb. per head of our population were received from abroad; whereas the average import of the five years, 1876—80, was as high as 28 lb. per head, while this sunk in 1886—89 to an average supply of 7 lb. As to—

Small Fruit.—An increasing area, more than sufficient to balance the decline in Hops, is again reported, as under small fruit, embracing Strawberries, Gooseberries, Currants, &c., under this title. The surface returned as occupied in this way is 46,200 acres, or an increase of 4,300. The practice of fruit-growing is certainly extending both in England and Scotland, and the reports of the collectors contain references to the development of this branch of agricultural industry in new localities, and to the provision of local facilities for disposing of the produce by jam factories, and arrangements for preserving the fruit.

The Orchard and Market Garden.—We are told that the area under orchards once more shows an increase, the total for Great Britain now standing at 202,300 acres—a larger surface than has yet been recorded. This is also the case with market gardens, which are stated to have increased to 73,300 acres.

We may be pardoned for giving a few items here respecting the supply of poultry. There is a new table in this Return, from which we learn that there is hardly a country in the world too remote to supply us with eggs; even Australia has begun to send us eggs, which must be eight weeks old at the least when put on our market. This supply, however, is a very small one. From Russia we had nearly 75 million eggs last year; France and Germany between them sent us 714 million of eggs; Belgium over 200 millions, and there are 2 millions from Portugal, and smaller quantities from Norway, Sweden, and the Channel Islands, Morocco, Malta, Italy, Egypt, and Turkey. Altogether, it would seem, we have to go abroad for between eleven and twelve hundred millions of eggs, representing in value over £3,000,000, and this leads us to ask why we produce so few where so many might be expected?

There are certain items of information usually given here which are omitted, but much of this was given in a previous return respecting allotments, &c., published some months since. It is possible that a separate return as to timber-lands may be vouchsafed us by-and-by. Certainly the subject is well deserving separate treatment.

We may note in conclusion that the printer has done his work in excellent style, and that the index is what it purports to be.

Ghent.—The schedule for the approaching exhibition, from May 10 to 12 inclusive, has been issued. It comprises more than 200 classes. The Society takes time by the forelock in prefacing this schedule with an announcement that in April, 1893, the thirteenth quinquennial international exhibition will be held. The announcement is made thus early in order to induce cultivators to grow fine specimen plants for the occasion, not only of Palms, Tree Ferns, Azaleas, Orchids, but also forced plants, such as Roses, Philadelphus, Cratægus, and many others, which add so greatly to the charms of a spring exhibition, and which afford such striking illustrations of the skill of the gardener.

Home Correspondence.

Rooks, Crows, and Sparrows.—Kindly allow me space to add to the interesting articles that have appeared in the *Gardeners' Chronicle*. I find that so far back as 1611, there was a great outcry against special grievances, and the increase of rooks, crows, and sparrows, was one of these. It was called the common complaint, and chiefly arose from the dearness of corn at this period. I give an excerpt: "The greatest devourers of corne, of these kind are rookes, crowes, and sparrowes, the number whereof is infinite, and so is the quantitie of corne which they destroy yearely," and after the stating of the damage they do in various ways, it is pointed out that "all of which or the most part of them may easily be destroyed in three yeares; onely, by pulling downe of their nests in breeding time, not suffering any of them to breed, every man to undertake for his own ground upon a penaltie, to the use of the poore of the parish." So it seems that it is no new thing the outcry against the above birds, but for my own part I am strongly in favour of rooks being of more use to the farmer than any harm that they may do. For a long series of years I have watched them carefully, and I am of opinion they will not touch ripe corn unless driven to do so from want of their proper food—worms, grubs, and insects. While writing about the rook, I may mention one or two incidents that have come under my observation lately. One is that a colony of rooks began to build in a clump of trees near here. They were unmolested, as far as I could learn, but last spring instead of making ready their nests for breeding purposes, they suddenly pulled them all to pieces and carried away the sticks to other trees at some distance. Also I have three rooks come into my garden to be fed in hard weather. I know these rooks well, they feed generally on or about the railway, and three is their number. Well, during the very dry weather in the breeding season, I put out food and water for them, when I noted each filled its beak with food as much as it could carry, and then flew away to some distant tree where, I believe, there were nests. Now, what I want to know is, Are there two hens to one cock bird in a nest? This looks like it, and it has been so stated before. As regards the crow, I know so little positively of its habits, that I will say nothing. As regards the sparrow, when sparrow clubs were rife about here, I was strongly in favour of the bird being of more use than harmful. After more than a quarter of a century's careful observation, I am now quite of a contrary opinion. It is all very well for people to assert they catch so many caterpillars every five minutes during the daytime, while they are feeding their young, and so many caterpillars in such time make so many a day, and so on. When the sparrow's young are very small, they get aphis for them if they can, then caterpillars, &c., but failing these, they then take the small buds from the Gooseberry bushes, the Apple trees, all bloom buds as a rule, and those of the Hawthorn. They pick off the Peas as they appear above ground, also the Radishes, Lettuces, and many other things. I know this, for I have found this food in the crops of both old and young. For years and years they pecked off Apple blossoms and hundreds and hundreds of garden Primroses and Polyanthus, to say nothing of Crocus and other things, even to the bloom buds of the Lilac, besides which they drove away quantities of insect-eating birds. I know now of several places that used to have house martins nest about them, but the sparrows have driven them all away; and this last year I went to look, and the martins are there no longer, in places that I have known them to build nearly all my life, and where, when the sparrow clubs were in force, there were nests in plenty. What I want to know is, that in the face of all this, and from actual knowledge from many years of observation, why there are certain people who do not take half the trouble to be correct in the matter will persist in praising this pest of a bird (I speak of country life), and tell us, who after long experience (and who begin in favour of the birds) that we know nothing and are all wrong. And this also I know, and that is the fearful havoc the sparrows make in the half ripe and the ripe corn fields. I know the pest they are in the poultry yards, eating the food of the fowls and chickens, and the trouble they are in picking holes in the thatch of ricks and stacks. Over fifty years I have studied bird life, and I fearlessly say, that with the exception of the bullfinch, there is no bird that does so much injury to the gardener and farmer. The bullfinch only does harm in the spring, but the sparrow never ceases.

It is increasing vastly and to the detriment of better birds; some idea of the quantities of sparrows about the country may be formed when I mention that one bird catcher told me that in two months last autumn he caught *five hundred and four dozen*, and might have caught more had he cared to do so. *Harrison Weir, F.R.H.S.*

Peaches and Nectarines.—The instructive and interesting remarks on the above subject, from the able pen of Mr. Divers (p. 656), I cannot allow to pass without notice, for two reasons—1stly, I believe him to be a little misleading on one or two points, *i.e.*, when he considers Crimson Galande to be the best peach of the present day (but Mr. Divers puts in a reminder in his next sentence, that the flavour of his pet is not so good as many other varieties). Now, I should class flavour before all other considerations, especially when we can get that most essential commodity, combined with size of fruit, good looks, and constitution equally as good as Crimson Galande. From about twenty sorts that are grown in these gardens, they are classed for their superiority in the following order:—Alexandra Noblesse, Mignonne Grosse, Alexander, Dymond, Noblesse, Princess of Wales, Sea Eagle, and Crimson Galande comes in with Goshawk. I quite admit it is a most useful Peach, and no collection is complete without it, but lack of flavour is its principal drawback. Again, Mr. Divers says in reference to Sea Eagle, that, if forced early it has very little colour. We have a tree in our early house (which is a lean-to), and we find that the fruit comes of an excellent colour, and it is considered a most valuable addition to our list of this growing-favourite fruit. There is one other point in which I do not agree with Mr. Divers, viz., that Early Beatrice is preferable to Early Louise. I have this week taken out two trees of Early Beatrice and replaced them by Early Louise and Early Rivers, and one of the condemned trees was quite young and vigorous, the other, although much older, was a strong healthy tree, but the fruit was always small and the flavour anything but good. I advise all intending planters to fight shy of this variety. I find Mr. Divers has his doubts as to the distinctness of Alexandra and Waterloo; I think he might soon be convinced on that point if he grew them side by side, as we do here. There is at least a difference of ten days in the ripening of the fruit; the growth and habit of Waterloo are different to Alexandra, and it is a very shy bearer, whereas Alexandra is just the reverse. The cultural remarks and hints thrown out by Mr. Divers are instructive, and should be studied by all Peach growers, for it is from such practical men as Mr. Divers that inexperienced Peach growers gather much useful knowledge. *Alfred Bishop, Westley Hall, Bury St. Edmunds.*

Apple Lord Suffield.—It is a pity this fine early culinary Apple does not more generally succeed on all kinds of soil, as it is doubtful if there is in existence a better variety for early kitchen use. Here, where the soil is retentive and cold, the tree cankers badly, if the roots happen to get a bit deep in the soil; and even when planted on the surface, it does not take kindly to the soil. Not more than 3 miles from where I write, several hundred trees of it were planted with a view to profit, but they have fared badly, and are not likely to be a success. The planter erred in planting this variety in numbers, without first ascertaining if it was likely to succeed. In some districts round Liverpool, where the soil is light and rests on the red sandstone, the variety does capitally; in fact, in some gardens there is none better, the trees being chiefly grown on low stems and kept rather small—in some instances on account of want of space. It is for this reason that Lord Suffield Apple is so highly prized by those who have to get good results from a small amount of ground. *E.*

Cobbler's Heal (p. 735).—I think you are quite right in surmising that this name for a plant is non-existent in ordinary works of reference. There is, however, "All Heal, or Clown's Wound Wart," in Gerard, these names referring to Stachys palustris, a very near ally if not the same plant as the Chinese S. Sieboldi or tuberifera. Then it is related (see Johnson's edition, p. 1006), that within twenty days, a most wonderful cure was made of "a shoomaker's servant in Holborne," who had cut his throat badly, and otherwise injured himself. Now it

is quite probable that the term "Cobbler's Heal" originated with some one who heard or read of the above cure. I do not assert that such is a fact, but the above connection is a possible one, at any rate. Johnson's account and figure of Stachys palustris are both very interesting, the latter showing the tubers pretty well, although the author kindly says that "by the carver's fault they are not altogether so exquisitely expreat as I intended." "Cobbler's Heal" might possibly also refer to the use of cobbler's wax, as a rustic remedy for cuts, thorns in the flesh, &c. *F. W. Burbidge.*

ROSE SPORTS.—Your correspondent, "Wild Rose," has opened a very interesting subject to Rose growers. The question most interesting is, can it be encouraged? for surely some of the most recent sports are valuable additions to our lists, notably The Queen, Sir R. Hill, White Lady, &c., and if anything can be done to encourage the phenomenon, it is worth the trial. "Wild Rose" says he knows of no sports that are better than their parents; but I think I prefer a half-expanded Merveille de Lyon to a Baroness Rothschild; and the same might be said of The Bride, and Sunset. "Wild Rose" speaks of Madame C. Joigneaux as the parent of Pride of Reigate, but I think he will find the latter to have originated from Countess of Oxford. Perhaps he is thinking of Margaret Haywood. Some of our "national" men make much about "too-much-alike Roses," but here we have two of them sending out Margaret Haywood, as if there were no William Warden in existence; but if not identical they are very much alike, and both originated from the same parent. It would be a great boon to rosarians if some of our eminent scientific men would take the matter of sports into their consideration, and to give us their ideas upon the subject. There is one point connected with this subject which should be insisted on, and that is, no sport should be sent out unless clearly stated that it is a sport, so that one could be on the look-out for possible reversions, and avoid propagating from the latter. The sports should also be quite distinct. *Rosieriste.*

JAMS AT MESSRS. BEACH & SONS.—The exhibit of this firm at the last Royal Horticultural Society's meeting drew attention to an industry, the large development of which, since sugar became cheap, few people have any idea of. This firm, which began business in a very modest way at Brentford, where it still has quarters, has so progressed as to have grown into a colossal enterprise, and at the present day it has the enormous fruit plantations of Lord Sudeley, Toddington Park, near Cheltenham, Gloucestershire, some 500 or 600 acres in extent. Of very little use would it be to engage in fruit-farming without providing means for getting rid of surplus fruits; the means have assuredly been secured in the persons of Messrs. Beach, for from the orchards and factories near Cheltenham about £40,000 worth of jam and bottled fruit are turned out annually—and even with this big trade the demand exceeds the supply! As giving some idea of the labour employed in this industry, it may be mentioned that during the summer months some 220 women from the Black Country are engaged (very little male labour is employed), besides most of the women and girls in the neighbourhood, numbering between 500 and 600. Messrs. Beach were among the first to introduce the whole-fruit preserve for sale purposes, which has—so to speak—revolutionised fruit preserving in this country, and in the case of the Strawberry has produced a confection which, in its way, is perfection. Pond's Seedling Plum is largely used in this way. For the accommodation of this last-named fruit, a special wide-mouthed bottle has to be manufactured. Gooseberries and Currants are also preserved whole, and in consequence do not present that mashed appearance that most jams do. Only really sound fruit is made use of, and being preserved entire, the customer can readily see what he is purchasing. "In preserving," says Mr. Beach, "the sugar must go to the fruit, not the fruit to the sugar." *B.*

FUMIGATING INSECTICIDES.—I am obliged to "G. W." and L. Jordan for their kind suggestions, but they came too late, for I had, previously to seeing them, tried McDougall's self-acting tobacco sheets, and am glad to say that one fumigation has completely exterminated all my insect pests. The inventors state that one sheet should be used for every 1000 feet, and, as far as my experience goes, this is well within the mark, for I only used two of the tobacco-sheets, and although my house contains 2600 cubic feet, the destruction of insect life was complete. I may say that I fail to see any advantage in "G. W.'s" method of igniting the fumigating paste, which he advocates, as "burning paper," to my mind, is as bad as "red-hot cinders." *J. C. W.*

—— Your correspondent, "J. C. W.'s" remarks for December 6 (p. 669), who is directing attention to Campbell's Fumigating Insecticide, stating that it is necessary to employ "red-hot cinders," which is quite a mistake on his part, and misleading to many readers who have not tried it. This new fumigator is much superior to the ordinary tobacco-paper or rag, being more effectual, more simple, requiring less attention, and much safer to plant life. Red-hot cinders may be entirely dispensed with in its use, by carrying out the directions given on each roll. Should it by chance be stored in a damp room, or allowed to get wet in any way, then red-hot cinders may possibly be required to light it; but when used dry, as recommended, nothing more than to light the under end of the roll evenly with a match, and the results cannot fail to be satisfactory. *H. G. W.*

—— I have been much interested in the discussion in your columns on fumigating insecticides. Here we grow Azalea indica largely, and some of our plants are more than six feet through, and therefore bad to syringe sufficiently to keep thrips in check; moreover, it is impossible for us to confine our plants to one, two, or even three houses, and they consequently come in contact with many other kinds of plants with tender foliage—Vines in particular. I tried every kind of fumigating material, but nothing did the work effectually, and that sometimes caused considerable injury to the foliage of plants. For some years past I have used strong shag tobacco, the cost of which was trifling, and we fumigated only on dull quiet nights, and doing it twice we managed to destroy the insects for a time; in this way the foliage was uninjured. All this kind of fumigating was disagreeable to the operator, and of late I have used Campbell's fumigating insecticide, which is simple and easy in use, and I must say, very effectual, merely hanging the coil on the end of a stick stuck in a flower pot, and lighting the bottom end of it with a match, leaving it to itself to burn out. I cannot say that the fumes of the substance are pleasant to the operator who wishes to remain in the house, although it might suit opium smokers, for I think Mr. Campbell must have been among the Poppies for some ingredient that he employs in his insecticide. I used it in a house containing many Orchids, some of which were Lælias, coming into bloom without causing injury. My foreman, Harry Southgate, who has been among my plants hard on to ten years, is quite in ecstacies about this insecticide, and thinks his troubles in killing thrips and green-fly are ended, and he vows vengeance to the mealy-bug on our Gardenias. If he succeeds in destroying those, I shall be only too ready to write to you again. *William Culverwell, Thorpe Perrow.*

SCOTLAND.

NATURAL HISTORY SOCIETY OF ABERDEEN.

A meeting of the Aberdeen Natural History Society was held on Tuesday evening, 16th inst., in the University Buildings, Dr. Roy, president, occupying the chair. Dr. Trail (Professor of Botany, Aberdeen University) moved, "That the name of the society be altered to 'The Aberdeen Natural History and Antiquarian Society.'" In doing so, he referred to the speech of Principal Geddes, as one of a deputation from the New Spalding Club, on Monday, to the Aberdeen Town Council, in reference to a proposed new antiquarian museum in Aberdeen. It was not in any desire, Professor Trail said, to interfere with work already taken up that he had brought forward this motion. The New Spalding Club was a literary club of limited membership, and not meeting for the discussion of subjects that the Natural History Society did; and in taking up the subject of archæology, he held that they would not be interfering with, but supplementing the work of the Spalding Club. He was glad so see that the Town Council seemed to be favourable to the formation of an antiquarian museum in Aberdeen. It would be, he hoped, but the beginning of a wider scheme, leading up from natural history through archæology to museums where a knowledge could be gained of the arts and manufactures, and the application of scientific knowledge to industrial pursuits. This, as indicated in the will of the late Mr. Gray Chalmers (he took his information from the Press), might possibly be done. It was hardly creditable, he said, that a city like Aberdeen should lag behind those places in the North of Scotland mentioned by Principal Geddes in the matter of antiquarian collections and museums. Dr. Roy seconded the motion, which was unanimously agreed to.

A paper was then read by Dr. Roy, entitled "Notes, chiefly Botanical, relating to the Neighbourhood of Aboyne and Glen-Tannar." The paper, while dealing mainly with the botany of the districts mentioned, contained much interesting information regarding the old roads of that part of the country, and also dwelt upon the ancient battle remains, forts, &c., that were frequently to be met with. In connection with the botany of the Burn of the Vat, he read an account of the Battle of Culbleen, adapted rom *Wynton's Chronicles*, which show that in the time of David Bruce, in the fourteenth century, there were in that locality extensive Oak forests, but now, with the exception of a few solitary specimens, this tree had entirely disappeared from the district. At the conclusion of the paper, Dr. Roy was, on the motion of Professor Trail, heartily thanked for his able and instructive address.

Royal Horticultural Society of Aberdeen.

A meeting of the acting directors of this Society was held in the Secretary's office, Aberdeen, on Tuesday evening, the 16th inst.; Mr. Alexander Robson, vice-chairman, occupied the chair. It was agreed that the spring exhibition should be held in the Music Hall Buildings, Aberdeen, on April 10 and 11 next, and the annual floral *fête* in the Duthie Public Park on August 20, 21, and 22. The best thanks of the Society were voted to the Aberdeen Town Council for granting the use of the park, and for the handsome donation to the prize-list, which is divided over all the classes in the schedule. A list of donations to the prize fund of 1891 was submitted, and the donors cordially thanked. It was agreed to present a medal to Messrs. Shirras & Son, Schoolhill, Aberdeen, in recognition of the excellent manner in which the lighting and pyrotechnic display was conducted at last floral *fête*. The prize schedule for 1891 was revised so far, and the meeting concluded with a cordial vote of thanks to Mr. Robson for presiding.

North of Scotland Horticultural Association.

The monthly meeting was held in the Music Hall Buildings, Aberdeen, on Saturday evening last, when Mr. D. M. Smith, Stocket, presided. A paper on "The Nomenclature of Coniferæ" was read by Mr. C. S. France. There was a good discussion, and numerous questions were asked regarding the best and happiest coniferæ suited to the climate of Scotland, and those likely to make the best timber trees.

Aberdeen Seed and Nursery Trade.

The annual assembly of the members took place on Thursday evening, 18th inst., in the Royal Albert Hall, Aberdeen, when Mr. Hay, of Ben. Reid & Co., occupied the chair. There was a large and representative gathering, among those present being Mr. Robson (of W. Smith & Son), Mr. Darling (of Carduo & Darling), Mr. Johnstone (of C. & A. Johnstone), Mr. Cowe, West Coast Railway; Mr. Syme (of P. Lawson & Son, Edinburgh), and Mr. Bain, Edinburgh. The meeting was a very satisfactory one.

MR. BENNETT'S NURSERY.—We hear that Mr. Bennett's Rose nursery, near Shepperton, has passed into the hands of Mr. Roberts, late of Gunnershury, who will conduct it as an establishment for growing flowers for market.

Plant Notes.

LIBONIAS.

These handsome flowering greenhouse plants we find very valuable decoratively at this season; small plants in 60's and 48's are within the reach of all who possess a greenhouse. Cuttings may be struck during February and March, and grown along with bedding plants, or in any place having a genial degree of warmth, potting them as often as the roots touch the pot's side. In June they may be stood on ashes out-of-doors in full sunshine, and in six months plants of about 12 inches high may be obtained. They should not suffer for want of water during the summer, and as soon as the pots are filled with roots, some weak manure-water should be afforded them, housing them in October in a cool greenhouse, from whence they may be shifted into a warm one as desired. Larger plants are very attractive decorative subjects, requiring about the same kind of management as the young plants, with the exception that one potting annually is sufficient. The varieties best adapted for general purposes are L. floribunda, L. Penrhosiensis ×, and L. Penrhosiensis variegata. *W. A. Cook, Compton Bassett.*

Myrsiphyllum asparagoides.

Besides being useful decoratively, this climber is largely grown in some of our gardens, and in the United States. As a free-growing climber, it is deserving of a place in the conservatory on account of its general gracefulness more than for its flowers, which are small and globular. It is suitable for covering columns or rafters. The leaves, which have some resemblance to those of Ruscus androgynus, but thinner and darker and wavy, are good for associating with cut blooms. I find it does best potted or planted in three parts loam, some old mushroom bed dung, and sand. If the plants are wanted for cutting from, grow them in 48's, with single stem trained to green cotton in a warm, moist house. The stems soon reach the height of 6 feet, and a few may be grown to 12 feet. *A. E.*

Arundo donax.

This is one of the most ornamental of the reed-like grasses that anyone can grow, if placed in suitable positions, as it is almost, if not quite, equal to some of the Bamboos, sending up its stems to a height of from 12 to 15 feet, and giving a tropical appearance to the parts where it grows. Although this species of Arundo will grow almost anywhere in the warmer counties, it likes a deep, loose, warm, and moderately rich soil, and requires a fairly warm or sheltered situation; and under these favourable conditions it thrives and spreads fast, and sends up a great number of stems. The plants die down annually, or are best cut away during winter, so as to give room and scope for the fresh ones produced every spring, which become clothed from base to summit with broad and long Flag-like leaves. The readiest way of increasing the plant is by division in early spring, the crown being dug up and cut into as many pieces as may be desired, using a sharp-edged spade in doing so. *J. Sheppard.*

[A. d. versicolor is smaller than the type, but much to be preferred to it for garden purposes. It needs winter protection about the roots, or it may be dug up and wintered in frames, either in pots or otherwise. A. conspicua, a plant of a dense habit of growth, with long curling leaves of a tough consistency, and long slender culms, is well worthy of being grown in the warmer parts of the country. In others it stands in need of winter protection, and is on that account not so good a lawn plant. Ed.]

Sibthorpia Europæa variegata.

This pretty form of the Cornish Moneywort is not nearly so often met with in gardens as its merits would warrant. As is well known, this variety is, under ordinary circumstances and conditions, rather apt to damp off when grown out-of-doors, and therefore most people who grow the thing keep it more or less under glass, but then matters are not always so satisfactory as could be wished, the plant being sensitive to variations of heat, air, and moisture, extremes of which soon give it a rusty, faded look. The most suitable places to grow it in are such as a cool frame, cool fernery, or a cool Orchid-house, and near the glass, where it can get a fair share of light and air; in such a position we have often grown it very satisfactorily. We propagated it by breaking up the old plants into little bits, planting them thickly in shallow pans, which were previously filled with light, peaty compost, finishing with a good watering, and afterwards keeping them uniformly moist, when in a surprisingly short space of time beautiful little mats of its slender, creeping silver and green-leaved shoots were produced.

Recently at Powfoulis, Stirlingshire, we saw this plant used in a rather novel and effective manner. It was planted amongst the sphagnum on the surface of the pots, in which cool Orchids, such as Odontoglossums, were growing. They, as far as I could judge, did not seem any the worse for it, being just as vigorous as those without it. The conditions evidently suited the requirements of the Sibthorpia, which had a graceful and pleasing effect, especially that planted in hanging-baskets. *F. R.*

MALFORMED WALNUT.

From Mr. William Paul we have received a Walnut presenting the appearance represented in our cut (fig. 154). The botanical interest of the specimen is

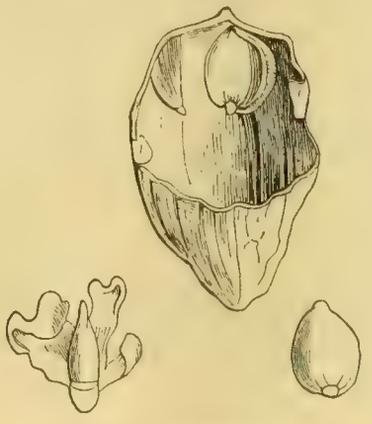


Fig. 154.—A malformed walnut.

great, and was commented on by the late Mr. Berkeley, in our columns so long ago as 1858, p. 5.

TEA AND COFFEE SUBSTITUTES.

So long ago as 1883, I contributed to the *Gardeners' Chronicle* a few notes under the head of "Tea and its Substitutes." These notes appeared on pp. 802—3 in the number of June 23, vol. xix., new series, and on pp. 765—6 in the number for December 15, vol. xx, new series. What was there stated as to the interest of the subject might be repeated here, notwithstanding that seven years have passed since those notes were written, during which time many more plants have come to my notice having similar uses in different parts of the world.

Many changes have taken place in the growth, cultivation, and trade of tea proper during the seven years that have elapsed, and other countries have entered the market as tea producers since that period, the demand for the dried leaves of Camellia theifera increasing with the supply. The return of Christmas, when an extra good cup of tea is often included amongst the items of good cheer, seems an appropriate time to return to this subject, not that we think any of those plants to be enumerated would commend themselves for actual use amongst the bulk of our readers, but a record of them will indicate how varied are the sources from whence a refreshing—or, in some cases, it may be a medicinal—beverage is obtained.

Twenty-four distinct plants were described in the former notes, and they were arranged under their respective natural orders. The same arrangement is continued in the following notes, and the numbering taken up from thence.

Berbericeæ.

25. *Caulophyllum thalictroides,* Michx.—A perennial herbaceous plant, with a tuberous root, and stems about 1 foot. It is found in mountainous shady woods in South Carolina, where it is known as Blue Cohosh. The plant also occurs in Japan and Mandschuria. The seeds, when roasted, are said to form an excellent substitute for coffee, for which purpose they are used by the natives in North America.

Frankeniaceæ.

26. *Frankenia* (*Beatsonia portulacifolia,* Roxb.).—This is one of the few indigenous plants in the Island of St. Helena, and the genus was named in honour of Beatson, who wrote an account of St. Helena. It is found on rocks by the sea on the south side of the island. The flowers and flower-stalks, when simply dried, are of a brownish colour, and are known as St. Helena tea. There is a sample of this tea in the Kew Museum which was gathered in 1868, and still possesses a strong aroma similar to Chinese tea.

Geraniaceæ.

27. *Geranium incanum,* L.—A plant with trailing stems. Native of the Cape of Good Hope. In Natal the leaves are used as tea under the name of Natal Wild Tea. There is a sample in the Kew Museum, which was obtained from the Natal Court of the Colonial and Indian Exhibition of 1886, and it possesses a smell not very dissimilar to that of ordinary tea. There is a sample of this in the Kew Museum.

28. *Monsonia ovata,* Cav.—An herbaceous plant of the Cape of Good Hope, where it is known under the name of *Keita* by the Hottentots. The roots and herbs of the plant are very astringent, and are used at the Cape in dysentery; an infusion or tea is made from them, used among the Fingoes to promote abortion.

Leguminosæ.

29. *Sesbania occidentalis,* Pas.—In the Kew collection is a sample of the long slender pods of the above-named plant, gathered on the banks of the River Magdalena, and labelled "Wild Coffee, Café de Brusca or Chilinchile."

30. *Abrus precatorius,* L.—This well-known plant, which is found in nearly all tropical countries, and whose seeds are so generally known as crab's eyes, appears at one time to have had a reputation as a tea plant, for Lunan in his *Hortus Jamaicensis,* quoting from Beecham, says:—"I know a gentlemen in Jamaica that made a tea of the leaves, and drank of it many years, which he said kept him in good health."

31. *Cassia mimosoides,* L.—This plant is referred to in a list of economic vegetable products exhibited in the Cape of Good Hope collection of the Colonial and Indian Exhibition, 1886, as being used at the Cape as a substitute for China tea, under the name of Bushman's or Hottentot tea.

32. *Acacia myrtifolia,* Willd.—A tall, glabrous shrub of New South Wales, Victoria, Tasmania, and South and West Australia. The leaves are said to be sometimes used as tea.

Amongst other leguminous plants, reference may be made to Psoralea grandulosa, which, however, was referred to in our notes in December, 1883. In addition to what is there stated, it may be said that in the Mauritius the plant has not only a medicinal reputation, but is also used as a substitute for Tea. It appears, further, to have been at one time an article of import to this country, judging from a note by Tweedie in the Kew Herbarium.

where it is said that the plant was "good for disorders of the stomach," and that "large quantities were carried to England and sold as Radical Tea in the Radical Times."

Two other leguminous plants have recently been used in France in the composition of medicinal teas, under the names of "Thé des Alpes Maritimes," and "Thé Purgatif des Apennins." The first is a composition of broken leaves of a plant which cannot be identified, a few Senna leaves, and a free use of the flowers of Anthyllis vulneraria, and perhaps Colutea arborescens; the second contains a larger proportion of Senna leaves, flowers of Anthyllis vulneraria, and florets of Centaurea cyanus. Whether these flowers possess any direct properties in themselves, or are put in to improve the appearance of the so-called tea, or increase its bulk, is a question not easy to solve.

ROSACEÆ.

33. *Acæna sanguisorbæ*, Valet. — A native of Australia, and found in all the colonies except Western Australia. Maiden, in his *Useful Native Plants of Australia*, says:—"The leaves of this plant have been used as a substitute for tea, and have been highly spoken of by some for this purpose."

34. *Rosa canina*, L. (Dog-rose).—Of this well-known plant, Sowerby says, in his *Useful Plants of Great Britain*, that the leaves have been used as a substitute for tea.

SAXIFRAGEÆ.

35. *Saxifraga crassifolia*.—Under the name of Mongolian tea, the leaves of this plant are said to be used by the people of Siberia.

MYRTACEÆ.

36. *Verticordia pennigera*, Endl.—Under the name of native Tea, the flowers and leaves of this plant were shown in the West Australian Court of the Colonial and Indian Exhibition in 1886, with a note to the effect that the taste was not unlike that of ordinary tea, and that the settlers in the earlier days of the colony used it as a tonic and blood purifier. There is a sample of this in the Kew Museum, which has a faint smell of Chinese tea.

37. *Kunzia Muelleri*, Benth.—The dried leaves of this plant, which have a similar smell to the last-named, were likewise shown in the West Australian collection in 1886, where they were simply described as native Tea, possessing the same medicinal properties as the Verticordia.

MELASTOMACEÆ.

38. *Cremanium theezans*, D. C. — This genus is now placed by the authors of the *Genera Plantarum* under Miconia. It is a tree from 12 to 20 feet high, a native of damp places about Popayan, where the leaves are infused and drank in place of tea by the inhabitants. Boupland says: "We have often drunk with pleasure the infusion of the Melastoma theezans. It has the colour of tea, and is much less astringent, but more aromatic; many persons would doubtless prefer the drink to tea, and I think it will be found as useful in most cases."

TURNERACEÆ.

39. *Triacis microphylla*, Griseb., which is now put into the genus Turnera, is said to be used in Hayti as a tea plant, under the name of Thé de Lasca hobas. A small sample of this tea is contained in the Kew Museum. *J. R. Jackson, Kew.*

(To be continued.)

THE APIARY.

Bees have now been several weeks confined to their winter quarters, and there is every appearance that they will be so confined for several weeks more. No interference whatever must take place now, and they must be entirely left alone. In this part of Wiltshire there has been very little snow. In all cases, snow should be cleared off the roofs of hives, as, if allowed to remain, it is almost sure to penetrate, somehow or other. If you wish to remove hives to some other part of the garden, advantage should be taken of the bees being at rest to do it. When bees have been in their hives some time, and they are likely to be there some time longer, is the safest time, as they are sure to mark the spot when they come out again, and begin to fly generally. It is hardly necessary to remind intelligent readers of the *Gardeners' Chronicle* that if bees are to be removed, the neighbourhood of fruit trees is a good place to put them in. It has over and over again been proved that if they are so placed, both the honey-take and the fruit crops are improved. This is the case, not only with such fruit as Apples and Pears, but also softer fruits. Some persons—some who ought to know better—say that bees injure fruit. They have been accused of it over and over again, but have never been convicted. The truth seems to be, that wasps make a puncture in the fruit, and then bees, true to their instinct, come and suck as well; but wasps are the first transgressors, as bees have not the power of puncturing fruit. It is the same with many flowers. The ordinary hive-bee frequently follows in the wake of other insects, such as the bumble-bee, &c., and commences to get out the honey after the other insects have punctured the flower. I am aware this is delicate ground, and there are those who think differently, but the bulk of persons who have studied the matter with regard to bees are on my side. There can be no doubt, however, about the advantage of placing hives of bees near to fruit trees. It has been tried on a large scale by Lord Sudeley and many others, and also on a smaller scale by a still greater number, but in all cases with marked success. *Agnes.*

MARKETS.

COVENT GARDEN, December 23.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. ED.]

Owing to the foggy weather our market has suffered, and it has been cleared without any advance in prices. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	3 6	7 0	Lemons, per case	20 0	40 0
— Nova Scotia, brl.	15 0	25 0	Melons, each	0 6	2 0
Cobs, Kent, 100 lb.	65 0	70 0	Pine-app'es, St. Michael, each	2 0	8 0
Grapes, lb.	0 9	3 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, each	0 4	0 6	Lettuces, per dozen	1 6	...
Beans, French, lb.	1 0	...	Mushrooms, punnet	2 0	...
Beet, red, per dozen	2 0	3 0	Mustard and Cress, punnet	0 4	...
Carrots, per bunch	0 6	...	Parsley, per bunch	0 4	...
Cauliflowers, each	0 4	0 6	Shallots, per lb.	0 6	...
Celery, per bundle	1 6	2 6	Spinach, per bushel	3 0	...
Cucumbers, each	0 4	0 6	Tomatos, per lb.	0 9	1 0
Endive, per dozen	2 0	...	Turnips, per bunch	0 4	...
Herbs, per bunch	0 4	...			

POTATOS.—Supply of best Potatos rather short, from 5s. to 10s. increase, and ordinary samples, 5s. increase, but during holidays expect trade to be quiet.—*J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Evergreens, in var., per dozen	6 0	24 0
Aspidistra, doz.	18 0	42 0	Ferns, in var., per dozen	4 0	18 0
— speci. plants, each	7 6	10 6	Ficus elastica, each	1 6	7 0
Bouvardias, p. doz.	9 0	18 0	Foliage plants, various, each	2 0	10 0
Chrsanthem., p. doz.	4 0	18 0	Hyacinths, per doz.	10 0	12 0
— specimen plants, each	2 6	5 0	— Roman, per doz.	9 0	12 0
Cyclamens, dozen	9 0	18 0	Marguerites, doz.	6 0	12 0
Cyperus, per dozen	4 0	12 0	Mignonette, per doz.	4 0	6 0
Dracæna terminalis, per dozen	30 0	60 0	Palms in variety, each	2 6	21 0
— viridis, per doz.	12 0	24 0	Poinsettias, dozen	9 0	15 0
Euonymus, in var., per dozen	6 0	18 0	Solanums, per doz.	9 0	15 0
Ericas, various, doz.	8 0	18 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Bouvardias, per bun.	0 6	1 0	Pelargoniums, scarlet, 12 spr.	0 9	1 6
Callæthiopica, 12 bl.	9 0	18 0	— dozen sprays	1 0	1 6
Carnations, 12 blms.	1 0	3 0	Poinsettias, 12 blms.	4 0	12 0
Chrysanth., 12 bun.	3 0	12 0	Primulas, double, 12 sprays	0 6	1 0
— 12 blooms	2 0	6 0	Roses, Tea, per doz.	1 0	4 0
Cyclamens, per doz.	0 3	0 6	— coloured, dozen	3 0	5 0
Eucharis, per dozen	6 0	12 0	— red, per dozen	3 0	6 0
Gardenias, 12 blooms	6 0	9 0	— Safrano, French, per box of 100	3 0	6 0
Heliotropes, 12 spr.	0 6	1 0	— ditto, per dozen	1 0	2 0
Hyacinths, Rom., 12 sprays	1 0	1 6	Stephanotis, per 12 sprays	9 0	12 0
Lilium, var., 12 bl.	2 0	6 0	Tuberoses, 12 blms.	1 0	2 0
Maiden Hair Fern, 12 bunches	4 0	9 0	Violets, 12 bun.	1 0	3 0
Marguerites, 12 bun.	3 0	6 0	— Parme, Fr., bun.	5 0	8 0
Narcissus (paper white), 12 sprays	1 0	2 0	— dark, Fr., bun	2 0	4 0
— French, 12 bun.	4 0	9 0			
Mignonette, 12 bun.	2 0	4 0			

ORCHID-BLOOM in variety.

SEEDS.

LONDON: *Dec.* 22.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that quite a holiday spirit, as might be expected, has now taken possession of the seed markets, and, excepting for a few dealings in Alsyke, there is scarcely anything doing. As regards the leading article of Red Clover seed, the position for the ensuing season is statistically strong, and this country as well as the Continent, will have to import from America. Koenigsberg Tares, having apparently touched bottom prices, attract increased attention. In Mustard and Rapeseed former rates are steadily maintained. Haricots and Peas are held for full prices. With respect to Canary and Hempseed, the tendency of quotations is upwards. Buckwheat, Dari, and Linseed are firm.

CORN.

Averages.—Official statement of the average prices of British corn, imperial measure, for the week ending December 20, and for the corresponding period last year:—1890: Wheat, 32*s.* 4*d.*; Barley, 28*s.* 8*d.*; Oats, 17*s.* 6*d.* 1889: Wheat, 30*s.* 1*d.*; Barley, 30*s.* 4*d.*; Oats, 18*s.* 2*d.*

FRUIT AND VEGETABLES.

SPITALFIELDS: *December* 20.—Green vegetables and Potatos scarce owing to inclement weather; demand good. Fruit trade fair. Prices were as follows:—English Apples, 4*s.* to 9*s.* per bushel; American Apples, 16*s.* to 24*s.* per barrel; Pears, 3*s.* to 7*s.* per half-sieve; English Tomatos, 6*s.* to 7*s.* 6*d.* per peck; Cauliflowers, 2*s.* 6*d.* to 4*s.* per dozen; Cabbages, 3*s.* to 6*s.* 6*d.* per tally; Savoys, 3*s.* to 5*s.* 6*d.* do.; Curly Kale, 1*s.* 6*d.* to 2*s.* 6*d.* per bushel; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Spinach, 1*s.* 6*d.* to 3*s.* per bushel; Brussels Sprouts, 2*s.* to 3*s.* 6*d.* per half-sieve; Turnip Tops, 1*s.* 6*d.* to 3*s.* per sack; Greens, 3*s.* 6*d.* to 7*s.* 6*d.* per dozen bunches; Turnips, 2*s.* to 4*s.* do.; Carrots, 2*s.* 6*d.* to 4*s.* do.; Parsley, 3*s.* to 6*s.* do.; Celery, 6*d.* to 1*s.* 2*d.* per bundle; Horse-radish, 1*s.* 2*d.* to 1*s.* 4*d.* do.; Endive, 1*s.* 6*d.* to 2*s.* per dozen; Cabbage Lettuces, 1*s.* 6*d.* to 2*s.* do.; Mustard and Cress, 1*s.* 6*d.* to 2*s.* per dozen baskets; Leeks, 1*s.* 9*d.* to 2*s.* per dozen; Parsnips, 1*s.* to 1*s.* 6*d.* per score; Beetroots, 3*d.* to 6*d.* per dozen; English Onions, 5*s.* to 5*s.* 6*d.* per cwt.; Spanish do., 7*s.* 6*d.* to 9*s.* per case; Dutch do., 3*s.* 6*d.* to 5*s.* per bag of 110 lb.; Belgian do., 3*s.* 6*d.* to 4*s.* 6*d.* do.; Carrots, 25*s.* to 55*s.* per ton.

POTATOS.

BOROUGH AND SPITALFIELDS.—Latest quotations:—Magnums, 55*s.* to 90*s.*; Scotch, 90*s.* to 120*s.*; Regents, 60*s.* to 80*s.*; Champions, 60*s.* to 70*s.*; Imperators, 60*s.* to 90*s.*; Hebrons, 60*s.* to 100*s.* per ton.

HAY.

Averages.—The following are the averages of the prices up to the date of going to press:—Clover, prime, 80*s.* to 102*s.* 6*d.*; inferior, do., 46*s.* to 75*s.*; hay, best, 60*s.* to 87*s.*; inferior, do., 26*s.* to 50*s.*; and straw, 24*s.* to 38*s.* per ton.

NOTICES TO CORRESPONDENTS.

FLOWERING OF DRACÆNA AUSTRALIS: *J. M.* It is not uncommon in aged plants if grown warmly.

GOLDEN QUEEN HOLLY: *Young Nurseryman.* Do not waste your time in striking this plant from cuttings—always a slow job; but bud them, if for bushes, low down on the stems of well-established young common Holly. The time to do so is when the current year's buds are well developed—say August, or a little later in your district. If standards are wanted, use the common Holly for the stem and bud at any desired height. Bud as for Roses, or take out a small square or oblong patch of the bark, fitting the bud-shield accurately into the hole. If the leaf-stalks do not fall off at the slightest touch at the end of twenty days, bud again without loss of time. The Holly does best in loam overlying chalk or limestone; and permanent stations for trees should be deeply moved, and well manured. Young stock will pay for doing well. The plants may be transplanted every second or third year, as may seem necessary, and stood at wider distances apart.

NAMES OF PLANTS: *T. W. B.* Probably Cupressus glauca, *alias* C. lusitanica; but we cannot be sure from the specimen sent.—*B. H. Willett.* Euonymus europæus.—*D. Lord.* Odontoglossum tripudians.—*T. H. S.* Lælia albida.

NITRATE OF SODA: In answer to several correspondents, we may say that the pamphlet we recently referred to may be had from Mr. Joseph Harris, Moreton Farm, Monroe County, New York, price 10 cents.

STACHYS TUBERIFERA: *J. M.* The culinary treatment is similar to that employed with Jerusalem Artichokes—they are like them in flavour, and make excellent soup.

TOMATO-HOUSE: *Quandary.* A good dressing of nitrate of soda or of quick-lime dug into the borders might have good effect, but a better one would be to take out the soil, and char it, returning some of it to the house, with the addition of fresh loamy soil, unaffected with fungus. Do not use solid manure in large quantity; rather afford manure in a liquid form when the plants stand in need of it. Use mild sulphur washes early in the year, and also lime and sulphur, in the form of paint, on the hot-water pipes, not waiting till there are signs of the old enemy being about. Let the air lean to the warm and dry side, rather than to the warm, humid one. This will secure firmness in the texture of leaf and stem, and afford as much air as possible, as may be consistent with the end in view. Do not make a basin round each plant, as is commonly done, but elevate the rootstock somewhat; do not let the plants have much root-run, and, above all things, have the drainage of the borders made thoroughly good. Transplant or root-prune them if growth under the above conditions should be very succulent and rapid.

WEEPING TREE: *W. M.* See our number for May 10, 1890.

CATALOGUES RECEIVED.

JOHN LAING & SONS, Forest Hill, S.E. — Seeds, Begonias, &c.

DICKSON & ROBINSON, 12, Old Millgate, Manchester—Seeds.

WEBB & SONS, Wordsley, near Stourbridge — Spring Catalogue for 1891.

COOPER, TABER & Co., '90, Southwark Street, London, S.E.—Wholesale Seed List.

BROWN & WILSON, 10, Market Place, Manchester—Garden Seeds.

FREDERICK GEE, Riverford House, Biggleswade, Bedfordshire—Seeds and Plants.

SUTTON & SONS, Reading—Amateurs' Guide for 1891.

W. WATT, Cupar and Perth, N.B.—Trees.

COMMUNICATIONS RECEIVED.—Heinemann, Erfurt.—L. C. (no thanks were needed).—H. J. C.—F. W. B.—A. J. M.—Right Hon. T. H.—J. C.—R. T. C.—A. B. R.—R. D.—G. H. Viscondo de St. Leger, Rio Janeiro.—C. M. M.—H. A. H., Weener.—E. H. M.—C. A. F.—F. W.—Professor Cornu, Paris.—Professor Henreicher, Innsbruck.—C. P. D.—Ed. André, Paris.—D. T. F.—Professor Sorauer, Proskau.—C. Gill.—Expert.—J. J. W.—A. G. C.—E. Fison.—D. C. P. (too late for insertion).—H. S.—H. A. B., New York.—A. W.—J. Clayton.—R. D.—J. B. W.—E.—J. S.—R. A. R.—H. A. D.—E. C.—T. B.—Sutton & Sons.—W. K.—J. C. W.—C. J. Waite.

Notice to Advertisers.

THE GARDENERS' CHRONICLE

FOR

SATURDAY NEXT, JAN. 3, 1891,

WILL CONTAIN AS A

SUPPLEMENT

A

Sheet Almanac.

As a large EXTRA circulation of this Number is guaranteed, it will be a very valuable medium for Advertisements.

☞ *Advertisers desirous of securing Space in this Number are requested to communicate with the Publisher, not later than DEC.* 31.

W. RICHARDS,

41, WELLINGTON STREET, STRAND,

LONDON, W.C.

CHRYSANTHEMUM SEASON.

STANDEN'S

Established Nearly 30 Years. **MANURE.**

It is now generally acknowledged that this highly concentrated Manure exceeds all others in general fertilizing properties and staying powers, thus rendering its money value at least double that of other Manures.

More prizes have been obtained through the use of this Manure by Chrysanthemum exhibitors than by any other Fertilizer.

It promotes a rapid, healthy, and robust growth to plants generally.

It is a clean and dry Powder, with very little smell.

It is consequently particularly adaptable for Amateurs, equally with Nurserymen.

VOLUNTARY TESTIMONIALS,
the originals of which can be seen if desired:—

MESSRS. CORRY, SOPER, FOWLER & CO.,
"Fareham.

"SIRS,—We have used Standen's Manure for Chrysanthemums, mixed with the mould, when potting their last shift, and an occasional sprinkle over the top of the pots during their growth, especially just before the bud shows. We took last season thirty-one First Prizes, Silver Cup at Portsmouth, £25 Silver Cup, Devizes, and £10. We can highly recommend it for plants, especially Roses, Pelargoniums, Azaleas, Gardenias, and Stephanotis. Our Stephanotis this season we can pick by the gallon, from six to eight pips on each spray."

(Signed) W. & G. DROVER.

"We have used Standen's Manure for some years, and have never found any fertilizer so safe and valuable. Its action is literally 'magical.' We have tried it on unhealthy plants which seemed past recovery, and it has restored them to their natural vigour. However valuable other fertilizers may be, none can be compared to this. Camellias grown in the same pots *for ten years* are as healthy as if just repotted."

C. M. HOVEY, Boston, U.S.A.

Sold in Tins of increased sizes—6d., 1s., 2s. 6d., and 5s. 6d. each.

And in Kegs (free), at the following greatly reduced prices:—28 lb., 10s. 6d.; 56 lb., 18s.; 112 lb., 32s.

SOLE MANUFACTURERS:

CORRY, SOPER, FOWLER & CO.

(LIMITED), LONDON.

Sold by all Nurserymen, Seedsmen, and Florists.

Great Reduction in Price of

LETHORION

(VAPOUR CONE).



Nothing can surpass this method for the total destruction of Insect Pests in Greenhouses. It CANNOT fail where the houses are secure. No possible injury to the most delicate plant.

PRICES—For Frames, &c., of 50 cubic feet, 6*d.*; 100 feet, 9*d.*; 500 feet, 1*s.*; 1000 feet, 1*s.* 6*d.*; 4000 feet, 5*s.* each.

Owing to the enormous demand, intending users should give their Seedsmen Early Orders to secure a supply.

MANUFACTURERS:—

CORRY, SOPER, FOWLER & CO.

(Limited), LONDON.

TO BE OBTAINED OF ALL SEEDSMEN.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE,

4d. per bushel; 100 for **25s.**; truck (loose, about 2 tons), **40s.**; 4-bushel bags, **4d.** each.

LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; **5** sacks, **25s.**; sacks, **4d.** each.

BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, **22s.**; sacks, **4d.** each.

COARSE SILVER SAND, 1s. 9d. per bushel; **15s.** per half ton; **26s.** per ton, in 2-bushel bags, **4d.** each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.

SPHAGNUM MOSS, 8s. 6d. per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—**H. G. SMYTH,** F.R.H.S., 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

ORCHID PEAT, best quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. **RHODODENDRON and AZALEA PEAT.** Samples and Prices to WALKER AND CO., Farnborough, Hants.

FREDERICK L. MAY & CO.,

(PUBLISHERS OF MAY'S PRESS GUIDE,)

ADVERTISING AGENTS.

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RECEIVE ADVERTISEMENTS for all London, Provincial, Continental, Colonial, and American Newspapers and other Publications, for one or any number of insertions, and are prepared to open accounts with Solicitors, Auctioneers, and others on approval of references.

Special advantages to Large Advertisers.

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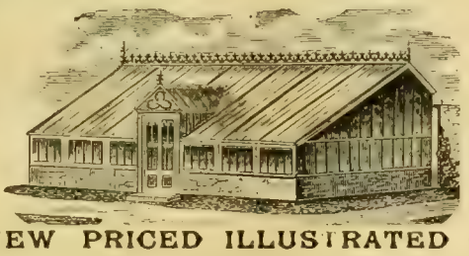
55, LIONEL STREET, BIRMINGHAM.

HENRY HOPE

HORTICULTURAL BUILDER and HEATING ENGINEER.

NEW CATALOGUE

of Greenhouses & Garden Frames, just issued, will be sent, post-free, to any address, on reference to this advertisement.



NEW CATALOGUE

of Greenhouses & Garden Frames, just issued will be sent, post-free, to any address, on reference to this advertisement.

SEND FOR NEW PRICED ILLUSTRATED CATALOGUE.



THE GARDENERS' CHRONICLE FORM OF SUBSCRIPTION.

FROM _____

_____

_____

TO

W. RICHARDS,

41, Wellington Street, Strand,

LONDON, W.C.

_____ 1890.

Please send me "THE GARDENERS' CHRONICLE" *for* _____ *Months,*

commencing _____, *for which I enclose P.O.O.* _____.

☞ **Please Note that all Copies sent Direct from this Office must be paid for in advance.** ☜

THE UNITED KINGDOM:—12 Months, 15s.; 6 Months, 7s. 6d.; 3 Months, 3s. 9d.; Post-free.

FOREIGN SUBSCRIPTIONS (excepting India and China):—Including Postage, 17s. 6d. for 12 Months. India and China, 19s. 6d.

Receipts for less than six months' subscription will not be sent unless specially asked for.

P.O.O. to be made payable at the Post Office,

No. 42, DRURY LANE, London, to W. RICHARDS.

Cheques should be crossed "DRUMMOND."

G. C., Dec. 27, 1890

GARDEN REQUISITES.

TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)

COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. 4d. each; 10 sacks, 12s. 6d.; 15 sacks, 17s. 6d., 20 sacks, 20s.; 25 sacks, 24s.; 30 sacks, 27s.; 40 sacks, 35s.; 50 sacks, 40s.; Truck-load, loose, free on rail, 30s. Limited quantities of G., special quality, granulated in sacks only, 2s. 6d. each

GENUINE ORCHID PEAT, 8s. 6d. per sack; 5 sacks, 40s.; BEST BROWN FIBROUS PEAT, 5s. per sack; 5 for 22s. 6d. BLACK FIBROUS PEAT, 4s. 6d. per sack; 5 for 20s. COARSE SILVER SAND, 1s. 6d. per bushel; 14s. half ton; 24s. per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1s. per bushel. Chrysanthemum Compost, 1s. 6d. per bushel; 4s. per sack. Tobacco Cloth or Paper, 1s. per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, &c., &c.

RUSSIA MATS:—	Per bund. of 10.	Per bund. of 25.	Per bund. of 100.
ARCHANGEL... ...	16/-	40/-	140/-
No. 1, Heavy	9/-	20/6	80/-
,, 2, ,, ...	7/6	17/-	65/-
,, 3, Light	6,9	15/6	60/-

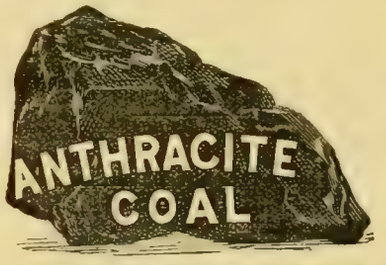
We strongly recommend our No. 1 Heavy for strength and durability. Write for Price List.

Terms strictly Cash with order.

CHUBB, ROUND & CO., West Ferry Road, Millwall, London, E. *Bankers—Smith, Payne, & Smiths.*

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s., from the Trade, Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.



The Best and Cheapest Fuel for Greenhouse Boilers, Stoves, and Heating Apparatus.

HENDREFORGAN ANTHRACITE SMOKELESS COAL.—The UNITED ANTHRACITE COLLIERIES (Limited) supply their Nut or Cobble Coal (the Nuts being about the size of a Walnut, and the Cobbles about the size of a man's fist), delivered in truckloads to any railway station. This coal is ABSOLUTELY SMOKELESS, and it requires much less attention than any other description of fuel, burning for twelve hours AT LEAST without any supervision, and giving from five to ten degrees more heat than coke. Quotations can be had on application to the Company's Offices, 23, Lime Street, London, E.C.

Quotations for London delivery can be obtained for the Northern, Western, and South-Western districts, from Messrs. G. R. CARTER AND SON, Coal Exchange, E.C.; and for the South-Eastern district, from Messrs. W. DOWELL AND CO., Coal Merchants, Greenwich, S.E.



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Prices and Illustrated List

DIRECT TO

THE LONGFORD WIRE CO.

(LIMITED),

WARRINGTON.

To Nurserymen, Seed Merchants, and Florists.

J. BLACKBURN AND SONS are offering Archangel Mats lower than any other house in the trade; also Petersburg Mats, and Mat Bags, Raffia Fibre, Tobacco Paper, and Shading. Prices free.—4 and 5, Wormwood Street, E.C.

Send for Present Price of Pascoe's Celebrated

"DIAMOND" ANTHRACITE HORT. COAL,

delivered at all available Railway Stations.

Sample Bag sent free of cost.

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Patronised by 16,000 of the Nobility, Gentry, and Clergy, for all kinds of

OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames, &c.

1 Cwt., and Oil Mixture, Free to all Stations.

Liquid Non-Poisonous Paints for Inside of Conservatories, &c. Prices, Patterns, and Testimonials, Post-free.

1A BELLE SAUVAGE YARD, LUDGATE HILL, E.C.

BACHELOR'S WALK, DUBLIN.—*Discount for Cash.*

THE GARDENERS' CHRONICLE

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4	Lines ..	£0	3	0	15	Lines ..	£0	8	6
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7	,, ..	0	4	6	18	,, ..	0	10	0
8	,, ..	0	5	0	19	,, ..	0	10	6
9	,, ..	0	5	6	20	,, ..	0	11	0
10	,, ..	0	6	0	21	,, ..	0	11	6
11	,, ..	0	6	6	22	,, ..	0	12	0
12	,, ..	0	7	0	23	,, ..	0	12	6
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AND SIXPENCE FOR EVERY ADDITIONAL LINE.

If set across two Columns, the lowest charge will be 20*s*.
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Page, £8; Half Page, £4 10*s*.; Column, £3.

Gardeners and others Wanting Situations.
26 words, including name and address, 1*s*. 6*d*.,
and 6*d*. for every additional line (about 9 words) or part of a line.
THESE ADVERTISEMENTS MUST BE PREPAID.
This scale does not apply to announcements of Vacant Situations, which are charged at the ordinary scale.

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BIRTHS, DEATHS and MARRIAGES, 5*s*. each insertion.
Advertisements for the current week MUST *reach the Office by Thursday noon.*

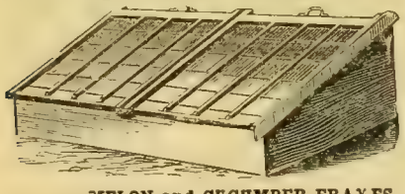
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THE UNITED KINGDOM: 12 Months, 15*s*.; 6 Months, 7*s*. 6*d*.; 3 Months, 3*s*. 9*d*.
FOREIGN (excepting India and China), including Postage, 17*s*. 6*d*. for 12 Months; India and China, 19*s*. 6*d*.
Post-office Orders to be made payable at the Post Office, 42, DRURY LANE, W.C., to W. RICHARDS.

PUBLISHING OFFICE and OFFICE for ADVERTISEMENTS,
41, Wellington Street, Strand, London, W.C.

JAS. SENDALL & CO.,
HORTICULTURAL BUILDERS, CAMBRIDGE.

New Catalogue of Garden Frames now ready, post free



Only Best Quality Made.

MELON and CUCUMBER FRAMES.

These Frames are made of good red wood deal, well seasoned, 1½ inch thick, with our improved corners. The Lights are 2 inches thick, with iron cross-bar and handle. Painted three times, glazed, ready for use, with 21-oz. English glass. Stocked in the following useful sizes:—

CASH PRICES; Carriage and Packing Free.

1-Light Frame,	6 feet by 4 feet	£2	0 0
2 ,, ,,	6 feet by 4 feet	2	0 0
2 ,, ,,	8 feet by 5 feet	2	15 0
2 ,, ,,	8 feet by 6 feet	3	0 0
3 ,, ,,	12 feet by 6 feet	4	4 0
4 ,, ,,	16 feet by 6 feet	5	8 0
PIT LIGHTS.	6 feet by 4 feet, painted and glazed ...	0	14 0
	Ditto ditto unglazed ...	0	5 6



TERMINAL END SADDLE BOILERS.

2 ft. 6 in.	long	7	0 0
3 ft. 0 in.	,,	8	5 0
4 ft. 0 in.	,,	11	10 0

CARRIAGE PAID to Railway Stations in England & Wales, Edinburgh and Glasgow, Dublin, and other Ports.



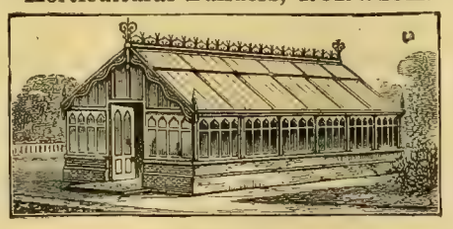
21-oz. and **15-oz. Foreign,** of above sizes, in boxes of 100 feet and 200 feet super.

English Glass, cut to buyers' sizes, at lowest prices, *delivered free and sound* in the country, in quantity.

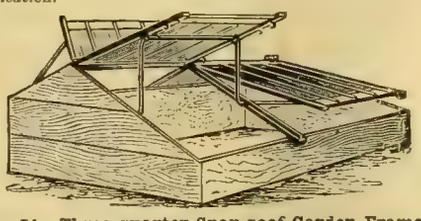
"HORTICULTURAL PUTTY." Own Special Manufacture.

GEORGE FARMILOE & SONS,
LEAD, GLASS, OIL, and COLOUR MERCHANTS,
34, St. John Street, West Smithfield, London, E.C.
Stock Lists and Prices on application. Please quote *Chronicle.*

C. FRAZER'S EXECUTORS,
Horticultural Builders, NORWICH.



This design makes a handsome addition to any garden, and will harmonise with many Villa Residences. Constructed on the most approved principle, all the materials and workmanship being of the very best. Prices, including Erecting, Glazing with 21-oz. English Glass, and Painting, four coats, &c., on application.



No. 54.—Three-quarter Span-roof Garden Frame.

A large stock always ready. The illustration shows a Two-light Frame, 8 by 6 feet; height at back 22 inches, front 11 inches, and at ridge 32 inches. Made of well-seasoned red-wood deal, with sides and ends 1⅛-inch thick. Lights 2-inch thick, glazed with 21-ounce glass, and fitted with Improved Set-opes, as shown above, *of which we are original inventors.*

	Length.	Width.		
1 Light Frame,	4 feet by 6 feet ...	Cash Prices, Carriage Free. Cases extra, allowed if returned.	£2	15 0
2 ,, ,,	8 feet by 6 feet ...		4	7 6
3 ,, ,,	12 feet by 6 feet ...		6	0 0
4 ,, ,,	16 feet by 6 feet ...		7	12 6
5 ,, ,,	20 feet by 6 feet ...		9	5 0
6 ,, ,,	24 feet by 6 feet ...		10	17 6

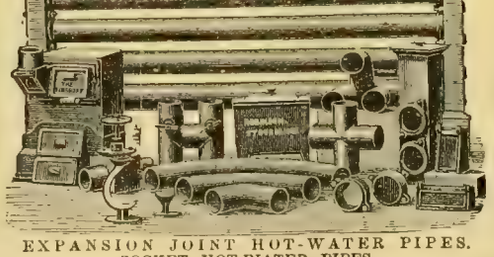
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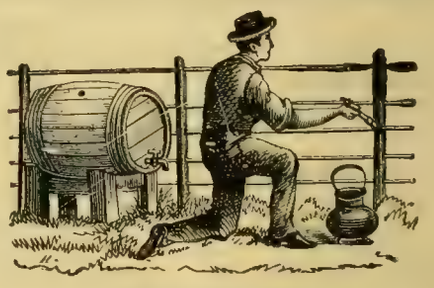
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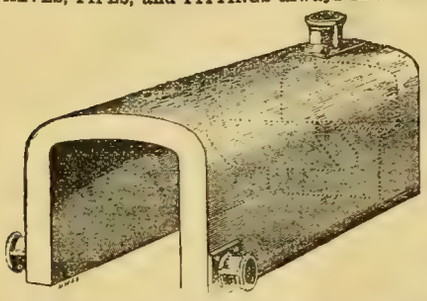
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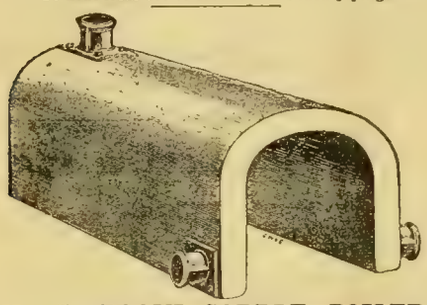
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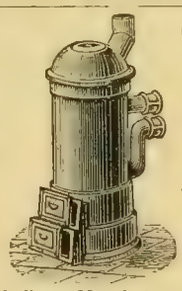


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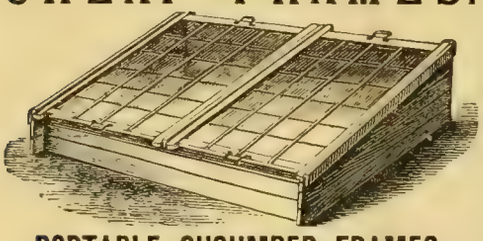


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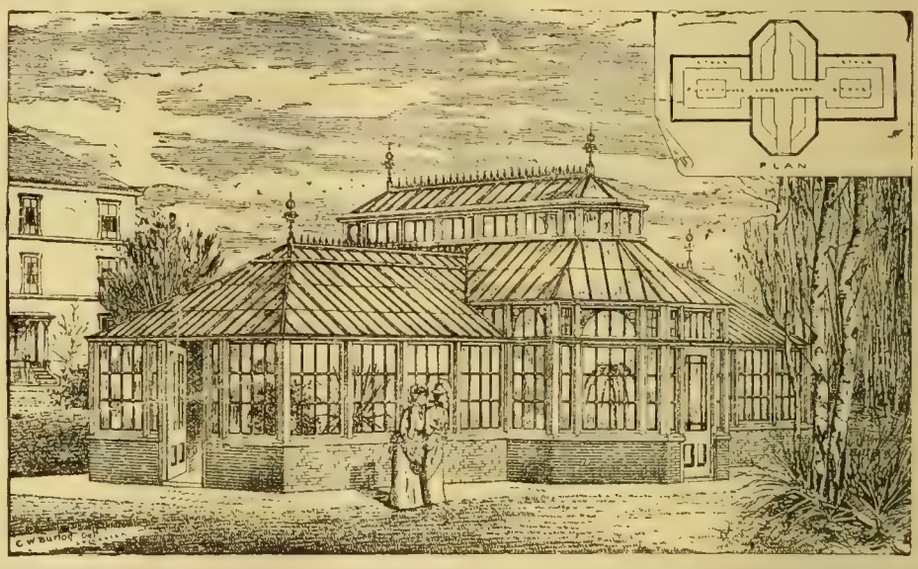
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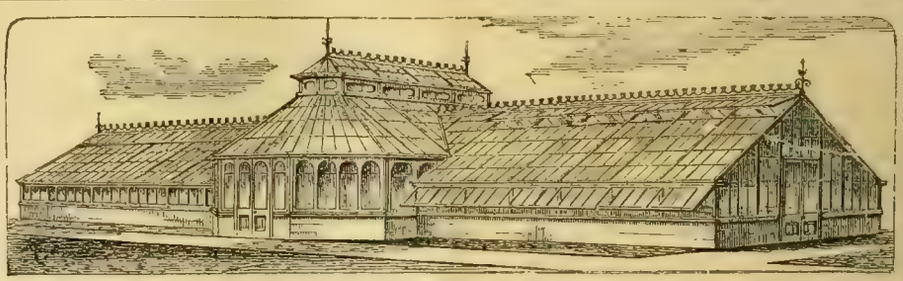


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